Asian American Studies

Asian American Studies Program
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AAS 100  Intro Asian American Studies  credit: 3 hours.
Interdisciplinary introduction to the basic concepts and approaches in Asian American Studies. Surveys the various dimensions of Asian American experiences including history, social organization, literature, arts, and politics.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

AAS 120  Intro to Asian Am Pop Culture  credit: 3 hours.
Introductory understanding of the way U.S. popular culture has affected Asian Americans and the contributions Asian Americans have made to U.S. media and popular culture since the mid 1880's.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

AAS 184  Asian American Cultures  credit: 3 hours.
Same as ANTH 184 and SOC 124. See ANTH 184.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

AAS 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated to a maximum of 6 hours.

AAS 224  Asian Am Historical Sociology  credit: 3 hours.
Same as SOC 224. See SOC 224.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

AAS 258  Muslims in America  credit: 3 hours.
Introduction to the study of Muslims in the United States and broadly the history of Islam in the Americas. Using a comparative approach, we study how the historical narrative of African American and Latino Muslims relates to newer immigrant populations, primarily Arab American and South Asian American Muslim communities. Same as LLS 258 and RLST 258.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

AAS 260  Intro Asian American Theatre  credit: 3 hours.
Same as THEA 260. See THEA 260.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: US Minority Culture(s)

AAS 281  Constructing Race in America  credit: 3 hours.
Same as AFRO 281, HIST 281, and LLS 281. See HIST 281.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AAS 283  Asian American History  credit: 3 hours.
Same as HIST 283. See HIST 283.
AAS 284  Adv Topics in Asian America  credit: 3 hours.
Same as ANTH 284. See ANTH 284.

AAS 286  Asian American Literature  credit: 3 hours.
Same as ENGL 286. See ENGL 286.

AAS 290  Individual Study  credit: 2 TO 3 hours.
Supervised reading and research in Asian American Studies chosen by the student with instructor approval. May be repeated to a maximum of 6 hours. Prerequisite: AAS 100.

AAS 291  Hinduism in the United States  credit: 3 hours.
Introduction to the historical, religious, and socio-cultural aspects of Hinduism in the US. The role of Hinduism in the maintenance of the ethnic identity of Indians in the US will be examined in the context of the rituals, languages, temples, family, and other social organizations. The maintenance and/or shift of the features of traditional (Indian) Hinduism in the transplanted counterpart in the US will be examined. Same as RLST 291. Prerequisite: RLST 104 or RLST 286 or consent of instructor.

AAS 299  Begin Topics Asian Am Studies  credit: 3 hours.
May be repeated in the same or subsequent terms to a maximum of 6 hours.

AAS 310  Race and Cultural Diversity  credit: 4 hours.
Same as AFRO 310, EPS 310, and LLS 310. See EPS 310.

AAS 311  Asian Am Dance and Performance  credit: 3 hours.
Study of Asian American choreographers and how they assert and/or challenge notions of ethnic, racial, social, and political identity through dance practices that range from traditional Asian theatrical genres to experimental performance art. Topics covered will include but not limited to the role of Orientalism in the history of American art dance, the role of art as a form of social activism, and debates over cultural authenticity in the re-staging of 'traditional' dance forms. Same as DANC 341. Prerequisite: One course in Asian American Studies or one course in Dance Studies or consent of the instructor.

AAS 317  Asian American Politics  credit: 3 hours.
Same as PS 317. See PS 317.

AAS 328  Asian Americans & Inequalities  credit: 3 hours.
Same as SOC 328. See SOC 328.

AAS 346  Asian American Youth  credit: 3 hours.
Explores cultural production of second-generation Asian American youth as a historical and social formation. Course examines how youth are actively shaping the U.S. landscape in terms of identity formation, youth, culture, education, juvenile justice, politics and activism, and community formations. These experiences are examined in backdrop of larger historical, economic, racial, social and political forces in the United States. Same as HDFS 341.

AAS 365  Asian American Media and Film  credit: 3 hours.
An examination of media generally and films and videos more specifically (experimental, documentary, independent, and Hollywood features) by, for, and about Asian Americans. Same as CINE 365 and MS 365. Prerequisite: Any AAS course at the 100- or 200-level, or consent of instructor.

AAS 390  Intermed Topics Asian Am St  credit: 3 hours.
May be repeated in the same or subsequent terms to a maximum of 6 hours.
AAS 395  Adv Asian Am Undergrad Reading  credit: 2 OR 3 hours.
Supervised reading and research in upper level Asian American Studies topics chosen by the student with instructor approval. May be
repeated to a maximum of 6 hours. Prerequisite: AAS 100.

AAS 397  Asian Families in America  credit: 3 hours.
Same as HDFS 321 and SOCW 397. See SOCW 397.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

AAS 402  Asian American Education  credit: 4 hours.
Same as EPS 402. See EPS 402.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)
UIUC: Advanced Composition

AAS 435  Commodifying Difference  credit: 3 OR 4 hours.
Same as AFRO 435, GWS 435, LLS 435, and MS 432. See LLS 435.

AAS 450  Asian American Ethnic Groups  credit: 3 OR 4 hours.
Intensive interdisciplinary study of a particular Asian American ethnic group (specific ethnic group focus will change every semester).
3 undergraduate hours. 4 graduate hours. This course may be repeated in the same or separate semesters, to a maximum of 9
undergraduate hours or 12 graduate hours if topics vary. Students may register in more than one section per term if topics vary.
Prerequisite: Any AAS course at the 100- or 200-level or consent of instructor.

AAS 465  Race, Sex, and Deviance  credit: 3 OR 4 hours.
Same as AFRO 465, GWS 465, and LLS 465. See LLS 465.

AAS 470  Asian American Psychology  credit: 3 OR 4 hours.
Same as PSYC 470. See PSYC 470.

AAS 479  Race, Medicine, and Society  credit: 3 OR 4 hours.
Course Information: Same as ANTH 479 and LLS 479. See LLS 479.

AAS 484  Asian Diasporas  credit: 3 OR 4 hours.
Same as ANTH 484. See ANTH 484.

AAS 485  The Politics of Fashion  credit: 3 OR 4 hours.
Same as GWS 485. See GWS 485.

AAS 490  Adv Topics in Asian Am Studies  credit: 3 OR 4 hours.
Research seminar on specialized topics in Asian American Studies. May be repeated if topics vary. Students may register in more than
one section per term if topics vary. Prerequisite: AAS 100 or any Asian American Studies course, or consent of instructor.

AAS 539  Youth, Culture and Society  credit: 4 hours.
Same as EPS 539 and HCD 539. See HCD 539.

AAS 561  Race and Cultural Critique  credit: 4 hours.
Introduction to graduate level theoretical and methodological approaches in Comparative Race Studies. As a survey of theories of race
and racism and the methodology of critique, this course offers an interdisciplinary approach that draws from anthropology, sociology,
history, literature, cultural studies, and gender/sexuality studies. In addition, the study of racial and cultural formation is examined from
a comparative perspective in the scholarship of racialized and Gender and Women's Studies. Same as AFRO 531, ANTH 565, GWS
561, and LLS 561.

AAS 589  Readings in Asian Am Studies  credit: 1 TO 4 hours.
Individual guidance in intensive readings in the literature of one or more subdivisions of the field of Asian American Studies. May be
repeated to a maximum of 8 hours. Students may register in more than one section per term if topics vary. Prerequisite: Graduate
standing or consent of instructor.

AAS 590  Asian Am Studies Seminar  credit: 2 TO 4 hours.
Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing or consent of instructor.
ABE 100  **Intro Agric & Biological Engrg**  credit: 1 hours.
Introduction to the engineering profession with career opportunities in the agricultural and biological engineering discipline. Interactive class activities include concepts necessary for becoming a successful engineer including time management, design concepts, ethics, and teambuilding. Students become familiar with laboratories, computer facilities, internships, and other opportunities that are available to agricultural and biological engineering students. A team design experience is included. Class emphasis on technical communication and problem-solving skills as well as career planning.

ABE 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated to a maximum of 12 hours.

ABE 221  **Agric & Biological Engrg I**  credit: 4 hours.
Introduction to engineering methods used in the design and management of agricultural, biological and environmental systems. Hydrologic cycle, soil-water properties and relationships, water runoff, surveying, soil erosion, water management, engine power, fluid power, traction and weight transfer, and off-road vehicle systems. Prerequisite: One of MATH 220, MATH 221, MATH 234.

ABE 222  **Agric & Biological Engrg II**  credit: 4 hours.
Introduction to biomaterials and bioprocess design. Structure and composition of biomaterials, mass balances, force-deformation of biomaterials, and non-Newtonian fluid flow. Principles of environmental control for biological structures, psychrometrics, mass and heat transfer through buildings, and ventilation requirements. Prerequisite: One of MATH 220, MATH 221, MATH 234.

ABE 361  **Off-Road Machine Design**  credit: 3 hours.
Design and development concepts of agricultural and industrial machines; analysis and synthesis of tillage, planting, harvesting, chemical application, material handling mechanisms, and precision farming tools. Includes laboratory. Prerequisite: ABE 221 and TAM 212.

ABE 374  **Environ Control for Buildings**  credit: 3 hours.
Application of bioenvironmental engineering principles to control agricultural building environments. Psychrometrics, room air distribution, fluids, heat transfer, ventilation equipment, environmental physiology, and design topics. Includes laboratory. Prerequisite: ABE 222.

ABE 396  **Honors Independent Study**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work for James Scholars under the direction of the honors advisor. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

ABE 397  **Independent Study**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of a member of the faculty. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

ABE 398  **Special Topics**  credit: 1 TO 3 hours.
Subject offerings of new and developing areas of knowledge in agricultural and biological engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate term if topics vary to a maximum of 12 hours.

ABE 420  **Kinem & Dynamics of Mech Syst**  credit: 3 OR 4 hours.
Same as ME 440. See ME 440.

ABE 425  **Engrg Measurement Systems**  credit: 4 hours.
Principles of instrumentation systems, including sensing, signal conditioning, computerized data acquisition, test design, data analysis and synthesis. Includes laboratory. Credit is not given for both ABE 425 and ME 360. Prerequisite: ECE 205.

ABE 426  **Applied Machine Vision**  credit: 3 hours.
Machine vision principles, including image acquisition hardware and image processing software. Emphasizes engineering solutions in the food, agricultural and biological realm. Includes laboratory. Prerequisite: CS 101 and MATH 225.

**ABE 430 Project Management** credit: 2 hours.
Engineering team effectiveness; project definition; assessing related technologies; marketing and business planning related to engineering; budgeting and financial analyses of engineering projects; safety, ethics and environmental considerations; intellectual property; engineering proposal presentation. Same as TSM 430.

**ABE 436 Renewable Energy Systems** credit: 3 OR 4 hours.
Renewable energy sources and applications, including solar, geothermal, wind, and biomass. Examines how renewable energy can reduce air pollution and global climate change. Includes a capstone project to design a system for converting renewable energy into thermal or electrical energy. Same as TSM 436. 3 undergraduate hours. 4 graduate hours. Prerequisite: PHYS 211.

**ABE 440 Applied Statistical Methods I** credit: 4 hours.
Same as ANSC 440, CPSC 440, FSHN 440, and NRES 440. See CPSC 440.

**ABE 445 Statistical Methods** credit: 4 hours.
Same as ANSC 445 and NRES 445. See ANSC 445.

**ABE 446 Biological Nanoengineering** credit: 3 OR 4 hours.
Nanodevice design through organization of functional biological components; bio-molecular function and bioconjugation techniques in nanotechnology; modulation of biological systems using nanotechnology; issues related to applying biological nanotechnology in food energy, health, and the environment. 3 undergraduate hours. 4 graduate hours. Prerequisite: MCB 150.

**ABE 455 Erosion and Sediment Control** credit: 2 hours.
Processes, estimation, and control of soil erosion by water, wind and resultant sedimentation. Upland, in-channel, urban, agricultural, disturbed (both military training and mining), and forested environments are discussed. Site planning and design constitute a capstone experience. Same as CEE 455 and TSM 455. 2 undergraduate hours. 2 graduate hours. Prerequisite: CEE 350 or NRES 401; CEE 380 or NRES 201.

**ABE 456 Land & Water Resources Engrg** credit: 3 OR 4 hours.
Hydrology, hydraulics, design, construction and cost estimating of structures for the conservation and quality control of soil and water resources; relationship of topography, soils, crops, climate, and cultural practices in conservation and quality control of soil and water for agriculture. Includes laboratory. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Credit or concurrent registration in TAM 335.

**ABE 457 NPS Pollution Processes** credit: 2 hours.
Principles, concepts, and analysis of processes for nonpoint source pollution involving sediment, inorganic and organic chemicals, and microbial pathogens; hydrologic and pollutant interactions, pollutant fate and transport processes from storm water runoff and percolation; impact of pollutant transport on receiving water and ecosystems. Prerequisite: ABE 221 or CEE 350.

**ABE 458 NPS Pollution Modeling** credit: 2 hours.
Concepts, principles, and application of modeling for assessment and management of agricultural nonpoint source pollution. Modeling of agroecosystems and land use impacts on hydrologic and water quality response of upland catchments. Model selection, calibration, validation, and application for comparative analysis. Case studies in current watershed management issues, with a focus on agricultural waste and nutrient management, using existing field and watershed nonpoint source pollution models. Prerequisite: ABE 457.

**ABE 459 Drainage and Water Management** credit: 3 OR 4 hours.
Design, construction, performance, and maintenance of agricultural drainage systems to meet both production and water quality objectives. Modeling drainage systems. Principles of conservation drainage. Includes laboratory. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Credit or concurrent registration in TAM 335.

**ABE 463 Electrohydraulic Systems** credit: 3 hours.
Engineering principles of electrohydraulic control systems related to off-road vehicles. Basics of fluid power systems, concepts of electrohydraulic systems and controls, analysis and design of electrohydraulic control systems, and applications of electrohydraulic control. Prerequisite: ECE 110 or both ECE 205 and ECE 206; ME 310 or TAm 335.

**ABE 466 Engineering Off-Road Vehicles** credit: 3 hours.
Design and application of off-road vehicles for farm and construction use; thermodynamics of engines; measurement of power and efficiencies; power transmission and traction; chassis mechanics; operator environment. Includes laboratory. Prerequisite: ME 300.

**ABE 469 Industry-Linked Design Project** credit: 4 hours.
Industry-submitted and sponsored design projects which utilize principles of design, engineering analysis and functional operation of engineering systems. Design teams develop concepts, evaluate alternatives, model and analyze solutions, and build and test a final product. Emphases on communication skills, technical writing, and interaction with industry representatives. Prerequisite: One of ABE 361, CHBE 421, TAM 335; or credit or concurrent registration in ME 370.

**ABE 476 Indoor Air Quality Engineering** credit: 4 hours.
Principles and applications of indoor air quality. Particle mechanics, gas kinetics, air quality sampling principles and techniques, air cleaning technologies such as filters, cyclones, electrostatic precipitation for indoor environments; ventilation effectiveness for pollutant control. Includes laboratory and a research/design project. Same as CEE 448. Prerequisite: PHYS 213, MATH 285, and TAM 335.

**ABE 482 Package Engineering** credit: 3 hours.
Same as FSHN 469. See FSHN 469.

**ABE 483 Engg Properties of Food Matls** credit: 3 hours.
Physical properties of foods and biological materials; design of processing equipment and the sensing and control of food processes; thermal, electromagnetic radiation, rheological, and other mechanical properties. Includes laboratory. Prerequisite: TAM 251; either CHBE 421 or both ME 390 and TAM 335.

**ABE 485 Food & Process Engrg Design** credit: 2 hours.
Design of equipment, processes, and facilities for food, pharmaceutical, biotechnology, and related process industries. Prerequisite: ABE 483.

**ABE 487 Grain Drying and Conditioning** credit: 3 hours.
Psychrometric principles of air modification for dehydration and conditioning of moist products, emphasizing the drying of cereal grains; industrial dryers; design of drying, cooling, and aeration systems. Includes laboratory. Prerequisite: ABE 222. Recommended ME 300.

**ABE 488 Bioprocessing Grains for Fuels** credit: 3 hours.
Engineering and scientific principles governing bioprocessing of cereal grains for production of ethanol and other fermentation products. Process unit operations; conventional and alternative feed stock materials; recovery of value-added coproducts and other variables involved in producing fuel ethanol; process simulation; economic analysis. Prerequisite: CHBE 321 and TAM 251.

**ABE 489 Corn Milling Process Design** credit: 3 hours.
Engineering and scientific principles governing the major corn fractionation processes of wet milling, dry milling and alkali cooking, including structural and diffusional characteristics of corn, steeping phenomena and chemical and mechanical fractionation methods. Principles of process design and mill operation. Prerequisite: One of CHBE 421, ME 300, ME 320.

**ABE 497 Independent Study** credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of a member of the faculty. 1 to 4 undergraduate hours. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

**ABE 498 Special Topics** credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in agricultural and biological engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 16 hours.

**ABE 501 Graduate Research I** credit: 1 hours.
Basic research orientation, research methods, presentation skills, laboratory practices, case studies, and professional and ethical conduct.

**ABE 502 Graduate Research II** credit: 1 hours.
Research methodology, teaching methods, lecture preparation and delivery, critical review of scientific articles, peer review and publishing, mentoring and peer relationships, time management, and intellectual property.

**ABE 594 Graduate Seminar** credit: 0 hours.
Presentations of thesis research by graduate students; other presentations on teaching or current research issues related to agriculture, biology, and engineering. Approved for S/U grading only. May be repeated up to a maximum of 6 times.

**ABE 597 Independent Study** credit: 1 TO 4 hours.
Individual investigations or studies of any phases of agricultural engineering selected by the student and approved by the advisor and the faculty member who will supervise the study. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.

**ABE 598 Special Topics** credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in agricultural and biological engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 8 hours.

**ABE 599  Thesis Research**  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
Accountancy

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ACCY 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

ACCY 200  Fundamentals of Accounting  credit: 3 hours.
Survey course in the principles of accounting for students registered in schools and colleges other than the College of Business. Credit is not given for both ACCY 200 and either ACCY 201 or ACCY 202. Prerequisite: Sophomore standing.

ACCY 201  Accounting and Accountancy I  credit: 3 hours.
Introduction to the role of accounting information in establishing organization objectives and goals and identification of strategies to best achieve such objectives and goals. Topics focus on the utility of information necessary for the formation, execution and monitoring of the variety of contracts embedded in organization strategies. Projects facilitate self-discovery of knowledge and development of a variety of professional skills and attitudes. Credit is not given for both ACCY 201 and ACCY 200. Prerequisite: ECON 102 and ECON 103 or equivalents.

ACCY 202  Accounting and Accountancy II  credit: 3 hours.
Continuation of ACCY 201 with focus on strategic management of economic resources, together with acquisition of such resources, and financial and non-financial measures of organizational performance. Credit is not given for both ACCY 202 and ACCY 200. Prerequisite: ACCY 201 or equivalent.

ACCY 290  Prof Internship in Accountancy  credit: 0 TO 3 hours.
Formalized learning experience in combination with practice of accounting while engaged in an internship with a public accounting firm, business, or other off-campus organization; prior approval of learning plan and a summary report of learning experience are required. Approved for both letter and S/U grading. May be repeated in the same or subsequent terms to a maximum of 3 hours. Prerequisite: Open only to undergraduate accountancy majors with junior or senior standing; completion of 300-level accountancy courses appropriate to internship learning plan; and consent of department.

ACCY 301  Atg Measurement & Disclosure  credit: 4 hours.
Introduction to measurement and reporting of organizational performance for strategic and operational purposes with a focus on a variety of financial and non-financial performance measures suitable for both internal and external decision-making. Projects, together with a series of practical workshops, facilitate self-discovery of knowledge and development of a variety of professional skills and attitudes. Prerequisite: ACCY 202 or equivalent and concurrent enrollment in ACCY 302 by students majoring in accountancy (recommended for non-accountancy majors); or consent of department.

ACCY 302  Decision Making for Atg  credit: 4 hours.
Decision making implications of information provided to organization managers and to external stakeholders such as investors, creditors, customers, and regulators. Concepts from economics, statistics, and psychology emphasize the use of quantitative techniques to comprehend uncertainty and risk. Projects, together with a series of practical workshops, facilitate self-discovery of knowledge and development of a variety of professional skills and attitudes. Prerequisite: ACCY 202 or equivalent; ECON 203 or equivalent or concurrent enrollment; and concurrent enrollment in ACCY 301 by students majoring in Accountancy (recommended for non-Accountancy majors); or consent of department.

ACCY 303  Atg Institutions and Reg  credit: 4 hours.
Regulation theory and practice as applied to accounting information. A general framework for regulation of accounting procedures is developed. This framework is applied to reporting, taxation, and regulated business activities. Projects facilitate self-discovery of knowledge and the development of professional attitudes and skills with emphasis on professional research. Prerequisite: ACCY 301 and ECON 302 and FIN 221; or consent of department.

ACCY 304  Accounting Control Systems  credit: 4 hours.
Broad perspective on accounting and control that considers attainment of all goals of an organization, including those concerned with financial objectives. Topics include the conceptual foundations of control and application of practical, analytical tools to the evaluation of an organization's control environment. Cases, class discussion and field research projects emphasize independent thinking, group processes, and communication. Prerequisite: ACCY 301 and ACCY 302 and BADM 310; or consent of department.
### ACCY 312  Principles of Taxation  credit: 4 hours.
Introduction to the tax system faced by businesses operating in the United States with a focus on the impact that the tax system has on business decisions. Topics include the tax environment, tax provisions relevant to businesses and their owners, taxation of individuals and of corporations, and multi-jurisdictional issues. Projects facilitate self-discovery of knowledge and development of a variety of professional skills and attitudes. Prerequisite: ACCY 202 or equivalent.

### ACCY 321  Principles of Public Policy  credit: 3 hours.
Same as BADM 303 and PS 321. See PS 321.

### ACCY 352  Database Design and Management  credit: 3 hours.
Same as BADM 352. See BADM 352.

### ACCY 353  Info Sys Analysis and Design  credit: 3 hours.
Same as BADM 353. See BADM 353.

### ACCY 398  Practical Problems in Atg  credit: 0 TO 10 hours.
Course covers the professional standards relating to corporate financial reporting, taxation, auditing and public sector reporting. Credit not granted toward UIUC degree requirements. Prerequisite: Concurrent registration in the University’s CPA Review course.

### ACCY 405  Assurance and Attestation  credit: 4 hours.
Conceptual introduction to diverse means by which assurers improve the quality of information used by third parties for contracting purposes, with emphases on the credibility- and relevance-enhancement properties of assurers’ services. Topics include the economics of assurance and attestation, and concepts including independence, risk, evidence, and control. Projects facilitate self-discovery of knowledge and development of professional skills and attitudes. 4 undergraduate hours. Prerequisite: ACCY 304 or consent of department.

### ACCY 410  Fin Atg Reporting Standards  credit: 4 hours.
Current authoritative accounting standards and applications to accounting practice. Topics do not represent the full range of financial reporting issues, but are selected based on relevance of the underlying business transaction, complexity of the topic, consistency of applicable standard with underlying reporting concepts, and transferability of the standard to other accounting issues. This course is for students in the Certificate in Accountancy program. 4 undergraduate hours. Prerequisite: ACCY 303 or consent of department.

### ACCY 415  Auditing Stds and Practice  credit: 4 hours.
Framework for understanding and evaluating the professional auditing standards for assurance services. Model of financial reporting provides an overview of the types of information disseminated by companies to external users, and provides the basis for identifying professional standards areas for future standards’ development. This course is for students in the Certificate in Accountancy program. 4 undergraduate hours. Prerequisite: ACCY 405 or consent of department.

### ACCY 423  Intro to International Atg  credit: 3 hours.
Explores similarities and differences of accounting principles and procedures between the United States and other countries with special emphasis on worldwide and regional standardization; emphasizes consolidation of foreign subsidiaries, performance evaluation of foreign operations, statement analysis, translation, solutions to inflation accounting, and taxation of multinationals. Prerequisite: ACCY 301 and ACCY 302, or equivalent; or ACCY 501.

### ACCY 431  Accounting Systems Design  credit: 3 hours.
Examines the fundamentals of accounting systems design, including systems analysis and design techniques; surveys hardware and software considerations; analyzes accounting applications within functional areas of the firm; and studies the control of computerized systems in a business environment. Prerequisite: ACCY 202 and CS 105, or equivalent.

### ACCY 432  Intro to Mgt Info Systems  credit: 2 TO 4 hours.
Analyzes information systems from a management control perspective, emphasizing organization environment, technology, decision models and performance evaluation as determinants of information processing requirements; cases and design projects explore the management of information processing systems, major functional applications and impacts of information technology on individuals and society. Same as BADM 432. 3 undergraduate hours. 2 to 4 graduate hours. Prerequisite: CS 105 or equivalent, or consent of department.

### ACCY 451  Advanced Income Tax Problems  credit: 3 OR 4 hours.
Practical and theoretical training in the more common and important provisions of the federal income tax, advanced problems, and tax case research and preparation. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Senior standing and ACCY 312.

### ACCY 455  Mgt Info and Control Systems  credit: 2 TO 4 hours.
Integration of behavioral, quantitative, and system design concepts in relation to professional work in the management information systems area. Same as BADM 459. 3 undergraduate hours. 2 to 4 graduate hours. Prerequisite: BADM 353 or consent of department.

ACCY 493  Seminar in Accountancy  credit: 3 OR 4 hours.
Selected topics in the field of accountancy. 3 or 4 undergraduate hours. 4 graduate hours. May be repeated in the same or subsequent semesters to a maximum of 8 hours. Prerequisite: Senior or graduate standing in accountancy and course prerequisites indicated by specific sections; or consent of Department.

ACCY 499  Senior Research  credit: 2 TO 4 hours.
Research and readings course for students majoring in accountancy. May be taken by students in the college honors program in partial fulfillment of the honors requirements. 2 to 4 undergraduate hours. May be repeated to a maximum of 6 hours. Prerequisite: Cumulative grade-point average of 3.0., honors in the junior year, or consent of department; senior standing.

ACCY 500  Atg Measuremnt, Rptng & Cntrl  credit: 4 hours.
A managerial perspective of the nature and role of accounting in organization measurement, reporting and control processes. Prerequisite: Enrollment in a non-accountancy masters program in business or consent of department.

ACCY 501  Accounting Analysis I  credit: 4 hours.
Uses of accounting information; collection, processing, and communication of accounting information; measurement of assets, liabilities, equities, and income; and accounting system design. Prerequisite: Enrollment in graduate degree program or consent of department.

ACCY 502  Accounting Analysis II  credit: 4 hours.
In-depth study of accounting valuation processes, accounting income measurement, and special reporting problems of multiple-entity organizations. Prerequisite: ACCY 501 or equivalent; enrollment in graduate degree program or consent of department.

ACCY 503  Managerial Accounting  credit: 4 hours.
Introduction to management accounting as part of the firm's information system, in terms of modern cost accounting and budgetary systems for planning and controlling business operations. Prerequisite: Credit or concurrent registration in ACCY 501 or equivalent; enrollment in graduate degree program or consent of department.

ACCY 504  Auditing  credit: 4 hours.
Introduction to conceptual and applied material in the field of auditing. Emphasizes the audit process, reporting, and professional responsibilities. Prerequisite: Credit or concurrent registration in ACCY 502, or equivalent; enrollment in graduate degree program or consent of department.

ACCY 505  Federal Taxation  credit: 4 hours.
Introduction to historical and conceptual as well as applied material in the accounting area of federal taxation; emphasizes the provisions of the tax law relevant to accounting measurement methods. Students may not receive credit for both ACCY 312 and ACCY 505. Prerequisite: ACCY 501; enrollment in graduate degree program or consent of department.

ACCY 510  Financial Reporting Standards  credit: 4 hours.
Stakeholders' needs for reliable and relevant information about the performance of firms, as well as managers; economic self-interests, influence managers' selection of accounting policies and financial reporting methods. This course selectively surveys both academic research and professional standards to focus on the measurement, classification and disclosure of financial transactions. Cases, class discussion and research projects emphasize independent thinking, group processes, and communication. Prerequisite: ACCY 303, FIN 300 and enrollment in the BS/MS in Accountancy program or consent of department.

ACCY 511  Risk Measurement/Reporting I  credit: 4 hours.
Application of the concepts of risk and uncertainty to the financial management of organizations in achieving business objectives and strategies, with an emphasis on the role of accounting measurement and reporting in the management of such risks. Focuses on integrating knowledge acquired from behavioral, economic, finance, and accounting perspectives. Prerequisite: ACCY 510 and enrollment in graduate accounting degree program or consent of department.

ACCY 512  Risk Measurement/Reporting II  credit: 4 hours.
Application of the concepts of risk and uncertainty to the operational management of organizations in achieving business objectives and strategies, with an emphasis on the role of accounting measurement and reporting in the management of such risks. Focuses on integrating knowledge acquired from behavioral, economic, organizational, and accounting perspectives. Prerequisite: Enrollment in graduate accounting degree program or consent of department.

ACCY 515  Auditing & Assurance Standards  credit: 4 hours.
Role of professional and ethical standards in the conduct of auditing and assurance services and the role of auditing and assurance services in corporate governance. This course selectively surveys both academic and professional literature to focus on the conduct of
auditing and assurance services. Cases, class discussion and research projects emphasize the importance of independent thinking, group processes, and communication for professional accounting practice. Prerequisite: ACCY 405 and enrollment in the BS/MS in Accountancy program or consent of department.

**ACCY 517  Financial Statement Analysis**  credit: 4 hours.
Examines tools and techniques of financial statement analysis from the perspective of investors and creditors; emphasizes theoretical and empirical properties of financial ratios. Prerequisite: ACCY 501, FIN 520, BADM 572; or equivalent; and enrollment in graduate degree program or consent of department.

**ACCY 531  Theory of Atg System Design**  credit: 4 hours.
Problems and procedures in connection with designing and installing accounting systems. Prerequisite: Enrollment in graduate degree program or consent of Department.

**ACCY 551  Corporate Income Taxation**  credit: 4 hours.
Analyzes the tax treatment, problems, planning techniques, and underlying governmental policies involving corporations and their shareholders; coverage includes formations, operations, distributions, liquidations, reorganizations, and affiliations. Prerequisite: ACCY 451 or equivalent or consent of department.

**ACCY 552  Partnership Income Taxation**  credit: 4 hours.
Analyzes the tax treatment, problems, planning techniques, and underlying governmental policies involving partnerships and their partners, including Subchapter S corporations and their shareholders. Prerequisite: ACCY 312 or equivalent.

**ACCY 553  Selected Topics in Fed Tax**  credit: 2 TO 4 hours.
Seminar on federal tax topics of current interest in specialized areas; topics include international taxation, deferred compensation, problems of closely-held businesses, estate planning, taxation of trusts, and new developments. May be repeated with the consent of the department. Prerequisite: ACCY 451 or consent of department.

**ACCY 556  Tax Research**  credit: 4 hours.
Provides the student with a working knowledge of tax research methodology utilized by accountants in public practice. Aims to develop the student's capacity for either solving or defending his/her position with respect to a particular tax issue. Prerequisite: Graduate standing or consent of department.

**ACCY 559  Income Tax Development**  credit: 4 hours.
Theoretical and historical approach to the study of the development of federal income taxation, together with some research on tax cases and critical appraisal of the current law and proposals for its revision. Prerequisite: Enrollment in graduate degree program or consent of department.

**ACCY 560  Information in Value Creation**  credit: 4 hours.
Introduction to the role of information in processes employed by organizations to create value in market settings, including concepts and theories from strategic management, economics of organization, and systems theory and the relevance of such theories to the concepts and practices of accounting and auditing. This course is for graduate accountancy students who did not earn a BSA at UIUC. Prerequisite: Enrollment in graduate accounting degree program and consent of department.

**ACCY 571  Multinational Enterprise Atg**  credit: 4 hours.
Analysis of accounting for operations of multinational enterprises which are subject to a wide variety of regulatory, social, and environmental influences; emphasizes financial and managerial accounting systems and their functions as evaluative, control, and reporting tools; and examines social accounting, foreign taxation, and nonmonetary evaluation methods. Prerequisite: Undergraduate degree in accountancy or equivalent; or ACCY 501 and consent of department.

**ACCY 572  Atg Under Different Social Sys**  credit: 4 hours.
Analyzes and compares accounting systems under different social systems with emphasis on the impact of regulatory and political structures on accounting; compares both macro and micro accounting systems for politically centralized and decentralized planning. Prerequisite: Undergraduate degree in accounting.

**ACCY 585  Constructs in Atg Research**  credit: 4 hours.
Examines the role of information in economic and behavioral models of decision making under uncertainty; presents major paradigms underlying contemporary accounting research. Interdisciplinary approach; readings drawn from the accounting, behavioral, economics, and finance literature. Prerequisite: MATH 463, ACCY 591, and ECON 502.

**ACCY 590  Adv Prof Internship in ACCY**  credit: 0 TO 4 hours.
A formalized learning experience in combination with practice of accounting while engaged in an internship with a public accounting firm, business, or other off-campus organization; prior approval of learning plan and a summary report of learning experience required. Approved for both letter and S/U grading. May be repeated to a maximum of 4 hours. Prerequisite: Open only to accountancy majors
enrolled in the department's integrated bachelor/master program or students with graduate standing in accountancy; completion of 300-level accountancy courses appropriate to internship learning plan; and consent of department.

**ACCY 591  Professional Research**  credit: 4 hours.
Instruction in research methods, materials, and techniques together with individual practice in conducting and reporting specific professional research projects. Prerequisite: Enrollment in graduate accounting degree program or consent of department.

**ACCY 592  Intro to ACCY Research**  credit: 4 hours.
Comparative study of alternative methodologies and conceptual frameworks and their application to selected current research issues central to the development of accounting thought, both theoretical and empirical. Prerequisite: ACCY 511 and ACCY 512 and courses in behavioral science, mathematics, and economics; or equivalent background and admission to the accountancy Ph.D. program; or consent of department.

**ACCY 593  Special Research Problems**  credit: 1 TO 8 hours.
Individual investigations or research projects selected by the students, subject to approval by the graduate adviser and the executive officer of the Department. Prerequisite: Enrollment in graduate accounting degree program or consent of department.

**ACCY 594  Doctoral Research Seminar**  credit: 4 hours.
Seminars in various accounting areas designed to enhance the research abilities of doctoral students and to assist them in preparing research proposals; these include Behavioral Dimensions, Public Sector, Tax, Auditing, Managerial, and others announced in the Class Schedule. May be repeated. Prerequisite: Credit or concurrent registration in ACCY 592 or consent of department.

**ACCY 595  Models of Decision and Choice**  credit: 4 hours.
Same as PSYC 534. See PSYC 534.

**ACCY 599  Thesis Research**  credit: 0 TO 16 hours.
Individual direction and guidance in writing theses; seminar discussion of progress made. Approved for S/U grading only.
Agricultural and Consumer Economics

Agricultural and Consumer Economics
Head of Department: Robert Hauser
Department Office: 332 Mumford Hall, 1301 West Gregory Drive, Urbana
Phone: 333-1810
www.ace.uiuc.edu

ACE 100 Agr Cons and Resource Econ credit: 4 hours.
Principles of microeconomics; demand, production, supply, elasticity, markets, and trade are presented and used in the analysis of decisions of individuals relating to agricultural production, food and textile consumption, and natural resource use. Macroeconomic concepts are also introduced. Students receiving credit for ECON 102 may not receive credit for ACE 100.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ACE 161 Microcomputer Applications credit: 3 hours.
Instruction and practice in solving data-related problems with microcomputers and general purpose software packages.

ACE 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
Experimental course on a special topic in agricultural and consumer economics. Topic may not be repeated except in accordance with the Code. Approved for both letter and S/U grading. May be repeated up to 5 hours in a semester, to a maximum of 12 hours.

ACE 210 Environmental Economics credit: 3 hours.
Economic issues surrounding environmental quality, including: costs and benefits of environmental protection; economics of environmental policies (such as those dealing with toxics, water, and air pollution, and municipal solid waste); and economics of international environmental problems (such as ozone depletion and climate change). Same as ECON 210, ENVS 210, NRES 210, and UP 210. Prerequisite: ACE 100 or ECON 102.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ACE 222 Agricultural Marketing credit: 3 hours.
Examines factors affecting the size of the market for agricultural products and the scope of marketing activities; functions and services performed; pricing agricultural products, including the nature and causes of price fluctuations; and costs of marketing and efforts to reduce costs and improve the marketing system. Prerequisite: ACE 100 or ECON 102.

ACE 231 Food and Agribusiness Mgt credit: 3 hours.
Overview of management in the food and agribusiness sector. Major topics covered include: introduction to the food and agribusiness sector; the environment of the firm; fundamentals, structural design, and change in organizations; leadership, motivation, communication; and planning and control. Coverage is at the introductory level with a focus on textbook material and current issues. Prerequisite: Sophomore standing, ACE 100 or ECON 102, and ACE 161.

ACE 232 Management of Farm Enterprises credit: 3 OR 4 hours.
Economic principles are applied to the management of farms using budgeting system analysis, record analysis, financial management, and lease analysis. Problems related to resource appraisal and business organization are also addressed. Three hours credit without home farm problem, or four hours credit with home farm problem. Prerequisite: ACE 100 or ECON 102.

ACE 240 Personal Financial Planning credit: 3 hours.
Examines principles of financial planning applied to individuals and households, with attention to organizing and analyzing financial information, budgeting, acquiring financial assets, managing credit, planning for taxes, investments, risk management, retirement, and estate planning. Students may not receive credit for both ACE 240 and ACE 245. Prerequisite: Sophomore standing and 3 hours of sociology, psychology, or economics.

ACE 245 Personal Finance credit: 3 hours.
Examination of principles of personal finance with attention given to research findings on the interdependence of financial decisions and energy, time, and other resources used to attain goals and maintain values. ACE 245 has been replaced by ACE 240. Students may not receive credit for both ACE 245 and ACE 240. Prerequisite: Sophomore standing and 3 hours of sociology, psychology, or economics.

ACE 251 The World Food Economy credit: 3 hours.
Examination of global food production, consumption, and trade; problems of hunger and population; the role of agricultural development, trade, and aid in relieving hunger. Prerequisite: ACE 100 or ECON 102.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

ACE 254  **Economic Systems in Africa**  credit: 3 hours.
Examines systems of production and exchange in Africa. Through lectures, discussions, readings and films participants will study the ways African people interact in local markets and the impact of national and international markets on their welfare. Same as AFST 254.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

ACE 255  **Econ of Rural Poverty and Dev**  credit: 3 hours.
Examination of rural poverty and development issues, with particular attention to current anti-poverty policies and programs and alternative programs. Topics include measurement of poverty; causes of rural poverty; income maintenance, education, and employment policies and their consequences; and rural development strategies. Prerequisite: ACE 100 or ECON 102 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ACE 261  **Applied Statistical Methods**  credit: 4 hours.
Statistical methods and computer applications for agricultural and consumer economics, including descriptive statistics, probability distribution, interval estimation, hypothesis testing, analysis of variance, simple and multiple regression, and non-parametric methods. Students who have received credit for ECON 202, CPSC 440, STAT 100, or equivalent may not receive credit for this course. Prerequisite: MATH 124 or MATH 125.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

ACE 270  **Consumer Economics**  credit: 3 hours.
Introduction to the study of the consumer in the American economy; sources of consumer information and consumer protection; and examination of current consumer issues within an economic framework. Prerequisite: ACE 100 or ECON 102 or consent of instructor.

ACE 293  **Off-Campus Internship**  credit: 1 TO 4 hours.
Supervised, off-campus experience in a field directly pertaining to a subject matter in agricultural and consumer economics. Approved for S/U grading only. May be repeated up to 4 hours in a semester, to a maximum of 10 hours. Prerequisite: Sophomore standing, cumulative GPA of 2.5 or above at the time the internship is arranged, and consent of instructor.

ACE 294  **On-Campus Internship**  credit: 1 TO 4 hours.
Supervised, on-campus, learning experience with faculty engaged in research. Approved for S/U grading only. May be repeated up to 4 hours in a semester, to a maximum of 10 hours. Prerequisite: Sophomore standing, cumulative GPA of 2.5 or above at the time the internship is arranged, and consent of instructor.

ACE 295  **Research or Thesis**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. Approved for both letter and S/U grading. May be repeated in the same or subsequent terms as topics vary. May be repeated up to 4 hours in a semester, but no more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward the degree. Prerequisite: Junior standing, cumulative GPA of 2.5 or above at the time the activity is arranged, and consent of instructor.

ACE 303  **Rural Taxation**  credit: 2 hours.
Federal, state, and local taxation with emphasis on their application to farm income, farm property, farm property transfers, and agricultural cooperatives; introductory material on the uses and sources of revenue. ACE 303 has been replaced by ACE 346. Students may not receive credit for both ACE 303 and ACE 346.

ACE 306  **Food Law**  credit: 3 hours.
Explores the legal and political dimensions of food law, policy and trade in the United States and major trading partners. Examines the development of major national and state laws that apply to production, distribution and retail sale of food. Evaluates current issues in food regulation, including: biotechnology, organics, health labeling claims, food safety and products liability litigation. Discusses food regulation in other countries within the context of international treaties such as the World Trade Organization and United Nations.
ACE 310  Natural Resource Economics  credit: 3 hours.
Economic principles are used to analyze a broad range of natural resource policy and management issues. Economic concepts developed include public goods, social welfare, discounting, dynamic efficiency, and resource scarcity. Natural resources examined include biodiversity, fisheries, forests, minerals, soil, and water resources. Same as ENVS 310 and NRES 310. Prerequisite: ACE 100 or ECON 102.

ACE 332  Farm Management  credit: 3 hours.
Students develop expertise in evaluating and making decisions similar to those faced by farm operators and managers. Prerequisite: ACE 232; credit or concurrent registration in ACE 340.

ACE 334  Retail Market Analysis  credit: 3 hours.
Analysis of retail markets, competition, and role of the retailer in relationship to primary and secondary markets and the consumer. Prerequisite: BADM 320 or concurrent registration in BADM 320.

ACE 340  Agricultural Finance  credit: 3 hours.
Introduction to agricultural finance including study of financial markets and institutions providing debt and equity capital to agricultural firms, development of skills in applying principles and methods of financial management to agricultural firms. ACE 340 has been replaced by ACE 345. Students may not receive credit for both ACE 340 and ACE 345. Prerequisite: ACE 232 or ACCY 201, or equivalent.

ACE 341  Contemp Issues in AgAccy&Fin  credit: 2 hours.
Students study contemporary issues and career opportunities in AgriAccounting and AgriFinance in this course. An in-depth dialogue with industry professionals helps develop an understanding of the skill sets needed to succeed in each of the different career paths discussed. May not be repeated for credit.

ACE 345  Finan Decision Indiv Sm Bus  credit: 3 hours.
Introduction to financial decision-making for small businesses and individuals. Examines financial statement preparation and analysis; capital structure (use of debt and equity); investment analysis and portfolio theory; time value of money; interest rates and term structure; asset markets (pricing theories); evaluation of financial risk and insurance concepts, and an introduction to credit markets and financial capital suppliers. In addition, there is a class project involving a visit to either a lender or a financial planner/advisor, and other experiences to introduce students to services and careers in financial sectors. Students may not receive credit for both ACE 345 and ACE 340. Prerequisite: ACCY 201 or equivalent, or consent of instructor.

ACE 346  Tax Policy and Finan Planning  credit: 3 hours.
Explores the federal tax system, including income, social security, Medicare, and estate taxes, and state and local tax systems. Students learn basic tax principles, public policy issues embedded in the tax systems, and how tax law influences financial plans and decisions. Helps students make wiser financial decisions through increased understanding of the tax impacts of those decisions, participate knowledgeably in public debates surrounding tax policy, and prepare for careers as financial planners. Students may not receive credit for both ACE 346 and ACE 303. Prerequisite: Sophomore standing.

ACE 387  Textiles in the Global Economy  credit: 3 hours.
History of the development of fiber, fabric, apparel, and related industries; present structure, organization, domestic and international operations; interrelationships of these industries; textile trade policies; trends of the major sectors of the primary and secondary markets; and application of the principles of marketing to the textile complex.

ACE 396  Honors Research or Thesis  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the direction of the Honors advisor. May be repeated in the same or subsequent terms as topics vary. May be repeated up to 4 hours in a semester, but no more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward the degree. Prerequisite: Junior standing, admission to the ACES Honors Program, and consent of instructor.

ACE 398  Seminar  credit: 1 TO 3 hours.
Group discussion on a special topic in a field of study directly pertaining to subject matter in agricultural and consumer economics. Approved for both letter and S/U grading. May be repeated to 3 hours in a semester, up to a maximum of 12 total hours. Prerequisite: Junior standing and consent of instructor.

ACE 403  Agricultural Law  credit: 3 TO 4 hours.
Relation of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation, and other problems involving agriculture. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing.

ACE 406  Environmental Law  credit: 3 TO 4 hours.
Examination of environmental law issues. Topics include common-law pollution control; role of administrative agencies and courts; federal and state power; air and water pollution; regulation of toxic substances; protection of land, soil and other natural resources. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ACE 403, or BADM 300, or BADM 301 recommended.

**ACE 411 Environment and Development**  credit: 3 TO 4 hours.
Relationship between economic development and environmental sustainability through application of cost-benefit analysis and environmental economics. Developing and developed country issues are considered with an emphasis on hands-on applications of project appraisal, social benefit-cost analysis, green accounting, and non-market valuation. 3 undergraduate hours. 4 graduate hours. Prerequisite: ECON 302 or equivalent.

**ACE 427 Commodity Price Analysis**  credit: 3 hours.
A comprehensive and in-depth survey of commodity price analysis with emphasis on the fundamental factors affecting prices of agricultural products; sources of information relating to production and demand factors; government activities as they relate to prices of agricultural products; technical analysis of agricultural product prices; and market efficiency and forecasting. Prerequisite: ACE 100 or ECON 102; ACE 261, or equivalent.

**ACE 428 Commodity Futures and Options**  credit: 3 hours.
Development of futures trading; operation and governance of commodity exchanges; economic functions of futures trading; operational procedures and problems in using futures markets; public regulation of futures trading; evaluation of market performance. Field trips required; see Class Schedule for approximate cost. Prerequisite: ACE 100 or ECON 102.

**ACE 430 Food Marketing**  credit: 3 hours.
Performance of the food system; marketing margins; transportation, advertising, and retailing of food products; structure, conduct, and performance of food marketing firms and industries; government and public interest in the food system. Same as FSHN 425. Prerequisite: ACE 100 or ECON 102, ACE 222 recommended.

**ACE 431 Agri-food Strategic Management**  credit: 3 hours.
Process of strategic decision-making in food and agribusiness firms; methods for analysis of business and regulatory environment; organizational issues in strategy choice for firms and supply chains. Same as BADM 438. Prerequisite: ACE 231, BADM 320, or ACE 222; or consent of instructor.

**ACE 435 Global Agribusiness Management**  credit: 3 TO 4 hours.
Examination of the economic and strategic management of food, textile, and agribusiness firms within a global business environment; topics include the global business environment and its institutions, organizational strategies and policies, and business operations in global agricultural, food and textile industries. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ACE 231, ACE 222, or BADM 320 or consent of instructor.

**ACE 436 Intl Business Immersion**  credit: 4 hours.
Provides participants an in-depth, experiential immersion into the complex issues and constraints that confront international marketing channel participants. Contextually grounded and themed in a specific industry, the course combines on-campus lectures with an intensive international immersion experience to Europe, Asia, or Latin America. By following the complete marketing channel from raw materials procurement to final consumption, participants gain first-hand knowledge of the necessary managerial decision-making skills required to successfully operate in today's global business environment. Same as BADM 436. May be repeated to a maximum of 8 undergraduate and/or 8 graduate hours. Prerequisite: Consent of instructor.

**ACE 439 Agri-food Management Practicum**  credit: 4 hours.
Capstone course in Agribusiness Markets and Management. The role and practice of senior management in food and agribusiness industries are examined with an emphasis on identification, analysis, and management of strategic issues in the sector. In-depth dialogue with executives-in-residence from the agribusiness sector are an integral part of the experience. Same as BADM 439. Prerequisite: ACE 431 and consent of instructor. Course cannot be taken credit / no credit.

**ACE 441 Case Studies in AgAccy&Finance**  credit: 3 hours.
This is a capstone course for students specializing in accountancy and finance. Students apply business concepts and tools to real-world situations in agribusiness. Industry professionals participate in the learning experience. This course may not be repeated for credit. Students may not receive credit for both ACE 441 and ACE 447. Prerequisite: ACCY 301 or FIN 300.

**ACE 442 Modeling App in Agr Finance**  credit: 3 TO 4 hours.
Analysis of the financial management/performance of agribusiness and cooperative firms: interpretation of financial statements, analysis of capital structure, working capital management, capital budgeting, and introduction to real options. Course involves computerized model development paralleling text material. 3 undergraduate hours. 3 or 4 graduate hours. Students may not receive credit for both ACE 442 and ACE 446. Prerequisite: ACE 345, or FIN 221, or equivalent.

**ACE 443 Inter Agricultural Finance**  credit: 3 TO 4 hours.
Examination of finance principles applied to commercial agriculture at an intermediate level; farm financial and investment analysis, risk and liquidity analysis, capital structure and leasing in agriculture; and organization, structure, and analysis of rural financial markets and institutions. 3 undergraduate hours. 3 or 4 graduate hours. ACE 443 has been replaced by ACE 444. Students may not receive credit for both ACE 443 and ACE 444. Prerequisite: ACE 340 and ACE 261, or equivalent.

ACE 444  **Finan Serv Individ Small Bus**  credit: 3 OR 4 hours.
Includes: i) development of improved skills related to modern credit risk assessment and management; ii) understanding bank and lending institutions' objectives and iii) understanding the organization of markets supplying financial capital to individuals and small business including the general regulatory and oversight environment under which they operate. 3 undergraduate hours. 3 or 4 graduate hours. Students may not receive credit for both ACE 444 and ACE 443. Prerequisite: ACE 340 or ACE 245 or FIN 221, or consent of instructor.

ACE 445  **Intermediate Personal Fin Plan**  credit: 4 hours.
Financial planning philosophies, techniques, and procedures. Course uses case studies and problem-solving activities to construct financial plans for individuals and families in various life cycle stages and family structures. Prerequisite: ACE 240, ECON 302, and junior standing or consent of instructor; FIN 230 is recommended.

ACE 446  **Modeling App's Finan Plan**  credit: 3 OR 4 hours.
Improves ability to make effective financial plans and decisions. Involves development of decision tools that are applied to "real world" financial data sets and planning/decision-making circumstances. Topics include applied data management techniques (designing queries/storable forms), financial statement analysis, numeric optimization tools, leverage assessment, incorporating risk in decisions, capital budgeting and time value of money, term structure of interest rates, and currency exchange. 3 undergraduate hours. 3 or 4 graduate hours. Students may not receive credit for both ACE 446 and ACE 442. Prerequisite: ACE 240 or ACE 345 or FIN 221, or consent of instructor.

ACE 447  **Case Stud Agr Accy & Fin Plan**  credit: 3 hours.
Capstone course for agricultural accounting, agricultural finance, and financial planning; applies business and planning concepts and tools to real-world situations; emphasizes group decision making; industry professions participate in the learning experience. Course Information: Students may not receive credit for both ACE 447 and ACE 441. Prerequisite: ACCY 240 or ACE 345 or FIN 221, or consent of instructor.

ACE 448  **Rural Real Estate Appraisal**  credit: 3 TO 4 hours.
Valuation methods and value bases of rural real estate; legal aspects of property rights, appraisal theory and procedures, condemnation appraisal, characteristics of the rural land market, soil identification and productivity, and other legal, economic, agronomic, and engineering aspects of real estate valuation. Laboratory field trips, including a practice appraisal; see Class Schedule for approximate cost. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: NRES 201 and ACE 232, or equivalent.

ACE 451  **Agriculture in Intl Dev**  credit: 3 TO 4 hours.
Economics of agricultural development and the relationships between agriculture and other sectors of the economy in developing nations; agricultural productivity and levels of living in the less developed areas of the world; and studies of agricultural development in different world regions including Africa, Asia, and Latin America. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ECON 302 or consent of instructor.

ACE 452  **The Latin American Economies**  credit: 2 TO 4 hours.
Same as ECON 452. See ECON 452.

ACE 453  **Econ Dev in S and SE Asia**  credit: 2 TO 4 hours.
Analysis of plans and progress toward economic development in South and Southeast Asia; economic characteristics of the area and their significance for economic development. 3 undergraduate hours. 2 to 4 graduate hours. Prerequisite: ECON 302 or consent of instructor.

ACE 454  **Econ Dev of Tropical Africa**  credit: 2 TO 4 hours.
Types of African economies and growth of the exchange economy; development of natural resources, industry, trade, finance, and education; analysis of economic integration, governmental planning, and development projects; and demographic, land tenure, and institutional influences on development. 3 undergraduate hours. 2 to 4 graduate hours. Prerequisite: ECON 302 or consent of instructor.

ACE 455  **Intl Trade in Food and Agr**  credit: 3 hours.
Economic theory used to analyze trends and patterns of international trade in major agricultural commodities and to understand interaction between economic development, policy, and trade; welfare implications of policies affecting production, consumption, and trade; implications of protectionism, free trade, regional trade blocs, and multilateral trade liberalization, and the role for international trade institutions. Prerequisite: ECON 302 or consent of instructor.

ACE 456  **Agr and Food Policies**  credit: 3 TO 4 hours.
Analysis of agricultural and food policies and programs and their effects on producers and consumers of agricultural products. Formulation of agricultural and food policies are examined with an emphasis on historical and current economic problems affecting agriculture and rural America. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ECON 302 or consent of instructor.

ACE 471 Consumer Economic Policy credit: 3 hours.
Analysis of choice-making, buying, using, and disposing of consumer goods by families, social policy Perspectives considered. 3 undergraduate hours. Prerequisite: ACE 100 or equivalent and junior standing.

ACE 474 Econ of Consumption credit: 3 TO 4 hours.
Concepts, theories, and methods for analysis of the micro and macro aspects of consumption; includes standards and content of consumption and description of consumption patterns and trends in the USA and selected other countries. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ECON 302 or consent of instructor; a course in statistics; junior standing.

ACE 476 Family Economics credit: 2 TO 4 hours.
Economic welfare of American families, application of economic theory to the behavior of families and individuals with respect to time allocation between the home and the market; family forms; human capital accumulation; gender differences in income; income inequality; and poverty. Role of public policy is considered. 3 undergraduate hours. 2 to 4 graduate hours. Prerequisite: ECON 302 or consent of instructor; a course in statistics; senior standing.

ACE 480 Fiber and Textile Performance credit: 4 hours.
Same as NRES 480. See NRES 480.

ACE 496 Practicum credit: 4 TO 12 hours.
Cooperatively supervised field experience in management and administration in a textile marketing business. Only four hours may be applied to the total required for a graduate degree. At the undergraduate level, up to four hours may be counted toward the hours required in Agricultural and Consumer Economics. Approved for both letter and S/U grading. Prerequisite: ACE 387 or ACE 334 and consent of instructor. Not available to students on probation.

ACE 499 Seminar credit: 1 TO 4 hours.
Group discussion or an experimental course on a special topic in agricultural and consumer economics. Approved for both letter and S/U grading. May be repeated in the same semester to 4 hours, or subsequent terms to a maximum of 12 hours as topics vary.

ACE 500 Applied Economic Theory credit: 4 hours.
Provides an understanding of theory of the firm, consumer economics and various market models necessary to conduct applied professional economic research with special emphasis on applications relevant to agricultural, consumer, development, and resource economics. Multivariate calculus and optimization methods are used.

ACE 501 Risk and Info: Theory and App credit: 4 hours.
Applications of the theory of economic behavior under uncertainty and asymmetric information. Analysis of individual decision making under uncertainty includes: tests of the expected utility hypothesis; comparative statistics of changes in risk preferences and risk; and moment based models of decision making. Analysis of economic equilibrium under uncertainty and asymmetric information includes tests for complete markets and applications of noncooperative game theory. Prerequisite: Concurrent enrollment in ECON 500 and ECON 506.

ACE 502 Demand/Supply/Firms/Households credit: 4 hours.
Applications of demand and supply theories and applications of firm and household behavior. Topics include demand and supply systems, aggregation and separability, dynamics, formation and boundaries of the firm, household decision making, intrahousehold allocation, allocation of time, human capital, and hedonics. Same as ECON 513. Prerequisite: ECON 500 and ACE 501.

ACE 503 Equilibrium and Welfare Econ credit: 4 hours.
Provides a theoretical and applied treatment of economic equilibrium and the consequences of displacement of equilibrium for the welfare levels of economic agents. Displacement of equilibrium will be shown to be brought about by changes in government policy, technology, and consumer preferences. Welfare measures under partial equilibrium, general equilibrium, and multi-market models will be presented. Includes various applications of welfare economics in the analysis of policy and technological change. Prerequisite: ECON 500 and at least two semesters of college calculus.

ACE 510 Adv Natural Resource Economics credit: 4 hours.
Economic theory is used to examine the allocation of renewable and efficiency issues that arise from natural resource policy and management issues. Same as ECON 515, ENVS 510, and NRES 510. Prerequisite: ECON 302 or equivalent.

ACE 516 Environmental Economics credit: 4 hours.
Same as ECON 516 and ENVS 511. See ECON 516.
ACE 520 Food Commodity Markets credit: 4 hours.
Examination of selected economic problems in marketing agricultural products and relevant theory and empirical methods for analyzing and interpreting research results. Topics include: operational efficiency in marketing firms and industries; efficient allocation over space, form, and time; price making institutions; and research in demand stimulation and selected issues in trade. Prerequisite: ACE 563, and ECON 500; or equivalent.

ACE 527 Advanced Price Analysis credit: 4 hours.
Study of methods used to analyze factors affecting agricultural prices; analysis of agricultural prices and price movements with respect to time, space, and form; and examination of methods of price forecasting and techniques of time series analysis. Prerequisite: ACE 562 or ECON 507 and ECON 500; or equivalent.

ACE 528 Research in Futures Markets credit: 4 hours.
Research literature on commodity futures and options markets, both theoretical and empirical; topics include: supply of storage, basis models, theory of the firm and hedging under uncertainty, optimal hedging, speculative returns, market performance, pricing efficiency and option pricing. Prerequisite: ACE 562 or equivalent, and ECON 500 or equivalent.

ACE 530 Applied Production Economics credit: 4 hours.
Econometric applications of the economic theory of production. Basic theory includes production functions; duality; cost functions; profit functions and parameters that can be derived from them such as returns to scale or substitution elasticity. Econometric issues include simultaneity bias, panel data, instrumental variables, generalized method of moments, functional forms, nonparametrics, and dynamics. Prerequisite: ECON 500 and ACE 562.

ACE 542 Advanced Agricultural Finance credit: 4 hours.
Theory of financial decision making as applied to farms and firms related to agriculture. Topics include asset pricing models, financial markets, capital structure, farmland control, term structure of interest rates, risk management and credit evaluation. Prerequisite: ECON 500, calculus, and mathematical statistics, or equivalent; at least one course in finance strongly recommended; or consent of instructor.

ACE 551 International Food Policy I credit: 4 hours.
Economic theory and empirical analyses are used to study economic development, emphasizing the structural transformation of an economy and the role of public policies in supporting or hindering that process. Topics include growth, determinants of supply and demand, and measuring and evaluating the effects of public policies. Special attention is paid to the role of the agricultural sector, as the home of most productive resources in the early stages of development. Prerequisite: ECON 500 or equivalent.

ACE 556 International Food Policy II credit: 4 hours.
Economic theory is used to study both the effects and the causes of public policies in an international context that influence agricultural industries, consumers, and taxpayers. Neoclassical models of government intervention are used to study the welfare effects of income redistribution and stabilization policies and macroeconomic policies as they affect agriculture. Formal models of political economy and public choice are used to analyze the underlying causes of public policy. Emphasis is placed on the political power of interest groups as an explanation of public policy decisions. Prerequisite: ECON 500 or equivalent.

ACE 561 Adv Res and Scholarly Comm credit: 4 hours.
Seminar intended for Ph.D. students who have completed written preliminary examinations. Develops a comprehensive understanding of the research process. Discussions include identification of research topics, structure of research proposals, review of literature, effective communication, management of research activities, and contributions to scholarly debate. Prerequisite: Consent of instructor.

ACE 562 Applied Regression Models I credit: 2 hours.
Application of simple regression methods to problems in agricultural and consumer economics with emphasis on foundational probability, random variable, and distribution concepts, development of the simple, two-variable regression model; estimation of model parameters; hypothesis testing; and prediction. Prerequisite: ACE 261 or equivalent; one of MATH 220, MATH 221, MATH 234.

ACE 563 Optimization Methods credit: 2 hours.
Application of mathematical programming methods to discrete models in agricultural economics; Kuhn-Tucker theorem, Lagrange multipliers, duality, simplex method as applied to linear and quadratic programming, and input-output analysis models in agriculture. Prerequisite: MATH 124; one of MATH 220, MATH 221, MATH 234.

ACE 564 Applied Regression Models II credit: 2 hours.
Application of multiple regression methods to problems in agricultural and consumer economics with emphasis on extensions to the simple, two-variable regression model, development of the multiple regression model; and problems created by violations of basic model assumptions. Prerequisite: ACE 562 or equivalent.

ACE 565 Modeling Dynamic Econ Systems credit: 2 hours.
Computer simulation modeling as a tool for studying the behavior of dynamic economic systems with an emphasis on applications of the dynamic simulation approach to problems in resource economics and management. STELLA, a computer simulation software, is used in the course. Prerequisite: ACE 562 or ACE 563, or equivalent.

ACE 566  **Mathematics for Applied Econ**  credit: 3 hours.
Applications of concepts of linear algebra, calculus, and multivariate optimization to equilibrium analysis, comparative statistics, and other topics in agricultural and consumer economics.

ACE 567  **Adv Programming for App Econ**  credit: 4 hours.
Advanced mathematical programming methods with particular emphasis on applications in agricultural and consumer economics. Includes linear programming and extensions, nonlinear programming, sector modeling, risk modeling, and methodological issues in mathematical programming modeling of agricultural systems. Prerequisite: ACE 563 or equivalent.

ACE 570  **Family and Consumption Econ**  credit: 2 OR 4 hours.
Discussion of current topics and review of the literature in family and consumption economics. Prerequisite: ECON 500 or equivalent.

ACE 572  **Economics of the Family**  credit: 4 hours.
Discussion and analysis of advanced literature on the economics of the family, developed within the models of human capital and allocation of time, emphasizing the theory and empirical applications. Prerequisite: ECON 500 or ECON 502; ECON 506 or SOC 485, or equivalent.

ACE 582  **Textile Finishing**  credit: 4 hours.
Same as NRES 582. See NRES 582.

ACE 584  **Topics in Consumer Marketing**  credit: 4 hours.
Analysis of consumer marketing with emphasis on research needs and future research directions. Prerequisite: A course in marketing or consent of instructor.

ACE 585  **High Performance Fibers**  credit: 4 hours.
Same as NRES 585. See NRES 585.

ACE 591  **Independent Study**  credit: 0 TO 8 hours.
Individual research work under the supervision of an appropriate member of the faculty. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours if topics vary.

ACE 592  **Special Topics**  credit: 0 TO 8 hours.
Group instruction on a special topic under the direction of one or more members of the faculty. Approved for both letter and S/U grading. May be repeated in a semester to a maximum of 8 hours. May be repeated to a maximum of 24 total hours, if topics vary.

ACE 594  **Seminars and Workshops**  credit: 0 TO 8 hours.
Participation in a seminar or workshop with other graduate students and faculty members. May be repeated. Approved for both letter and S/U grading.

ACE 599  **Thesis Research**  credit: 0 TO 16 hours.
Individual research under supervision of members of the graduate teaching faculty in their respective fields. Approved for S/U grading only. May be repeated.
ACES 101  **Contemporary Issues in ACES**  credit: 2 hours.
Study of contemporary issues in the human, food and natural resource systems, and an overview of the role of the College of Agricultural, Consumer and Environmental Sciences and the University of Illinois in these systems. Required of and limited to freshmen enrolled in the College of ACES.

ACES 179  **History of Ag in IL Since 1860**  credit: 3 hours.
An introduction to the history of agriculture in the rural Midwest with an emphasis on Illinois based on an analysis of the attitudes of indigenous peoples, immigrants, farmers and agribusiness interests toward land, labor, crop selection and production, and technology. The course compares the regional characteristics of the rural Midwest to other U.S. regions, and explores factors that created the American “breadbasket,” a region recognized for the commodities, equipment and ideas that it exports to the world.

ACES 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Experimental course on a special topic in the College of Agricultural, Consumer and Environmental Sciences. Topic may not be repeated except in accordance with the Code. Approved both letter and S/U grading. May be repeated in the same or subsequent term. No more than 12 hours may be counted toward graduation.

ACES 200  **ACES Transfer Orientation**  credit: 0 hours.
Introduction to College of ACES and campus resources for students new to the College of ACES. Required of all off campus transfer students and optional for Inter College Transfer students. First eight weeks course. Approved for S/U grading only.

ACES 293  **International Internship**  credit: 0 TO 5 hours.
Supervised learning experience designed for ACES students registering for an academic term abroad and/or for non-degree exchange students enrolling for an academic term at Illinois. The nature of the experience and the setting in which it takes place must be approved in advance by ACES faculty and by representative(s) of institutions/organizations/agencies that cooperate with the College of ACES in student exchange/study abroad programs. (Summer Session) 0 to 3 undergraduate hours. Approved for both letter and S/U grading. May be repeated to a maximum of 10 hours. Prerequisite: Written consent of ACES Study Abroad Office.

ACES 295  **Undergrad Research or Thesis**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated to a maximum of 12 hours. Students may register in more than one section per term. Prerequisite: GPA of 2.5 or above at the time the activity is arranged, and consent of instructor.

ACES 298  **International Experience**  credit: 1 TO 9 hours.
International experience in agricultural, consumer and environmental sciences related areas involving foreign travel and study without enrollment in another institution. Experience must be planned and approved in advance through consultation with a College of Agricultural, Consumer and Environmental Sciences faculty member. Approved for both letter and S/U grading. May be repeated to a maximum of 9 hours. Not open to students on probation. Prerequisite: Written consent of ACES Study Abroad Office.

ACES 299  **ACES Study Abroad**  credit: 0 TO 18 hours.
Provides campus credit in the College of Agricultural, Consumer and Environmental Sciences for study at accredited foreign institutions. Final determination of credit granted is made upon the student's successful completion of work. (Summer session) 0 to 8 undergraduate hours. Approved for both letter and S/U grading. May be repeated to a maximum of 36 hours within one calendar year. Prerequisite: Consent of major department, college, and Study Abroad Office.

ACES 409  **Bioenergy Systems**  credit: 3 hours.
Introductory survey course in bioenergy systems. Focus on plants, soils and bioenergy feedstocks; bioenergy production, processing and use; agricultural, environmental, economic and legal aspects of the bioenergy life cycle; tools and methods.

ACES 501  **Advanced Bioenergy Topics**  credit: 2 hours.
Seminar in Advanced Bioenergy Topics presented by experts in the field.
Advertising

Head of Department: Janet Slater
Department Office: 103 Gregory Hall, 810 South Wright, Urbana
Phone: 333-1602
www.media.illinois.edu/advertising/

ADV 199 Undergraduate Seminar credit: 1 TO 5 hours.
May be repeated to a maximum of 12 hours in separate semesters, if topics vary.

ADV 300 Introduction to Advertising credit: 3 hours.
Introduction to the practice and profession of advertising. Course material covers various functional areas of advertising and integrated brand promotion, including account planning, creative, media, research, consumer behavior, sales promotion and interactive advertising. Topics also include how advertising relates to society in cultural, social, ethical and regulatory contexts. Open to all undergraduate majors.

ADV 400 Special Problems credit: 0 TO 3 hours.
Special projects, research, and independent reading in advertising for students capable of individual work under the guidance of a faculty adviser. 0 to 3 undergraduate hours. No graduate credit. May be repeated in the same or in multiple semesters, if topics vary. Prerequisite: Written research proposal and consent of department.

ADV 410 Consumer Comm and the Public credit: 3 hours.
Addresses the interface between marketing activity and various public institutions and actions: government agencies, consumer groups, boycotts, litigation. 3 undergraduate hours. No graduate credit.

ADV 411 Classic Campaigns credit: 3 hours.
Examines the advertising campaigns that have been seen as the best examples of this genre during the past century. Includes the writings of famous advertising authors on the rhetorical principles of advertising. 3 undergraduate hours. No graduate credit.

ADV 412 Advertising History credit: 3 hours.
Teaches the important events, forces, people, and technologies that helped advertising to become an important institution in America. 3 undergraduate hours. No graduate credit. Prerequisite: ADV 300.

ADV 450 Creative Strategy and Tactics credit: 3 hours.
Explores theories of creativity; situates creativity and creative practices within the social structure of an advertising agency; examines the role of creative strategy in the development of advertising; exposes students to the practice of creating advertisements. 3 undergraduate hours. No graduate credit. Prerequisite: ADV 300.

ADV 452 Creative Concepts I credit: 3 OR 4 hours.
Planning and execution of advertising across media, with emphasis on the creation of campaigns 3 undergraduate hours. 4 graduate hours. Prerequisite: ADV 450 and consent of instructor (required).

ADV 481 Advertising Research Methods credit: 3 hours.
Overview of basic concepts of research methodology with particular emphasis on advertising research. Computer analysis and interpretation of actual data sets; measurement with both structured and unstructured techniques; principles of survey and experimental design. Course information: 3 undergraduate hours. No graduate credit. Prerequisite: ADV 300 and a specified course in statistical methods.

ADV 483 Audience Analysis credit: 3 hours.
Analyzes the markets served by various advertising media and factors to consider in the selection and evaluation of media. 3 undergraduate hours. No graduate credit. Prerequisite: ADV 481.

ADV 491 Advertising Management Plan credit: 3 hours.
Application of analytical planning concepts to advertising planning and decision making; covers all of the decision making areas of advertising. Prerequisite: ADV 450, ADV 483. 3 undergraduate hours. No graduate credit.

ADV 493 Social and Cult Context of Adv credit: 3 hours.
Studies advertising as a cultural force and social institution and its role in communications, society, and economics. 3 undergraduate hours. No graduate credit. Prerequisite: ADV 300.
ADV 494  **Persuasion Consumer Response**  credit: 3 hours.
Addresses what makes a mass-mediated message persuasive by reviewing theories of mass communication and persuasion, consumer information-processing, and advertising effectiveness measures. 3 undergraduate hours. No graduate credit. Prerequisite: ADV 481.

ADV 495  **Internship Seminar**  credit: 0 TO 1 hours.
Seminar based on internship experience. Offered for College of Communications students who complete an approved professional, industry related internship. Approved for S/U grading only. May be repeated in the same term to a maximum of 2 undergraduate hours or 2 graduate hours. May be repeated in subsequent terms to a maximum of 3 undergraduate hours or 3 graduate hours. Prerequisite: Consent of instructor.

ADV 550  **Foundations of Advertising**  credit: 4 hours.
Evaluation of key periods, events, and individuals having significant impact on the evolution of American advertising philosophy, structure, and performance. Prerequisite: Consent of department.

ADV 582  **Res Meth in Adv and Comm**  credit: 4 hours.
Treatment of basic research concepts and procedures in the social sciences with emphasis on advertising and communications; examines both non-quantitative and quantitative methods. Prerequisite: ADV 481, a basic course in statistical methods, and consent of department.

ADV 583  **Advertising in Communication**  credit: 4 hours.
Advertising messages from the perspective of attitude and persuasive communication theories. Application of theory to advertising communication issues. Prerequisite: ADV 481 or equivalent undergraduate research course and consent of department.

ADV 584  **Advertising Consumer Behavior**  credit: 4 hours.
Examines consumer behavior as a means of shaping the communications message; use of the behavioral sciences in communication strategy. Prerequisite: Consent of department.

ADV 585  **Adv Plan and Decision Making**  credit: 4 hours.
Examines the theoretical foundations of decision theory as they relate to planning and decision making in advertising; reviews concepts of strategic planning and client side operations; case studies utilized extensively. Prerequisite: Consent of department.

ADV 587  **Graduate Seminar**  credit: 2 hours.
Provides advertising students and faculty the opportunity to interact on current topics. Must be repeated by master's program graduate students for a total of 4 hours. Prerequisite: Consent of department.

ADV 590  **Special Topics in Advertising**  credit: 2 OR 4 hours.
May be repeated in the same or in multiple semesters if topics vary. Prerequisite: Consent of department.

ADV 599  **Thesis Research**  credit: 4 OR 8 hours.
Approved for S/U grading only. Prerequisite: Graduate standing in advertising.
Aerospace Engineering

Aerospace Engineering
Head of Department: J. Craig Dutton
Department Office: 306 Talbot Laboratory, 104 South Wright Street, Urbana
Phone: 333-2651
www.ae.uiuc.edu/

AE 100  Intro to Aerospace Engineering  credit: 1 hours.
Introduction to the Aerospace Engineering curriculum and career. Typical section topics include aircraft and rocket design and flight. Overviews of the topics are presented along with theory to be experimentally verified.

AE 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

AE 201  Aerospace Flight Mechanics I  credit: 2 hours.
Fundamental principles of aerospace systems are introduced through a systems design approach. Aeronautical engineering topics of aerodynamics, propulsion, structures and flight mechanics, and astronautical engineering topics of orbital mechanics, rockets and spacecraft systems are presented. The principles are demonstrated through design projects. Prerequisite: Credit or concurrent registration in AE 252.

AE 252  Aerospace Dynamics I  credit: 2 hours.
Kinematics and dynamics of particle motion; methods of work-energy and impulse-momentum; kinematics of plane motion of rigid bodies; moving reference frames; moments of inertia. Credit is not given for both AE 252 and TAM 212. Prerequisite: TAM 210.

AE 302  Aerospace Flight Mechanics II  credit: 3 hours.
Introduction to the dynamics of aircraft and spacecraft and to orbital mechanics; aircraft performance in various flight attitudes; aircraft stability and control; spacecraft attitude dynamics and control; the two-body problem of orbital mechanics; orbit transfer. Prerequisite: AE 201 and AE 352.

AE 311  Incompressible Flow  credit: 3 hours.
Equations of motion for incompressible flow, both inviscid and viscous; potential flow theory, inviscid airfoil theory: two- and three-dimensional, Navier-Stokes equations, laminar boundary layer and transition to turbulence. Prerequisite: CS 101; credit or concurrent registration in MATH 241 or MATH 380.

AE 312  Compressible Flow  credit: 3 hours.
Compressible flow aerodynamics; conservation of mass, momentum, and energy; one-dimensional and quasi-one-dimensional flow; oblique shock waves and Prandtl-Meyer expansion waves; unsteady wave motion. Application to nozzles, diffusers, supersonic airfoils, and shock tubes. Prerequisite: AE 311, CS 101, MATH 285, ME 300; credit or concurrent registration in AE 201.

AE 321  Aerospace Structures I  credit: 3 hours.
Fundamental concepts in the linear theory of elasticity, including stress, strain, equilibrium, compatibility, material constitution and properties. Introduction to failure mechanisms and criteria. Application to plane stress/strain problems, beams in extension and bending, and shafts in torsion. Prerequisite: MATH 285 and TAM 210.

AE 322  Aerospace Structures II  credit: 3 hours.

AE 352  Aerospace Dynamics II  credit: 3 hours.
Particle kinematics and dynamics; Lagrange's equations; vibration of multiple degree-of-freedom systems; rotational kinematics and dynamics of rigid bodies. Credit is not given for both AE 352 and TAM 412. Prerequisite: AE 252, MATH 225, and MATH 285.

AE 353  Aerospace Control Systems  credit: 3 hours.
Modeling of linear dynamic systems; Laplace transform techniques; linear feedback control systems; stability criteria; design techniques. Credit is not given for both AE 353 and either GE 320 or ME 340. Prerequisite: AE 252, MATH 225, and MATH 285.

AE 360  Structures & Control Lab  credit: 2 hours.
Examines theory and application of experimental techniques in aerospace engineering with emphasis on structural mechanics, vibrations, dynamics, and control systems. Prerequisite: Credit or concurrent registration in AE 322, AE 352, and AE 353.

**AE 395  Honors Project**  credit: 1 TO 4 hours.
Special aerospace engineering project or reading course for James Scholars in engineering. Prerequisite: Consent of instructor.

**AE 396  Honors Seminar**  credit: 1 TO 4 hours.
Special lecture sequences and/or discussion groups arranged each term to bring James Scholars in engineering into direct contact with the various aspects of engineering practices and philosophy. Prerequisite: Consent of instructor.

**AE 397  Independent Study**  credit: 1 TO 3 hours.
Independent theoretical and experimental projects in aerospace engineering. May be repeated. Prerequisite: Consent of instructor.

**AE 402  Orbital Mechanics**  credit: 3 OR 4 hours.
Analysis of orbits in an inverse-square gravitational field; elementary rocket dynamics, impulsive orbit transfer and rendezvous, and Lambert's Theorem with applications; patched-conic trajectories, planetary gravity-assist maneuvers, and linearized orbit theory with application to simplified analytical models; perturbations. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 302.

**AE 403  Spacecraft Attitude Control**  credit: 3 OR 4 hours.
Theory and applications of spacecraft attitude dynamics and control; Euler angles, direction cosines, quaternions, and Gibbs-Rodrigues parameters; attitude sensors and control actuators; spin, three-axis active, reaction wheel, control moment gyro, and gravity gradient control systems; environmental effects. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 352 and AE 353.

**AE 410  Computational Aerodynamics**  credit: 3 OR 4 hours.
Introduction to computational technologies as solution tools for various aerodynamic problems; modeling and solution of one-and two-dimensional, incompressible and compressible, steady and unsteady inviscid external flow fields. Computational laboratory for practical experience. Same as CSE 461. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 311.

**AE 412  Viscous Flow & Heat Transfer**  credit: 4 hours.
Momentum and thermal transport in wall boundary-layer and free shear flows, solutions to the Navier-Stokes equations for heat conducting laminar and turbulent shear flows; similarity concepts; thermal boundary layers in ducts and high-speed aerodynamic boundary layers. Same as ME 411. Prerequisite: AE 311 or ME 310.

**AE 416  Applied Aerodynamics**  credit: 3 OR 4 hours.
Two-dimensional and finite wing theory with emphasis on the mechanisms of lift and drag generation; Reynolds number and Mach number effects; drag analysis; high-lift wing systems; propeller and rotor aerodynamics; control surface design; application of V/STOL aerodynamics. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 311.

**AE 419  Aircraft Flight Mechanics**  credit: 3 OR 4 hours.
Steady and quasi-steady aircraft flight performance; take-off and landing, climbing and diving, cruise, level turn, and introduction to energy methods; longitudinal, directional, and lateral static stability and control; introduction to longitudinal and lateral motion and dynamic stability. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 302 and AE 353.

**AE 420  Finite Element Analysis**  credit: 3 OR 4 hours.
Same as CSE 451 and ME 471. See ME 471.

**AE 427  Mechanics of Polymers**  credit: 3 hours.
Same as MSE 454 and TAM 427. See TAM 427.

**AE 428  Mechanics of Composites**  credit: 3 hours.
Same as MSE 456 and TAM 428. See TAM 428.

**AE 433  Aerospace Propulsion**  credit: 3 hours.
Fundamentals of rocket and airbreathing jet propulsion devices; prediction of thrust, combustion reactions, specific fuel consumption, and operating performance; ramjets; turbojets; turbofans; turboprops; aerothermodynamics of inlets, combustors, and nozzles; compressors, turbines; component matching. 3 undergraduate hours. Prerequisite: AE 312 and CS 101.

**AE 434  Rocket Propulsion**  credit: 3 OR 4 hours.
Basic principles of chemical rocket propulsion and performance, rocket component design, liquid rockets, solid rocket motors, combustion processes, combustion instability. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 312 and AE 433.

**AE 435  Electric Propulsion**  credit: 3 OR 4 hours.
Elements of electric propulsion as applied to near-earth and deep-space missions; impact on spacecraft design; physics of ionized gases; plasmadynamics; electrothermal, electromagnetic, and electrostatic acceleration of gases to high velocity; high-impulse thruster design and performance; the resistojet, arcjet, ion engine, Hall thruster, MPD arc thruster, and plasma gun. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 433.

**AE 440  Aerospace Systems Design I**  credit: 3 hours.
Introduction to the design of aerospace flight systems. Principles of systems engineering as they apply to the design process; general design methodology; application of these concepts to the initial sizing of both aircraft and spacecraft systems. Involves intensive technical writing. Involves intensive technical writing. AE 440 and AE 441 taken in sequence fulfill the Advanced Composition Requirement. 3 undergraduate hours. No graduate credit. Prerequisite: AE 302, AE 311, AE 322, AE 352, and AE 433.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

**AE 441  Aerospace Systems Design II**  credit: 3 hours.
Continuation of AE 440. Conceptual design project of either an aircraft or spacecraft flight system to satisfy a given set of requirements. Project team organization. Emphasis on sizing, trade studies and design optimization, subsystem integration, and technical communication skills. To fulfill the Advanced Composition Requirement, credit must be earned for both AE 440 and AE 441. 3 undergraduate hours. No graduate credit. Prerequisite: AE 440.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

**AE 451  Aeroelasticity**  credit: 3 OR 4 hours.
Advanced fundamental treatment of aerodynamic and dynamic structural phenomena associated with flexible airplanes and missiles; divergence of linear and nonlinear elastic lifting surfaces; effect of elastic and inelastic deformations on lift distributions and stability; elastic flutter of straight and swept wings; equations of disturbed motion of elastic and inelastic aircraft; dynamic response to forces, gusts, and continuous atmospheric turbulence; creep divergence of lifting surfaces; flutter in the presence of creep; effect of temperature on inelastic divergence and flutter. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 352 or TAM 412; AE 322 or TAM 251.

**AE 454  Systems Dynamics & Control**  credit: 3 OR 4 hours.
Examines the common core of dynamics and control theory. Fundamental concepts of Lagrangian dynamics, state space representations, Hamiltonian and modern dynamics, stability theory, and control of dynamical systems. 3 undergraduate hours. 4 graduate hours. Prerequisite: AE 353.

**AE 460  Aerodynamics & Propulsion Lab**  credit: 2 hours.
Examines theory and application of experimental techniques in aerospace engineering with emphasis on fluid dynamic, aerodynamic, thermal, combustion, and propulsion phenomena. 2 undergraduate hours. No graduate credit. Prerequisite: AE 311; credit or concurrent registration in AE 433.

**AE 468  Optical Remote Sensing**  credit: 3 hours.
Same as ECE 468 and ATMS 468. See ECE 468.

**AE 470  Aerospace Numerical Methods**  credit: 3 hours.
Introduction to numerical methods used in aerospace engineering. Finite difference method; Variational principles and Rayleigh-Ritz method; finite element method; applications from simple structural mechanics and aerodynamics problems encountered in aerospace engineering. 3 undergraduate hours. No graduate credit. Prerequisite: AE 311, AE 321, AE 322, and CS 101.

**AE 481  Wind Power Technology**  credit: 3 OR 4 hours.
Aerodynamic, electromechanical, and structural design of wind power systems; classical windmills; modern wind power generators; wind characteristics and distribution; instrumentation and measurement; energy storage considerations; socioeconomic of wind power systems; performance of large and small scale wind turbines; current design approaches. 3 undergraduate hours. 3 or 4 graduate hours.

**AE 497  Independent Study**  credit: 1 TO 4 hours.
Independent theoretical and experimental projects in aerospace engineering. May be repeated. Prerequisite: Consent of instructor.

**AE 498  Special Topics**  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in aerospace engineering intended to augment the existing curriculum. See Class Schedule or department course information for topics and prerequisite. May be repeated in the same or separate terms if topics vary to a maximum of 9 undergraduate hours or 12 graduate hours.
AE 502  **Advanced Orbital Mechanics**  credit: 4 hours.
Circular restricted three body problem; surfaces of zero velocity, libration points, and halo orbits; perturbed two body motion; Gauss and
Lagrange planetary equations, Hamilton's principle, canonical equations and Delaunay variables; application to artificial Earth satellites;
orbit determination. Prerequisite: AE 402.

AE 504  **Optimal Aerospace Systems**  credit: 4 hours.
Formulation of parameter and functional optimization problems for dynamic systems; applications of optimization principles to the
control and performance of aerospace vehicles, including optimal flight paths, trajectories, and feedback control. Prerequisite: AE 352.

AE 508  **Optimal Space Trajectories**  credit: 4 hours.
Optimal rocket trajectories in inverse-square and linearized gravitational fields; orbital transfer, intercept, and rendezvous; high-thrust
(impulsive) and low-thrust (continuous) trajectories; primer vector theory and applications; cooperative rendezvous. Prerequisite: Credit
or concurrent registration in AE 504.

AE 510  **Advanced Gas Dynamics**  credit: 4 hours.
Same as ME 510. See ME 510.

AE 511  **Transonic Aerodynamics**  credit: 4 hours.
Fundamentals of transonic flows; transonic characteristics and flow modeling, shock wave development, properties of shock wave,
transonic similarity, shock-boundary layer interactions, three-dimensional effects, transonic solution techniques, transonic design, and
transonic testing. Prerequisite: ME 410.

AE 513  **Dispersed Multiphase Flow**  credit: 4 hours.
Basic overview of the physics, governing equations and numerical methods for dispersed multiphase flow (also sometimes called
particle suspensions), with particular emphasis on thermomentum transfer to and from the particles. Characterization of particle size,
shape, trajectories and coupling regimes; mixed-fluid, separated-fluid, and resolved-surface numerical approaches. Prerequisite: AE
412.

AE 514  **Boundary Layer Theory**  credit: 4 hours.
Boundary layer concept at high Reynolds numbers; self-similar solutions of incompressible and compressible boundary layers; stability
of parallel and nearly-parallel wall-bounded viscous flows; transition to turbulence; turbulent boundary layers; high-speed boundary
layers; strong Reynolds analogy; Morkovin's hypothesis. Prerequisite: AE 412.

AE 515  **Wing Theory**  credit: 4 hours.
Theoretical analysis of the aerodynamic characteristics of two- and three-dimensional wings and multiple-body systems in subsonic and
supersonic flows. Prerequisite: AE 413 or AE 416.

AE 522  **Dynamic Response of Materials**  credit: 4 hours.
Importance and historical development of stress waves in solids; one-dimensional stress waves; three-dimensional longitudinal and
shear waves, reflection and refraction of plane waves; Rayleigh and Love waves; wave guides; spherical waves, inelastic wave
propagation and shock waves; dynamic fracture and shear bandings of solids; wave propagation in anisotropic media; experimental
techniques; acoustic emission, ultrasounds, split Hopkinson (Kolsky) bar, plate impact experiments, optical techniques in dynamic
fracture, high-speed photography. Prerequisite: TAM 451 or TAM 551.

AE 525  **Advanced Composite Materials**  credit: 4 hours.
An extension of TAM 428. Advanced analysis of composite materials. Anisotropic elasticity; micromechanical theories; behavior of
composite plates and beams under bending, buckling, and vibration; advanced elasticity solution techniques; hygrothermal behavior
of polymer composites; strength prediction theories and failure mechanisms in composites; processing of metal, ceramic, and polymer
composites; analysis of residual stresses. Same as TAM 525. Prerequisite: TAM 428.

AE 526  **Composites Manufacturing**  credit: 4 hours.
Review of the manufacturing methods for polymer-matrix composite materials; analysis of fiber processing techniques, interfacial
treatments, and composites fabrication methods; analytical treatment of process modeling including heat transfer, cure kinetics, resin
flow, and residual stresses. A term project is required. Same as TAM 526. Prerequisite: TAM 428.

AE 528  **Nonlinear Continuous Media**  credit: 4 hours.
Fundamental concepts of large deformations in nonlinear elasticity and inelasticity with applications: generalized tensors, finite
deformations, stress-strain relations in terms of strain energy functions, inverse problems, solutions of tension, shear and bending
problems, finite plane strain, theory of successive approximations, fiber-reinforced beams, plates and cylinders, thermodynamics of
deformable media, stability considerations, and constituent relations for inelasticity. Prerequisite: AE 321 or TAM 451.

AE 529  **Viscoelasticity Theory**  credit: 4 hours.
Fundamental concepts of viscoelasticity with applications: elastic-viscoelastic analogies, creep and relaxation functions, Poisson's ratio, thermomechanical reciprocity relations, variational principles, model fitting, shear center motion, thick-walled cylinders under pressure and inertia loads with material annihilation, sandwich plates, propagation of viscoelastic waves, vibration of bars, plates and shells, nonlinear elastic-viscoelastic analogy, properties of nonlinear viscoelastic stress-strain laws, creep rupture, and torsion of nonlinear bars and shells. Same as TAM 529. Prerequisite: AE 321 or TAM 451.

AE 538 Combustion Fundamentals credit: 4 hours.
Same as ME 501. See ME 501.

AE 554 Dynamical Systems Theory credit: 4 hours.
Fundamental concepts of nonlinear oscillations, structural stability, local and global bifurcations in the context of ordinary and partial differential equations; introduction to dynamic systems, structural stability and Lyapunov-Schmidt Reduction, bifurcations of equilibrium points, limit cycles and tori, the center manifold and Poincare normal forms, co-dimension two and higher order bifurcations, bifurcation theory of maps, the Birkhoff-Smale homoclinic theorem and horseshoes, Melnikov's method and Silnikov phenomena, period doubling, and other routes to chaos. Applications to many engineering problems, such as aircraft at high angles of attack, pipes conveying fluid, and panel flutter will be demonstrated. Prerequisite: AE 352 or TAM 412.

AE 555 Multivariable Control Design credit: 4 hours.
Frequency response design specifications; algebraic and analytic constraints in scalar systems; uncertainty representation; Nyquist stability theory, small gain condition, and multi-input multi-output systems; singular value decomposition; robustness and u-function; linear quadratic regulator based design; recovery of LQ Design properties; Kalman filter; Riccati equations; H-infinity based design; reduction; balanced truncation; Hankel singular values; coprime factor reduction; loop shaping. Same as GE 521. Prerequisite: ECE 515.

AE 556 Robust Control credit: 4 hours.
Signal and system spaces; stability, robustness, and the small gain theorem; factorization and parameterization of all stabilizing controllers; performance and achievable closed loop maps; model matching; design of optimal single-input single-output systems in H-infinity, H2, L1 senses; extensions to multi-output systems; structured and unstructured uncertainty; robust performance analysis and synthesis; multi-objective control. Prerequisite: ECE 515 and MATH 446.

AE 560 Fracture Mechanics Laboratory credit: 4 hours.
Experimental and physical aspects of fracture mechanics including elastic crack tip stress field, thermoelasticity, thermoplasticity, optical techniques, J-integral, toughening mechanisms, dynamic fracture, and fatigue. Several laboratory experiments are performed to illustrate issues covered in class. Prerequisite: TAM 451 or TAM 551.

AE 590 Seminar credit: 0 hours.
Presentation by graduate students, staff, and guest lecturers of current topics in aerospace engineering. Approved for S/U grading only.

AE 597 Independent Study credit: 1 TO 4 hours.
Independent theoretical and experimental projects in aerospace engineering. May be repeated. Prerequisite: Consent of instructor.

AE 598 Special Topics credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in aerospace engineering intended to augment existing formal courses. Topics and prerequisites vary for each section. See Class Schedule or departmental course information for both. May be repeated in the same or separate terms if topics vary to a maximum of 12 hours.

AE 599 Thesis Research credit: 0 TO 16 hours.
Research in the various areas of aerospace engineering. Approved for S/U grading only. May be repeated.
AFAS 102  **Leadership Laboratory**  credit: 0 hours.
Aerospace Studies Leadership Laboratory (LLAB) is a co-requisite with all Air Force Aerospace Studies courses. LLAB is the application of personal leadership skills, demonstration of command, effective communication, individual leadership instruction, physical fitness training, and knowledge of U. S. Air Force customs and courtesies. Approved for S/U grading only. May be repeated. Prerequisite: Consent of instructor.

AFAS 111  **Found of the US Air Force I**  credit: 1 hours.
Survey course focusing on the organizational structure and missions of Air Force organizations, military customs and courtesies, officership and core values, and an introduction to written and oral communication skills. Requires concurrent enrollment with AFAS 102.

AFAS 112  **Found of the US Air Force II**  credit: 1 hours.
Continuation of AFAS 111. Survey course focusing on the organizational structure and missions of Air Force organizations, military customs and courtesies, officership and core values, and an introduction to written and oral communication skills. Requires concurrent enrollment with AFAS 102. Prerequisite: AFAS 111 or consent of instructor.

AFAS 221  **Dev of Air and Space Power I**  credit: 1 hours.
Historical survey of trends, events, and policies that led to the emergence of air power through the Korean Conflict. Also provides an introduction to basic leadership and management skills, ethical decision making, and basic communication skills. Requires concurrent enrollment with AFAS 102. Prerequisite: AFAS 222 or consent of instructor.

AFAS 222  **Dev of Air and Space Power II**  credit: 1 hours.
Continuation of AFAS 221. Historical survey of trends, events, and policies that led to the emergence of air power through Operation ALLIED FORCE. Also provides an introduction to basic leadership and management skills, ethical decision making, and basic communication skills. Requires concurrent enrollment with AFAS 102. Prerequisite: AFAS 332 or consent of instructor.

AFAS 331  **AF Leadership and Mgt I**  credit: 3 hours.
Study of leadership and quality management fundamentals, professional knowledge, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts. Requires concurrent enrollment with AFAS 102. Prerequisite: AFAS 222 or consent of instructor.

AFAS 332  **AF Leadership and Mgt II**  credit: 3 hours.
Continuation of AFAS 331. Study of leadership and quality management fundamentals, professional knowledge, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts. Requires concurrent enrollment with AFAS 102. Prerequisite: AFAS 331 or consent of instructor.

AFAS 341  **National Security Studies I**  credit: 3 hours.
Study of the Armed Forces as an integral element in contemporary society with specific emphasis on the military profession, civil-military interaction, and the formulation, organization, and implementation of U. S. national security policy. In addition, students study leadership and management, ethical decision making, and communication skills. Requires concurrent enrollment with AFAS 102. Prerequisite: AFAS 332 or consent of instructor.

AFAS 342  **National Security Studies II**  credit: 3 hours.
Continuation of AFAS 341. Study of the Armed Forces as an integral element in contemporary society with specific emphasis on the military profession, civil-military interaction, and the formulation, organization, and implementation of U. S. national security policy. In addition, students study leadership and management, ethical decision making, and communication skills. Requires concurrent enrollment with AFAS 102. Prerequisite: AFAS 341 or consent of instructor.
AFRO 100  **Intro to African American St**  credit: 3 hours.
Interdisciplinary introduction to the basic concepts and literature in the disciplines covered by African American studies; surveys the major approaches to the study of African Americans across several academic disciplines including economics, education, psychology, literature, political science, sociology and others.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

AFRO 101  **Black America, 1619-Present**  credit: 3 hours.
Sociohistorical survey of African American experiences from the West African background to North America, from the 17th century to the present. Same as HIST 174.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AFRO 102  **Researching the African Am Exp**  credit: 3 hours.
Introduction to research and documentation of the African American experience. Approved for both letter and S/U grading.

AFRO 103  **Black Women in the Diaspora**  credit: 3 hours.
Explores the historical, social, economic, cultural and political realities of black women in the African diaspora with an emphasis on the U.S., Canada, Britain, Africa and the English speaking Caribbean. How macro structures such as slavery, imperialism, colonialism, capitalism, and globalization shaped and continue to circumscribe the lives of black women across various geographic regions. Discussion of the multiple strategies/efforts that black women employ both in the past and present to ensure the survival of the self and the community. Same as AFST 103 and GWS 103.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

AFRO 105  **Black Literature in America**  credit: 3 hours.
Survey of the literary work of Black Americans from 1746 to the present. Exploration of the social, cultural, and political contexts that have shaped the Black American literary tradition by analyzing not only poetry, drama, autobiographical narratives, short stories, and novels, but also folktales, spirituals, and contemporary music. Same as ENGL 150.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

AFRO 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

AFRO 201  **US Racial & Ethnic Politics**  credit: 3 hours.
Same as LLS 201 and PS 201. See PS 201.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

AFRO 211  **Intro to African-American Film**  credit: 3 hours.
Same as CINE 211. See CINE 211.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

AFRO 220  **Intro to Research Methods AfAm**  credit: 3 hours.
Introduction to various methodologies to be employed in the interdisciplinary field of African American/Africana studies. Access to a personal computer and SPSS software is required. Prerequisite: AFRO 100.

**AFRO 224 Humanist Persp of Afro-Am Exp**  credit: 3 hours.

Presents the Afro-centric world view as it was manifested in traditional African society and in the Afro-American slave community. Shows that this world view merged with European notions of art and humanity, as revealed in modern Afro-American literature, art, and music. Same as CWL 226. Approved for both letter and S/U grading. Prerequisite: AFRO 100 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

**AFRO 225 Race and Ethnicity**  credit: 3 hours.
Same as SOC 225. See SOC 225.

**AFRO 226 Black Women Contemp US Society**  credit: 3 hours.
Sociological perspective of the experience of African American women in the contemporary United States. Specifically, an examination of relationships between the economy, state policy, culture, work and motherhood for this demographic group. Same as GWS 226 and SOC 223.

**AFRO 231 Lang Diff Dis: American Persp**  credit: 3 hours.
Discusses the interaction of culture, ethnicity/race and language among American minorities. Emphasizes language difference theory as related to social and regional dialects and bilingualism/multilingualism. Distinguishes language differences from language disorders through examination of assessment and treatment approaches for different aged populations. Same as SHS 231.

This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

**AFRO 243 Pan Africanism**  credit: 3 hours.
Same as AFST 243, PS 243, and SOC 267. See PS 243.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

**AFRO 259 Afro-American Literature I**  credit: 3 hours.
Same as CWL 259 and ENGL 259. See ENGL 259.

This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

**AFRO 260 Afro-American Literature II**  credit: 3 hours.
Same as CWL 260 and ENGL 260. See ENGL 260.

This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

**AFRO 261 Intro to the African Diaspora**  credit: 3 hours.
Introduction to the origin, development, and maturation of the African diaspora in the Americas and the Caribbean, beginning with the transatlantic slave trade and up to the end of the 20th century. Same as ANTH 261.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

**AFRO 272 Minority Images in Amer Film**  credit: 4 hours.
Same as ENGL 272. See ENGL 272.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)
UIUC: Advanced Composition

**AFRO 275 Afro-American History to 1877**  credit: 3 hours.
Same as HIST 275. See HIST 275.

This course satisfies the General Education Criteria for a:
AFRO 276  Afro-American Hist Since 1877  credit: 3 hours.
Same as HIST 276. See HIST 276.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AFRO 281  Constructing Race in America  credit: 3 hours.
Same as AAS 281, HIST 281, and LLS 281. See HIST 281.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AFRO 282  Displaced Peoples of Latin Am  credit: 3 hours.
Same as ANTH 282. See ANTH 282.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

AFRO 287  African-American Women  credit: 3 hours.
Same as GWS 287 and HIST 287. See HIST 287.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

AFRO 290  Af Am Urban Hist Since 1917  credit: 3 hours.
Examination of the changing interaction among black urban communities, the broader urban citizenry, municipal government, the local
and national urban-industrial economy, and federal policy over time, giving particular attention to discourses about the black "ghetto" as
both a physical space and set of social conditions. Same as HIST 284. Prerequisite: AFRO 101, HIST 276, HIST 172, SOC, 225, or PS
201.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AFRO 298  Spec Topics African-Am Studies  credit: 3 hours.
Seminar on selected topics with particular emphasis on current research trends. May be repeated to a maximum of 6 hours.
Prerequisite: AFRO 100 or AFRO 101, or consent of instructor.

AFRO 310  Race and Cultural Diversity  credit: 4 hours.
Same as AAS 310, EPS 310, and LLS 310. See EPS 310.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)
UIUC: Advanced Composition

AFRO 315  African American Politics  credit: 3 hours.
Same as PS 315. See PS 315.

AFRO 340  Dancing Black Popular Cult  credit: 3 hours.
Same as DANC 340. See DANC 340.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AFRO 342  Black Men and Masculinities  credit: 3 hours.
The sociological study of African American men in the contemporary U.S. Specifically, black manhood and masculinities and the
experiences of this demographic group as it relates to the economy, state, policy, and institutions such as family, criminal justice
system, and education. Same as SOC 325. Prerequisite: Introductory social science course.

AFRO 372  Class Politics & Blk Community  credit: 3 hours.
Exploration of the complex history of class relations among African Americans during the twentieth century, examining both the internal and external shapers of black class stratification. Considers the historical development of contemporary black "underclass", and the parallel expansion of the black middle class today. Same as HIST 384. Prerequisite: AFRO 101, HIST 276, or SOC 225 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

AFRO 373 AfAm Cultr Politic Mid20C credit: 3 hours.
Focusing on African American culture and history from World War II until the early 1960's, topics include citizenship, migration, urban life, the African Diaspora, Civil Rights Movement, and art forms. Approved for both letter and S/U grading. Prerequisite: AFRO 100 and AFRO 101, AFRO 261, ENGL 260 or HIST 276.

AFRO 378 Race and Revolutions credit: 3 hours.
Focus on the relationship between race and slavery during the revolutions in American and Haiti, respectively. We will seek to understand how the themes of slavery, revolution and race affected blacks, whites and indigenous Americans. We will learn about life during the Revolutionary era by reading the biographies, political pamphlets and personal letters of former slaves, Revolutionaries and everyday men and women as well as historical scholarship. Same as HIST 389. Prerequisite: One African American Studies or History course at either the 100- or 200-level or the consent of instructor.

AFRO 380 Black Women Hist & Cultures credit: 3 hours.
Same as GWS 380. See GWS 380.

AFRO 381 Black Women and Film credit: 3 hours.
An examination of the contribution of Black women film directors to cinema. The study of documentary, experimental, animated, fictional shorts, and feature films will reveal their unique approach to constructions of the intersection of race and gender. Starting from the 1920's up to the present, the course considers themes, aesthetics, historical contexts, and ideological discourses presented in the films. Same as CINE 381. Prerequisite: College level film course or consent of instructor.

AFRO 383 Hist of Blk Women's Activism credit: 3 hours.
Examination of the history of twentieth century black women's activism, specifically concerned with how African American female activists have been critical to building, sustaining and leading black freedom movements. Same as GWS 383 and HIST 383. Prerequisite: AFRO 100 or AFRO 101 or AFRO 103 or consent of instructor.

AFRO 398 Spec Topics Afro-Am Studies credit: 3 hours.
Advanced seminar on selected topics with particular emphasis on current research trends. May be repeated to a maximum of 6 hours. Prerequisite: Junior status and one of the following: AFRO 224, or HIST 275 or HIST 276, or ENGL 259 or ENGL 260.

AFRO 400 African Diasporic Lit Americas credit: 3 OR 4 hours.
Critical examination of the contributions of writers of African descent from the Caribbean (English, French, Spanish) and the United States. Major works of fiction, poetry, drama and essays from Cuba, Guadeloupe, Guyana, Haiti, St. Lucia, the United States and other countries are analyzed within a post-colonial theoretical framework. Same as CWL 400. 3 undergraduate hours. 4 graduate hours. Prerequisite: AFRO 224 or AFRO 259 or AFRO 260 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

AFRO 407 Slavery & Race in Latin Am credit: 2 TO 4 hours.
Same as HIST 407. See HIST 407.

AFRO 410 Hate Crimes credit: 3 hours.
Hate crimes represent the manifestation of intergroup bias and aggression. Examples of these crimes will be examined while analyzing longstanding theories in social psychology. Same as PSYC 410. Prerequisite: PSYC 201 or AFRO 344 or consent of instructor.

AFRO 411 African American Psychology credit: 3 OR 4 hours.
Introduction to the research, theories, and paradigms developed to understand the attitudes, behaviors, and psychological and educational realities of African Americans. Same as PSYC 416. 3 undergraduate hours. 4 graduate hours. Prerequisite: AFRO 100 or one psychology course.

AFRO 415 Africana Feminisms credit: 3 OR 4 hours.
Explores readings and research from the perspective of feminists throughout the African diaspora, with a focus on Black feminist thought emanating from the United States. Same as AFST 420 and GWS 415. 3 undergraduate hours. 4 graduate hours. Prerequisite: AFRO 103 and an additional 300 or 400-level African American Studies course or consent of the instructor.
AFRO 421  Racial and Ethnic Families  credit: 2 hours.
Same as EPS 421, HDFS 424, and SOC 421. See EPS 421.

AFRO 435  Commoditying Difference  credit: 3 OR 4 hours.
Same as AAS 435, GWS 435, LLS 435 and MS 432. See LLS 435.

AFRO 453  Plantation Soc in Americas  credit: 3 OR 4 hours.
Comparative and interdisciplinary approach to study of the development of New World societies with focus on plantation agriculture from the 15th to 19th centuries. Course considers Portuguese, Spanish, British, French, and Dutch colonization. Students will study the relative importance of culture versus economy and demography in determining social structure. Same as HIST 470. 3 undergraduate hours. 4 graduate hours. Prerequisite: A survey course in early United States history and/or western civilization; junior status, or consent of the instructor.

AFRO 460  Slavery in the United States  credit: 3 OR 4 hours.
Examination of slavery in the U.S. using primary sources (slave narratives, songs and tales, plantation records, laws and newspapers) from the 18th century through emancipation. Same as HIST 482. 3 undergraduate hours. 4 graduate hours. Prerequisite: AFRO 100 or AFRO 101 and one 300-level AFRO course.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

AFRO 465  Race, Sex, and Deviance  credit: 3 OR 4 hours.
Same as AAS 465, GWS 465, and LLS 465. See LLS 465.

AFRO 466  Race & Science  credit: 3 OR 4 hours.
Examination of the historical development of scientific theories of race, focusing on biology, anthropology, mind sciences and modern genetics. Same as HIST 483. 3 undergraduate hours. 4 graduate hours. Prerequisite: AFRO 100 or AFRO 101 and one 300-level AFRO course.

AFRO 474  Black Freed Move, 1955-Present  credit: 3 OR 4 hours.
Prepresents the struggle of African Americans for self-definition, self-development, and self-determination from the inception of the civil rights movement to the contemporary period. Same as HIST 478. 3 undergraduate hours. 4 graduate hours. Prerequisite: AFRO 101, HIST 276, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

AFRO 476  The South in American History  credit: 2 TO 4 hours.
Same as HIST 477. See HIST 477.

AFRO 490  Theory in African American St  credit: 3 OR 4 hours.
Introduction to various theories and methodologies rising out of the study of the Black world based on African American intellectual traditions. 3 undergraduate hours. 4 graduate hours. Prerequisite: AFRO 100 and one additional 400-level AFRO course, or consent of instructor.

AFRO 491  Methodology in African Amer St  credit: 3 OR 4 hours.
Introduction to various methodologies to be employed in the interdisciplinary field of African American/Africana studies. Access to personal computer SPSS software is required. 3 undergraduate hours. 4 graduate hours. Prerequisite: AFRO 100 and AFRO 220 and an additional 300 or 400-level African American Studies course or consent of instructor.

AFRO 495  Senior Thesis Seminar  credit: 3 hours.
3 undergraduate hours. Prerequisite: AFRO 100 and AFRO 220 or AFRO 490.

AFRO 498  Spec Topics African Am Studies  credit: 3 OR 4 hours.
Seminar on selected topics with particular emphasis on current research trends. 3 undergraduate hours. 4 graduate hours. May be repeated up to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Upper level AFRO course (300 or above) or consent of instructor.

AFRO 500  Core Probs African-Am Studies  credit: 4 hours.
Introduction for grad students to the central concepts, theories, methodologies, and paradigms in Black Studies. Students will also be introduced to the key critical scholars, seminal works and emerging trends in Black Studies. Prerequisite: Graduate standing.

AFRO 501  Problems African American Hist  credit: 4 hours.
Same as HIST 575. See HIST 575.

AFRO 531  Race and Cultural Critique  credit: 4 hours.
Same as AAS 561, ANTH 565, GWS 561, and LLS 561. See AAS 561.

AFRO 550  Blk Community & Class Politics  credit: 4 hours.
Exploration of the complex history of class relations within African American urban communities during the “long” twentieth century, and the relationship of these internal dynamics to external structures of racial control. Examination of the multiple processes through which both the urban black working class and a middle class formed, and were transformed, over time.

AFRO 552  Ethnography Urban Communities  credit: 4 hours.
Addresses substantive, theoretical, methodological, and policy issues within the field of urban community studies. Focusing primarily on African American urban communities, with comparisons to other racial-ethnic group communities (e.g. Euro-American, Latino, immigrant), ethnographic case studies are used to explore community processes (formation, ghettoization, gentrification, transnationalism), their relationship to historical, economic, social, and political factors, and how these processes are influenced by ethnicity, class, gender and developmental cycle. Attention will also be given to how empirical studies can be used to inform public policies affecting urban communities. Interdisciplinary readings draw primarily from anthropology, education, and sociology. Same as HCD 543 and SOC 578.

AFRO 560  African Diaspora Seminar  credit: 4 hours.
Study of the key political, social, economic and cultural developments of the African Diaspora in Asia, Europe and the Americas. Using an interdisciplinary framework, students will examine recent scholarship in history, women’s studies, political science, sociology and anthropology to understand the experiences and challenges faced by people of African descent. Same as AFST 560.

AFRO 562  Archaeology and Racialization  credit: 4 hours.
Same as ANTH 562. See ANTH 562.

AFRO 597  Problems in African-Am Studies  credit: 4 hours.
Focused reading and study of special problems in African American Studies. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing, AFRO 500 or equivalent, or consent of instructor.

AFRO 598  Res Sem in African-Am Studies  credit: 4 hours.
Graduate seminar on special topics based on current research trends. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing, AFRO 500 or equivalent, or consent of instructor.
African Studies

African Studies, Center for
Director: Merle Bowen
Center Office: Room 210, International Studies Building, 910 South Fifth Street, Champaign
Phone: 333-6335
www.afrst.uiuc.edu

AFST 103  Black Women in the Diaspora  credit: 3 hours.
Same as AFRO 103 and GWS 103. See AFRO 103.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

AFST 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

AFST 201  Elementary Bamana I  credit: 5 hours.
Same as BMNA 201. See BMNA 201.

AFST 202  Elementary Bamana II  credit: 5 hours.
Same as BMNA 202. See BMNA 202.

AFST 209  Constr Afr and Carib Identity  credit: 3 hours.
Same as CWL 225, FR 240, and LAST 240. See FR 240.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

AFST 210  Intro to Mod African Lit  credit: 3 hours.
Significant contemporary African writings depicting the history and cultural traditions of African peoples. Same as CWL 210 and ENGL 211.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

AFST 211  Elementary Lingala I  credit: 5 hours.
Same as LGLA 201. See LGLA 201.

AFST 212  Elementary Lingala II  credit: 5 hours.
Same as LGLA 202. See LGLA 202.

AFST 222  Introduction to Modern Africa  credit: 3 hours.
Interdisciplinary introduction to Africa dealing with basic themes and problems in the politics, economics, sociology, anthropology, and history of Africa. Same as ANTH 222, PS 242, and SOC 222.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

AFST 231  Elementary Swahili I  credit: 5 hours.
Same as SWAH 201. See SWAH 201.

AFST 232  Elementary Swahili II  credit: 5 hours.
Same as SWAH 202. See SWAH 202.

AFST 241  Elementary Wolof I  credit: 5 hours.
Same as WLOF 201. See WLOF 201.

AFST 242  Elementary Wolof II  credit: 5 hours.
Same as WLOF 202. See WLOF 202.

AFST 243  Pan Africanism  credit: 3 hours.
Same as AFRO 243, PS 243, and SOC 267. See PS 243.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

AFST 251 **Elementary Zulu I** credit: 5 hours.
Same as ZULU 201. See ZULU 201.

AFST 252 **Elementary Zulu II** credit: 5 hours.
Same as ZULU 202. See ZULU 202.

AFST 254 **Economic Systems in Africa** credit: 3 hours.
Same as ACE 254. See ACE 254.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

AFST 266 **African Film and Society** credit: 3 hours.
Same as ANTH 266. See ANTH 266.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

AFST 267 **Memoirs of Africa** credit: 3 hours.
Same as ANTH 267. See ANTH 267.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Advanced Composition

AFST 312 **Central African Art** credit: 3 hours.
Same as ARTH 312. See ARTH 312.

AFST 403 **Intermediate Bamana I** credit: 4 hours.
Same as BMNA 403. See BMNA 403.

AFST 404 **Intermediate Bamana II** credit: 4 hours.
Same as BMNA 404. See BMNA 404.

AFST 405 **Topics Swahili Lang & Lit I** credit: 3 hours.
Same as SWAH 407. See SWAH 407.

AFST 406 **Topics Swahili Lang & Lit II** credit: 3 hours.
Same as SWAH 408. See SWAH 408.

AFST 407 **Adv Topics Swahili Lang&Lit I** credit: 3 OR 4 hours.
Same as SWAH 409. See SWAH 409.

AFST 408 **Adv Topics Swahili Lang&Lit II** credit: 3 OR 4 hours.
Same as SWAH 410. See SWAH 410.

AFST 410 **Modern African Fiction** credit: 3 OR 4 hours.
Examines selected major African novels along thematic and formal lines; literary responses to colonialism and political independence and the crises that accompanied both in Africa; and study of critical approaches to the African novel and African characteristics of and contribution to the novel as a genre. Readings in English. Same as CWL 410, ENGL 470, and FR 410. 3 undergraduate hours. 4 graduate hours. Prerequisite: AFST 210 or AFST 222, or junior standing.

AFST 412 **Lang in African Culture & Soc** credit: 3 OR 4 hours.
Same as LING 412. See LING 412.

AFST 413 **Intermediate Lingala I** credit: 4 hours.
Same as LGLA 403. See LGLA 403.
AFST 414  Intermediate Lingala II  credit: 4 hours.
Same as LGLA 404. See LGLA 404.

AFST 415  Advanced Lingala I  credit: 3 hours.
Same as LGLA 405. See LGLA 405.

AFST 416  Advanced Lingala II  credit: 3 hours.
Same as LGLA 406. See LGLA 406.

AFST 417  Topics Lingala Lang & Lit I  credit: 3 hours.
Same as LGLA 407. See LGLA 407.

AFST 418  Topics Lingala Lang & Lit II  credit: 3 hours.
Same as LGLA 408. See LGLA 408.

AFST 420  Africana Feminisms  credit: 3 OR 4 hours.
Same as AFRO 415 and GWS 415. See AFRO 415.

AFST 421  Sacred African Diaspora Arts  credit: 3 OR 4 hours.
Same as ARTH 413. See ARTH 413.

AFST 425  Southern Africa Race & Power  credit: 3 OR 4 hours.
Same as HIST 412. See HIST 412.

AFST 431  Advanced Bamana I  credit: 3 hours.
Same as BMNA 405. See BMNA 405.

AFST 432  Advanced Bamana II  credit: 3 hours.
Same as BMNA 406. See BMNA 406.

AFST 433  Intermediate Swahili I  credit: 4 hours.
Same as SWAH 403. See SWAH 403.

AFST 434  Intermediate Swahili II  credit: 4 hours.
Same as SWAH 404. See SWAH 404.

AFST 435  Advanced Swahili I  credit: 3 hours.
Same as SWAH 405. See SWAH 405.

AFST 436  Advanced Swahili II  credit: 3 hours.
Same as SWAH 406. See SWAH 406.

AFST 437  Egypt Since World War I  credit: 2 TO 4 hours.
Same as HIST 438. See HIST 438.

AFST 443  Intermediate Wolof I  credit: 4 hours.
Same as WLOF 403. See WLOF 403.

AFST 444  Intermediate Wolof II  credit: 4 hours.
Same as WLOF 404. See WLOF 404.

AFST 445  Advanced Wolof I  credit: 3 hours.
Same as WLOF 405. See WLOF 405.

AFST 446  Advanced Wolof II  credit: 3 hours.
Same as WLOF 406. See WLOF 406.

AFST 447  Topics Wolof Lang & Lit I  credit: 3 hours.
Same as WLOF 407. See WLOF 407.

AFST 448  Topics Wolof Lang & Lit II  credit: 3 hours.
Same as WLOF 408. See WLOF 408.
AFST 451  Intermediate Zulu I  credit: 4 hours.
Same as ZULU 403. See ZULU 403.

AFST 452  Intermediate Zulu II  credit: 4 hours.
Same as ZULU 404. See ZULU 404.

AFST 453  Advanced Zulu I  credit: 3 hours.
Same as ZULU 405. See ZULU 405.

AFST 454  Advanced Zulu II  credit: 3 hours.
Same as ZULU 406. See ZULU 406.

AFST 467  Kinship-Culture-Power-Africa  credit: 2 OR 4 hours.
Same as ANTH 469. See ANTH 469.

AFST 469  Structure of Semitic Languages  credit: 3 OR 4 hours.
Same as LING 469. See LING 469.

AFST 509  Seminar in African Art  credit: 4 hours.
Same as ARTH 510. See ARTH 510.

AFST 510  Problems in African History  credit: 4 hours.
Same as HIST 510. See HIST 510.

AFST 511  Seminar in African History  credit: 4 hours.
Same as HIST 511. See HIST 511.

AFST 515  Practicum in African Studies  credit: 2 hours.
A supervised practicum that emphasizes participation in the Center's educational activities and includes organizing conferences and outreach to K-12 educators, the media, and the community. Approved for S/U grading only. Prerequisite: Enrollment in graduate African Studies program or related Ph.D. programs, or consent of instructor.

AFST 522  Development of African Studies  credit: 4 hours.
Examines the development of Africanist scholarship during the 20th century and the changing paradigms in African Studies; focuses on the rise of the area studies model and its influences on the major Social Science and Humanities disciplines. Prerequisite: Graduate student status and approval of instructor.

AFST 550  Special Topics  credit: 2 OR 4 hours.
Topics vary with the disciplinary focus. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

AFST 560  African Diaspora Seminar  credit: 4 hours.
Same as AFRO 560. See AFRO 560.

AFST 599  Thesis Research  credit: 0 TO 8 hours.
Individual direction in research and guidance in writing theses for advanced degrees. Approved for S/U grading only. May be repeated to a maximum of 8 hours.
Agricultural Communications

Human and Community Development
Head of Department: Robert Hughes
Department Office: 274 Bevier Hall, 905 South Goodwin Avenue, Urbana
Phone: 333-3790
www.aces.uiuc.edu/~hcd

AGCM 110 Intro to Ag and Env Comm credit: 3 hours.
Introduction to the uses of mass communications media and theories in agricultural and environmental communications and community and human development, and to professional opportunities in applied communications in agricultural, environmental, and human services organizations.

AGCM 190 Student Publications and Media credit: 1 TO 3 hours.
Reporting, photography, editing and other production for Illini Horizon and other College of Agricultural, Consumer and Environmental Sciences student publications and broadcast activities. Approved for S/U grading only. May be repeated to a maximum of 12 hours. Students may register in this course more than once in the same term for a total of 3 undergraduate hours.

AGCM 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
Experimental course on a special topic in agricultural communications. May be repeated in the same or separate terms as topics vary.

AGCM 210 Writing for Ag and Env Media credit: 3 hours.
Introduction to writing for the agricultural and environmental media. Emphasis on basic skills used to communicate through these media, with particular emphasis on writing skills.

AGCM 220 Presenting Information credit: 3 hours.
Examines four types of information necessary for promoting social change: problem analysis, benefit and risk, utility, and mobilization information. Students apply principles of information analysis and presentation using desk-top publishing software. Same as ENVS 220 and NRES 220. Prerequisite: AGCM 210 or JOUR 200.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

AGCM 240 Photography in Agriculture credit: 4 hours.
Application of visual communications principles to agriculture using the photograph as medium; emphasizes communicative, creative, and technical aspects. See Class Schedule for approximate cost of materials.

AGCM 293 Communications Internship credit: 1 TO 4 hours.
Supervised, off-campus experience in a field directly pertaining to subject matter in agricultural communications. Approved for S/U grading only. May be repeated in the same or subsequent terms to a maximum of 10 hours. Prerequisite: Sophomore standing.

AGCM 294 Research Internship credit: 1 TO 4 hours.
Supervised, on-campus, learning experience with faculty engaged in research. Approved for S/U grading only. May be repeated in the same or subsequent terms to a maximum of 10 hours. Prerequisite: Sophomore standing.

AGCM 295 Independent Study or Research credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated in the same or subsequent terms.

AGCM 320 Educational Campaign Planning credit: 4 hours.
Coordinated approach to planning and carrying out information campaigns using a variety of communications media; students contact and work with an agency interested in running a communications campaign to plan an information strategy related to the campaign topic. Prerequisite: AGCM 210 or JOUR 200.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

AGCM 330 Environmental Communications credit: 3 hours.
Basics of communicating about environmental issues to various audiences, emphasizing communication to lay publics. Gathering information about a current environmental issue, analyzing interests of groups involved, and examining strategies for communicating clearly to different groups. Same as ENVS 330 and NRES 330.
AGCM 370  Ag Sales Communications  credit: 3 hours.
Role, dynamics, and principles of personal sales communications as related to food and agriculture; methods for analyzing, setting objectives, planning, conducting and evaluating sales communications efforts; individual observation of principles applied by agricultural sales professionals. Prerequisite: Junior standing.

AGCM 396 Honors Research or Thesis  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the direction of the Honors advisor. May be repeated in the same or subsequent terms. Prerequisite: Junior standing, admission to the ACES Honors Program.

AGCM 398 Undergraduate Seminar  credit: 1 TO 3 hours.
Special topics in a field of study directly pertaining to subject matter in agricultural communications. May be repeated in the same or subsequent terms to a maximum of 12 hours.

AGCM 430 Comm in Env Social Movements  credit: 3 hours.
Examines the interests, values systems and communications strategies of key participants in the environmental movement. Students examine environmental issues and predict possible reactions from key participants in the environmental arena. Same as ENVS 430, NRES 430, and SOC 464. Prerequisite: SOC 100 or RSOC 110.

AGCM 499 Seminar  credit: 1 TO 4 hours.
Special topics in agricultural communications. May be repeated in the same or subsequent terms to a maximum of 12 undergraduate or graduate hours as topics vary.
# Agricultural Education

Human and Community Development  
Head of Department: Robert Hughes  
Department Office: 274 Bevier Hall, 905 South Goodwin Avenue, Urbana  
Phone: 333-3790  
www.aces.uiuc.edu/~hcd  

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<tr>
<th>Course Code</th>
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<td>AGED 199</td>
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<td>AGED 220</td>
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<td>AGED 260</td>
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<td>AGED 293</td>
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<td>AGED 295</td>
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<td>AGED 350</td>
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<td>AGED 360</td>
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<td>AGED 396</td>
<td>Honors Research or Thesis</td>
<td>1 TO 4</td>
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<tr>
<td>AGED 398</td>
<td>Undergraduate Seminar</td>
<td>1 TO 3</td>
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</tbody>
</table>
Special topics in a field of study directly pertaining to subject matter in agricultural education. May be repeated in the same or subsequent terms to a maximum of 12 hours.

**AGED 420**  **Teaching Strategies for Youth**  credit: 4 hours.

Synthesis of principles of teaching and learning as they influence learning activities of youth in formal and informal environments within the agricultural, consumer and environmental sciences: psychological aspects of learning, student-centered approaches to learning, course and program planning and development, creating teaching plans, instructing students in laboratory settings, techniques for evaluating student learning, strategies for management of learners in positive learning environments, motivating learners, equipping educators with strategies for effective self-reflective teaching behaviors.

**AGED 430**  **Youth Development Programs**  credit: 3 OR 4 hours.

Instruction in the youth development process, including learning; philosophy and purposes of youth development policies, programs, and organizations; relationships to organizational missions; principles and procedures for developing, coordinating, and implementing youth development programs; and examining research and practice in youth-at-risk initiatives. Prerequisite: AGED 220, or HDFS 105, or PSY 100.

**AGED 450**  **Program Delivery and Eval**  credit: 3 hours.

Students complete this course during their twelve-week practice teaching or internship experience. Written assignments will focus on development of teaching plans, program initiation and improvement plans, and actual evaluation studies of agricultural education programs. Instruction will be provided during on-site faculty visits and by cooperating personnel. Prerequisite: AGED 420.

**AGED 451**  **Professional Dev in Ag Ed**  credit: 1 hours.

Analysis of teaching and learning processes, program evaluation and improvement strategies, curriculum development and modification, professional development, facility development, using community resources, program management, and discussion of trends and issues in agricultural education. Prerequisite: Senior standing.

**AGED 499**  **Seminar**  credit: 1 TO 4 hours.

Special topics in agricultural education. May be repeated in the same or subsequent terms to a maximum of 12 undergraduate or graduate hours as topics vary.

**AGED 500**  **Special Topics in Ag Education**  credit: 2 TO 4 hours.

Advanced study in selected phases of agricultural education applicable to agricultural educators in schools, community colleges, universities, cooperative extension, agribusiness, and community and governmental agencies. May be repeated in the same and subsequent terms.

**AGED 510**  **Education Program Management**  credit: 4 hours.

Theoretical and practical approaches to planning, delivering and evaluating programs in agricultural education, with a focus on development of comprehensive educational plans.

**AGED 520**  **Teaching College-Level ACES**  credit: 2 hours.

Planning, delivering and evaluating effective teaching and learning of college-level agricultural, consumer and environmental sciences; the role of faculty in the governance of higher education in the agricultural sciences. Prerequisite: Master's standing.

**AGED 525**  **Laboratory Teaching Methods**  credit: 4 hours.

Theoretical and practical approaches to teaching agriculture in laboratory settings; mechanics, horticulture, agriscience, land laboratories, and other school-based and community-based laboratories will be considered. Research and theoretical foundations that underlie the aspects of planning, management, teaching, evaluation, safety, finance, and facility design will be discussed within the context of laboratory instruction in agriculture.

**AGED 549**  **Independent Study**  credit: 2 TO 4 hours.

Individual investigation and reporting of research on any phase of agricultural education selected by the student and approved by the advisor and faculty member who will supervise the study. May be repeated in the same or subsequent terms to a maximum of 8 hours.
Applied Health Sciences Courses

Applied Health Sciences Courses
Dean and Program Administrator: Tanya Gallagher
College Office: 108 Huff Hall, 1206 S. Fourth, Champaign
Phone: 333-2131
www.ahs.uiuc.edu

AHS 199  Undergraduate Open Seminar  credit: 1 TO 6 hours.
Topics will vary each semester. Please see section topic. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours in the same or subsequent terms as topics vary.

AHS 292  AHS Study Abroad  credit: 0 TO 18 hours.
Provides credit toward the undergraduate degree for study at an accredited international institution or approved overseas program. Final determination of credit granted is made upon the student's successful completion of work. Approved for Honors and S/U letter grading only. May be repeated to a maximum of 44 hours. Prerequisite: One year or residence at UIUC and consent of major department and the college.

AHS 399  Advanced Open Seminar  credit: 1 TO 6 hours.
Advanced undergraduate seminar. Topics will vary each semester. Please see section topic. Approved for letter and S/U grading. May be repeated in the same or subsequent terms to a maximum of 6 hours.
American Indian Studies

American Indian Studies
Director: Robert Warrior
Native American House: 1204 West Nevada, Urbana
Phone: 265-9870
www.nah.uiuc.edu

AIS 101  Intro to Amer Indian Studies  credit: 3 hours.
Interdisciplinary introduction surveys the stories, histories, and lands of tribal peoples who became known as “American Indians.”

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AIS 102  Contemp Issues in Ind Country  credit: 3 hours.
Surveys a variety of topics in contemporary American Indian life. Focusing on the modern experience, topics may include law and politics; lands and environment; education; visual arts: languages and literatures; health; social justice; business; treaties; the sacred; gender; sports; decolonization; comparative tribal, Indian and global indigenous concerns.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

AIS 140  Native Religious Traditions  credit: 3 hours.
An interdisciplinary survey of native religious traditions, exploring the breadth and depth of spiritual expression among native people in North America. Assigned readings and class discussions cover a variety of important themes including sacred landscapes, mythic narratives, oral histories, communal identities, tribal values, elder teachings, visionary experiences, ceremonial practices, prayer traditions, and trickster wisdom. Students also consider historic encounters with missionary colonialism and contemporary strategies for religious self-determination. Class discussions are supplemented by audiovisual materials and guest speakers. Same as RLST 140.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AIS 165  Lang & Culture Native North Am  credit: 3 hours.
Same as ANTH 165. See ANTH 165.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

AIS 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated to a maximum of 6 hours.

AIS 265  Intro to American Indian Lit  credit: 3 hours.
Introduces students to the study of American Indian literature by focusing on texts by contemporary American Indian novelists, poets, and playwrights. Over the course of the semester, students will consider how indigenous aesthetics shape narrative in addition to examining how American Indian authors engage the legacies of colonization and the histories of their tribal communities through their stories. Same as ENGL 265.

AIS 275  American Indians and Film  credit: 3 hours.
Introduction to representations of American Indians in film. Emphasis on reconstructions of American Indians within the Western genre and more recent reconstructions by Native filmmakers. Students will be required to attend film screenings. Same as CINE 275 and ENGL 275. Prerequisite: Fulfillment of the Composition I English requirement.

AIS 277  US Native Americans to 1850  credit: 3 hours.
Same as HIST 277. See HIST 277.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AIS 278  US Native Americans Since 1850  credit: 3 hours.
AIS 280  **Intro to Federal Indian Policy**  credit: 3 hours.
Traces the evolution of U.S. federal law as it pertains to American Indian nations. From the doctrine of discovery, through which European nations asserted control over the lands they claimed, to the processes of reorganization and recognition that have shaped contemporary rights and struggles native nations currently face, this class will interrogate how American Indian nations were transformed into "domestic dependent nations."

AIS 285  **Indigenous Thinkers**  credit: 3 hours.
An introduction to the English-language traditions of indigenous intellectuals. Specific topics vary. May be repeated in the same term to a maximum of 6 hours. May be repeated in subsequent terms to a maximum of 9 hours.

AIS 288  **American Indians of Illinois**  credit: 3 hours.
Same as ANTH 288 and HIST 288. See ANTH 288.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AIS 291  **Independent Study**  credit: 1 TO 6 hours.
Supervised reading and research in American Indian Studies chosen by the student with instructor approval. May be repeated in the same or subsequent semesters to a maximum of 6 hours. Prerequisite: One course in American Indian Studies and consent of instructor.

AIS 301  **Theories and Methods in AIS**  credit: 3 hours.
Interdisciplinary introduction to the principal concepts, methodologies, and approaches in American Indian Studies. Surveys the intellectual traditions of and tensions in the field.

AIS 430  **Indigenous Governance**  credit: 3 OR 4 hours.
Indigenous peoples have long and rich traditions of governance and political philosophies that have shaped institutions and informed diplomacies amongst each other and with European nations. This course examines the indigenous governance historically and within contemporary contexts with emphasis on the importance of sovereignty within institutions, education, language revitalization, and cultural resurgence. 3 undergraduate hours. 4 graduate hours. Prerequisite: Any 100 or 200-level American Indian Studies course or consent of instructor.

AIS 451  **Politics of Children's Lit**  credit: 3 OR 4 hours.
Students will revisit classic and popular children's books, applying critical theoretical perspectives to texts with the purpose of examining ideologies behind their creation, publication, review, distribution, and consumption. An emphasis will be placed on texts by and about American Indians. 3 undergraduate hours. 4 graduate hours. Prerequisite: Fulfillment of the Advanced Composition requirement; junior standing or above; or consent of instructor.

AIS 459  **Topics in American Indian Lit**  credit: 3 OR 4 hours.
Interdisciplinary seminar on special and advanced topics in American Indian and Indigenous Literatures. Same as ENGL 459. 3 undergraduate hours. 4 graduate hours. May be repeated in the same or subsequent terms to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: One year of college literature or consent of instructor.

AIS 461  **Politics of Popular Culture**  credit: 3 OR 4 hours.
Concerned with interdisciplinary frameworks that allow us to 'read' popular culture as well as with its actual forms and specific artifacts, this course seeks, first, to grasp how popular culture has legitimized the colonization of American Indian peoples and second, to reflect on the ways in which Indians engage popular culture to assert an anti-oppression politics. Same as MS 461. 3 undergraduate hours. 4 graduate hours. Credit is not given for both AIS 461 and MS 320 or MDIA 570. Prerequisite: Any 100 or 200-level American Indian Studies course or consent of the instructor.

AIS 481  **History of Amer Indian Educ**  credit: 3 OR 4 hours.
Students will study various efforts to "civilize" American Indians through US government initiatives and religious churches, as well as educational models developed by tribal entities following passage of the Indian Self-Determination and Education Assistance Act of 1975. Same as EPS 481. 3 undergraduate hours. 4 graduate hours.

AIS 485  **Indigenous Transnationalisms**  credit: 3 OR 4 hours.
Identification and emergent transnational movements of borders, corporations, human beings, ideas, militaries, and technologies broadly across cultures, histories, nations, and peoples and develops a critical awareness of the histories and contemporary consequences of these movement for both the colonized and the colonizer. Topics vary. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours in subsequent terms as topics vary. Prerequisite: Any 100 or 200-level American Indian Studies course or consent of instructor.

AIS 490  **Adv Topics in Am Ind Studies**  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Any course in American Indian Studies; junior standing; or consent of instructor.

AIS 491  **Readings in Am Ind Studies**  credit: 1 TO 8 hours.
Individual guidance in intensive readings in the theories and practices of the field of American Indian Studies. May be repeated in the same or subsequent terms to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Graduate standing or one course in AIS and consent of instructor.

AIS 495  **Indigenous Critical Theory**  credit: 3 OR 4 hours.
Development of analytical frameworks at the intellectual crossroads where the innovative epistemologies of an American Indian-centered and community-grounded indigenous studies meets feminist theory, critical race theory, semiotic studies, linguistically oriented psychoanalysis, and post colonial theory. Topics vary. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours in separate terms as topics vary. Prerequisite: Any 100 or 200-level American Indian Studies course or consent of instructor.

AIS 501  **Seminar in Indigenous Research**  credit: 4 hours.
Interdisciplinary seminar introduces students to the tools one needs to research and write about indigenous people while engaging those students with the conceptual, ethical, and professional challenges inherent in this type of scholarship. Prerequisite AIS 485 or AIS 495.

AIS 590  **Am Indian Studies Grad Seminar**  credit: 4 hours.
May be repeated up to a maximum of 8 hours. Prerequisite: Graduate standing or consent of instructor.

AIS 591  **Problems in Indigenous Studies**  credit: 1 TO 8 hours.
Offers flexible, rigorous, and wide-ranging opportunities for interdisciplinary graduate-level work in Indigenous (including American Indians) Studies; thus, depending on student needs and instructor interests, the course may be negotiated as a directed reading, directed research, supervised fieldwork, supervised teaching, project, or thesis supervision. May be repeated in the same or subsequent semesters to a maximum of 8 hours. Prerequisite: Consent of instructor.
Animal Sciences

ANSC 100  Intro to Animal Sciences  credit: 4 hours.
Survey of beef and dairy cattle, companion animals, horses, poultry, sheep, and swine. Includes the importance of product technology and the basic principles of nutrition, genetics, physiology, and behavior as they apply to breeding, selection, feeding, and management. Lecture and lab.

ANSC 103  Working With Farm Animals  credit: 2 hours.
Introductory course that will provide novice students with the fundamentals of animal-animal and animal-human interactions for domestic farm animals. Emphasizes hands-on experiences to develop a background in the concepts and practice of recognizing and understanding the animal's physiology and behavior, animal well being, and animal responses to human interactions. Prerequisite: ANSC 100.

ANSC 109  Meat Pricing and Preparation  credit: 2 hours.
General approach to meat utilization with emphasis on selecting, grading, cutting, and pricing meat for the home, restaurant, and food service industry; includes laboratory. When appropriate, field trips are taken to area commercial establishments. See Class Schedule approximate cost.

ANSC 110  Life With Animals and Biotech  credit: 3 hours.
Lecture/discussion course that will provide students an overview of biotechnology and animals. Focuses on biotechnological achievements involving animals and how they influence the global development of agriculture, medicine, and industry. Topics will be covered from scientific, discovery, historical, social, and political perspectives.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

ANSC 119  Meat Technology  credit: 3 hours.
Student participation in the transformation of live animals through harvest and carcass fabrication into food products for human consumption; includes laboratory. Purchase of personal equipment is required; see Class Schedule for approximate cost.

ANSC 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
An experimental course on a special topic in animal sciences. Topic may not be repeated except in accordance with the Code. May be repeated to a maximum of 12 hours. No more than 12 hours may be counted toward graduation.

ANSC 201  Principles of Dairy Production  credit: 3 hours.
Surveys the dairy industry; examines principles of breeding, selection, reproduction, feeding, milking and management of dairy cattle. Prerequisite: ANSC 100.

ANSC 204  Intro Dairy Cattle Evaluation  credit: 2 hours.
Evaluation of physical traits of dairy cattle in relation to economic value and genetic improvement; sire selection, mating systems, and genetic merit for dairy cattle. Field trip required. See Class Schedule for approximate cost of field trip. Prerequisite: ANSC 100 or consent of instructor.

ANSC 205  World Animal Resources  credit: 3 hours.
Examination of the world's animals, domesticated and wild, and their uses in various climatic, economic and cultural contexts. Exploration of their contemporary management and their future prospects. Provides background for international experiences, such as ACES 298 and ACES 299. Prerequisite: Completion of the campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ANSC 206  Horse Management  credit: 3 hours.
Focus on the principles of managing horses from birth through breeding; topics include reproductive physiology, breeding management, nutrition, diseases, parasites, herd health programs, genetics, facility design and exercise physiology. Prerequisite: ANSC 340 and ANSC 331.
ANSC 207  **Companion Animal Biology & Care**  credit: 3 hours.
An introduction to companion animal biology through consideration of the physical structure, nutrition, behavior, and reproduction of mammals, birds, reptiles, amphibians and fish. Basic biological concepts contribute to discussion of best husbandry practices and preventive health care. Legal and economics issues, ethical considerations, and other topics associated with companion animals are also discussed.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

ANSC 209  **Meat Animal Carcass Eval**  credit: 3 hours.
Study principles and techniques used in meat animal and carcass evaluation along with factors that influence composition, meat quality and preparation. Students planning to enroll in ANSC 310 and ANSC 312 should take ANSC 209 in their sophomore year. Prerequisite: ANSC 100.

ANSC 211  **Breeding Animal Evaluation**  credit: 3 hours.
Application of current scientific tools, methods, and performance programs available to livestock breeders for improving beef cattle, swine, sheep, and horses; emphasis on the changing nature of modern breeds of livestock as influenced by selection, economics, and consumer and market trends. Sophomore standing; credit or concurrent registration in ANSC 209.

ANSC 213  **Beef and Swine Management**  credit: 3 hours.
Examines basic principles of beef cattle and swine management for students other than animal sciences majors. Credit is not given for both ANSC 213 and ANSC 401 or ANSC 403. Prerequisite: ANSC 100.

ANSC 215  **Humane Edu With Companion Anim**  credit: 3 hours.
Course explores humane education as it pertains to companion animals, primarily cats and dogs. The historical aspects of domestication and humane education as well as modern-day relationships between humans and companion animals are addressed. Pet over-population and resulting animal shelter issues are discussed in detail. Selection, behavior, and care of companion animals are studied with a focus on promoting the human-companion animal bond, behavioral wellness, and safety. Animal protection laws, animal control laws, and the connection between animal cruelty and violent behavior toward humans are also examined. Prerequisite: Sophomore standing.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ANSC 250  **Companion Animals in Society**  credit: 3 hours.
Explores the current and historical functions and influences of companion animals in American society. Topics include the evolution of animal protection, the use of assistance and service animals, and the growth of the pet supply industry. Controversial issues which are of current concern to society will also be examined.

This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

ANSC 293  **Internship Off Campus**  credit: 1 TO 4 hours.
Supervised, off-campus learning experience in an animal-related enterprise. May be repeated in the same or subsequent terms to a maximum of ten hours. Prerequisite: Good academic standing; ANSC 100.

ANSC 294  **Intern On Campus Practical Exp**  credit: 1 TO 5 hours.
Supervised, on-campus learning experience associated with subject matter specific to animal sciences. Approved for both letter and S/U grading. May be repeated in the same or subsequent terms to a maximum of ten hours. Prerequisite: Good academic standing; ANSC 100.

ANSC 295  **UG Research or Thesis**  credit: 1 TO 5 hours.
Individual research in animal sciences. May be repeated in the same or subsequent terms to a maximum of ten hours. Prerequisite: Minimum GPA of 2.5; not open to students on probation; consent of instructor.

ANSC 298  **Undergraduate Seminar**  credit: 1 hours.
Presentations and discussion of employment opportunities, departmental research activities, and topics relevant to animal agriculture. Prerequisite: Sophomore standing.

ANSC 299  **Animal Mgt Field Studies**  credit: 1 OR 2 hours.
Field studies of farms and service industries; discusses and demonstrates management practices on commercial farms. Trip normally taken during spring break, see Class Schedule for approximate cost.

ANSC 305  **Human Animal Interactions**  credit: 3 hours.
Explores the relationships between humans and companion animals and the roles and functions that animals play in today's society. Examines the evolution of the human/companion animal bond, benefits and disadvantages of this bond, and working/nonworking roles of companion animals. Controversial issues which are of current concern to society will be examined in detail. Writing and in-class discussions are emphasized. Prerequisite: Junior standing.

**ANSC 306  Equine Science**  credit: 3 hours.
Understand and apply current scientific research and principles of equine science to intensive horse production. An in-depth approach to equine reproductive physiology, nutrition, anatomy and exercise physiology will be followed using a combined lecture and laboratory format. Emphasis on current research and hands-on techniques. Prerequisite: ANSC 206, ANSC 331 and ANSC 362, or consent of instructor.

**ANSC 310  Meat Selection and Grading**  credit: 2 hours.
Study characteristics associated with the value of carcasses, primal and retail cuts from meat animals; emphasize USDA grading and specifications as well as written communication. Field trips to meat packing plants are required; see Class Schedule for approximate cost.

**ANSC 312  Advanced Livestock Evaluation**  credit: 3 hours.
Advanced instruction in the selection of breeding animals of beef, sheep, and swine species and in the evaluation of market animals for slaughter. This course requires visits to farms, related companies, and events to observe the latest techniques and scientific principles associated with livestock selection and evaluation. Prerequisite: ANSC 211 or consent of instructor.

**ANSC 313  Horse Appraisal**  credit: 2 hours.
Advanced course for students interested in improving their performance and conformation evaluation skills; provides exposure to the horse show industry and the career opportunities associated with this facet of the horse industry; students may compete in intercollegiate judging contests.

**ANSC 314  Adv Dairy Cattle Evaluation**  credit: 2 hours.
Advanced instruction in the selection of breeding dairy animals. Involves visits to farms, related companies and events to observe the latest techniques and scientific principles associated with dairy cattle selection and evaluation. Field trips for cattle judging are required. May be repeated to a maximum of 4 hours. Prerequisite: ANSC 204 or consent of instructor.

**ANSC 321  Animal Nutrition**  credit: 4 hours.
Principles of animal nutrition and their application to farm livestock and man. Credit is not given for both ANSC 321 and ANSC 325. Prerequisite: CHEM 104 and CHEM 105 or equivalent.

**ANSC 325  Principles of Animal Nutrition**  credit: 3 hours.
Principles of animal nutrition and their application to veterinary practice; designed primarily for students in veterinary medicine. Lecture and laboratory. Credit is not given for both ANSC 325 and ANSC 321. Prerequisite: MCB 350 or equivalent.

**ANSC 331  Biology of Reproduction**  credit: 4 hours.
Study of the basic principles of reproduction, lactation, growth, and hormone regulation of domestic and non-domestic animals as well as humans, including biotechnological methods of reproductive control, manipulation, performance enhancement of lactation and growth, and disease control. Same as IB 331. Prerequisite: Sophomore standing; IB 104 or one introductory level biology course.

This course satisfies the General Education Criteria for a:

UIUC: Life Sciences

**ANSC 340  Plant and Animal Genetics**  credit: 4 hours.
Same as CPSC 352 and NRES 352. See CPSC 352.

**ANSC 350  Cellular Metabolism in Animals**  credit: 3 hours.
Principles and regulation of cellular metabolism in animals, emphasizing energy derivation and its relationship to domestic animal and food production. Prerequisite: CHEM 104 and CHEM 105 and IB 104.

**ANSC 362  Princ of Animal Physiology**  credit: 4 hours.
A course in animal physiology designed to provide a foundation for advanced courses in the Animal Sciences curriculum. Course emphasizes general principles, structure/function relationships, and underlying physiochemical mechanisms of mammalian physiology. Lectures provide in-depth coverage of the operation, regulation, and integration of major organ systems. Laboratories complement lecture by providing a series of student-conducted in vitro and in vivo experiments designed to illustrate basic physiological concepts and to introduce students to physiology research techniques, instrumentation, experimental design, and interpretation of results. Prerequisite: IB 104, CHEM 102 and CHEM 103, and CHEM 104 and CHEM 105.

**ANSC 363  Behavior of Domestic Animals**  credit: 3 hours.
Introduction to concepts of animal behavior with emphasis on domestic animals; lecture and lab. Credit is not given for both ANSC 363 and IB 429. Prerequisite: IB 104 and ANSC 100, or equivalent.

**ANSC 396  UG Honors Research or Thesis**  credit: 1 TO 5 hours.

Independent study, under the supervision of a faculty member, on a problem of appropriate scope and character that culminates in writing a thesis. Intended primarily for honors students who plan on conducting research or pursuing graduate study. Thesis projects must be supervised by a faculty member and reviewed by a departmental committee. Students must present a satisfactory thesis to receive credit. May be repeated in the same or subsequent terms to a maximum of ten hours. Prerequisite: Junior standing, minimum GPA of 3.4; consent of a faculty member.

**ANSC 400  Dairy Herd Management**  credit: 3 hours.

The technology of modern milk production practices; application of principles in nutrition, physiology, economics, health and hygiene, waste management, and facilities design for efficient dairy herd management systems. See Class Schedule for approximate cost. Prerequisite: ANSC 321 or equivalent.

**ANSC 401  Beef Production**  credit: 3 hours.

The principles of the management of beef cattle enterprises. Applies science and technology to the breeding, selection, feeding, health and production of beef and beef products. Emphasizes the use of research findings in decision-making. Credit is not given for both ANSC 213 and ANSC 401. Prerequisite: ANSC 321 or equivalent.

**ANSC 402  Sheep Production**  credit: 3 hours.

Study of management, nutrition, reproduction, genetics, marketing, economics, housing, health and production record programs as they apply to sheep production. History of the U. S. sheep industry will be explored along with a study of wool production, marketing and processing. Prerequisite: ANSC 321 or equivalent.

**ANSC 403  Pork Production**  credit: 3 hours.

Applies science and technology to the selection, breeding, feeding, housing and management of swine in a production enterprise; emphasizes use of research findings in decision making. Credit is not given for both ANSC 213 and ANSC 403. Prerequisite: ANSC 340 ANSC 321, and ANSC 467; and ANSC 331 or ANSC 431.

**ANSC 404  Poultry Science**  credit: 3 OR 4 hours.

Basic principles of genetics, physiology, nutrition, and health of avian species; the application of science and technology in solving the breeding, nutrition, disease, housing, and other management problems encountered in commercial egg and poultry meat production. Undergraduate and graduate students must complete research project to obtain 4 hours.

**ANSC 405  Advanced Dairy Management**  credit: 2 hours.

Advanced dairy management compliments the four other classes offered in the dairy certificate program featuring applied management principles and practices needed in modern dairy production. Prerequisite: ANSC 201 or equivalent or consent of instructor.

**ANSC 406  Zoo Animal Conservation Sci**  credit: 3 hours.

Topics related to the conservation, physiology and management of exotic animal species in a captive setting will be addressed. These include conservation biology, population genetics, nutrition, reproduction (natural and assisted), behavior, exhibitry, environmental enrichment and veterinary care. Also covers taxonomy, zoo research, the role of zoos in conservations, and the ethics of maintaining captive animals. One Saturday field trip is required. Prerequisite: IB 104 or equivalent.

**ANSC 409  Meat Science**  credit: 4 hours.

Fundamental biological principles that influence growth, composition, processing, preservation, and quality of meat and meat products. Prerequisite: CHEM 104 and CHEM 105; MCB 100 and MCB 101, or MCB 300 and MCB 301.

**ANSC 420  Ruminant Nutrition**  credit: 3 hours.

Physiology and microbiology of digestion in the ruminant, and biochemical pathways of utilization of the absorbed nutrients for productive purposes. Prerequisite: ANSC 321.

**ANSC 421  Minerals and Vitamins**  credit: 3 hours.

Nutritional implications and metabolic roles of minerals and vitamins in animal metabolism. The course is designed to instill a basic understanding of vitamin and mineral functions, absorption, metabolism, and excretion. Research methodologies used in the study of vitamin and mineral nutrition will also be discussed. Prerequisite: A nutrition course (ANSC 321, ANSC 325, or equivalent) and credit or concurrent registration in MCB 350 or ANSC 350, or consent of instructor.

**ANSC 422  Companion Animal Nutrition**  credit: 3 hours.

Digestive physiology and basic nutritional considerations of companion animals including canine, feline, laboratory animals, and some wildlife species. Nutritional idiosyncrasies and the importance of nutrition in various physiological states will be emphasized.
research findings will be used to illustrate development/refinement of nutritional principles applied to these species. Prerequisite: ANSC 321 or equivalent.

ANSC 423  **Advanced Dairy Nutrition**  credit: 2 hours.
All aspects of dairy cattle nutrition will be discussed including nutrients, phase feeding (milk curve analysis, dry matter intake, and body weight loss), dry and transition cow programs, forage feeding systems, feed delivery approaches, metabolic disorders related to nutrition, and application of various dairy feeding guides. Prerequisites: ANSC 201 or equivalent, or consent of instructor.

ANSC 431  **Advanced Reproductive Biology**  credit: 3 hours.
Course is an upper-level undergraduate or entry-level graduate course dealing with reproductive biology. It will include the study of basic cell biology of reproduction, lactation, growth and hormone regulation of domestic and non-domestic animals as well as humans, including biotechnology methods of reproduction control, manipulation, performance enhancement of lactation and growth, and disease control. Prerequisite: ANSC 331 or consent of instructor.

ANSC 435  **Milk Quality and Udder Health**  credit: 2 hours.
An advanced course on the physiological basis of mammary growth, milk secretion, and udder health. Topics covered includes mammary gland anatomy, hormonal control, causes and control of mastitis, milk harvesting, and milk quality. The course will be delivered via CD and web-based synchronous discussion. Students should have a basic course in dairy/animal sciences, or physiology, or consent of the instructor before taking this course. Students may not receive credit for this course and ANSC 438. Prerequisite: ANSC 201 or equivalent or consent of instructor.

ANSC 437  **Adv Reproductive Management**  credit: 2 hours.
The focus of this course is advanced techniques and technologies used to manage production livestock. The course will emphasize advanced and emerging technologies such as embryo transfer, cloning, semen sexing, and ultrasound pregnancy diagnosis and fetal sexing and innovations in existing procedures including artificial insemination, reproductive health management, and estrus synchronization. Implementation of existing and emerging techniques and technologies and research and discovery will be covered for individuals focusing on careers in livestock production, clinical veterinary medicine, education, technical service/support, and research and development. Approved for both letter and S/U grading. Prerequisite: ANSC 331 or equivalent, or consent of instructor.

ANSC 438  **Lactation Biology**  credit: 4 hours.
Examines the structural and functional development of the mammary gland, cell biology, and control of milk synthesis, and composition and biochemistry of milk. Compares and analyzes the physiological processes of lactation in mammals. Prerequisite: ANSC 331.

ANSC 440  **Applied Statistical Methods I**  credit: 4 hours.
Same as ABE 440, CPSC 440, FSHN 440, and NRES 440. See CPSC 440.

ANSC 441  **Human Genetics**  credit: 3 OR 4 hours.
Same as ANTH 441. See ANTH 441.

ANSC 444  **Applied Animal Genetics**  credit: 3 hours.
Principles of heredity and their application to the problems of animal improvement. Prerequisite: ANSC 340 or equivalent.

ANSC 445  **Statistical Methods**  credit: 4 hours.
Design and analysis of experiments: multiple regression, method of fitting constants, factorial experiments with unequal subclass numbers, analysis of covariance, experimental design; computer applications to agricultural experiments using statistical packages. Same as ABE 445 and NRES 445. Prerequisite: CPSC 440, or MATH 263, or equivalent.

ANSC 446  **Population Genetics**  credit: 3 OR 4 hours.
Mathematical theory of the genetics of populations: estimation of allele frequency for autosomal and X-chromosomal loci, Hardy-Weinberg principle, systems of mating, relationship between relatives, forces that change allele frequency, and quantitative inheritance. Applications to animals, plants, and humans. Same as IB 416. Students desiring 4 hours credit do additional work in some area of population genetics. Prerequisite: ANSC 340; IB 150 or IB 201; one of MATH 220, MATH 221, MATH 234; or consent of instructor.

ANSC 448  **Math Modeling in Life Sciences**  credit: 3 OR 4 hours.
Introduction to deterministic and stochastic mathematical models for the life sciences, statistical methods for fitting and testing models, and computer simulation programs. Applications to populations, processes, and products of animals, plants, and humans. Same as IB 487 and STAT 458. Students desiring 4 hours credit do additional work in some area of mathematical modeling in the life sciences. Prerequisite: IB 104; a course in calculus, and a course in computer sciences; or consent of instructor.

ANSC 449  **Biological Modeling**  credit: 3 OR 4 hours.
Same as CPSC 448, GEOG 468, and IB 491. See GEOG 468.

ANSC 450  **Comparative Immunobiology**  credit: 4 hours.
Advanced concepts of immunophysiology and immunogenetics. Immunophysiology with an emphasis on immune-neuroendocrine interactions. The molecular and cellular basis of self-nonself recognition with an emphasis on the major histocompatibility complex in vertebrates and innate immunity in both vertebrates and invertebrates. The mucosal immune system, which requires a complex interplay between innate and acquired immunity to protect mucosal surfaces exposed to the environment. A working knowledge of genetics and cellular and molecular biology is recommended. Same as MCB 442 and PATH 410.

**ANSC 451 Microbes and the Anim Indus** credit: 3 hours.
Fundamental aspects of the ecology of microorganisms and their biochemical activities related to the degradation of organic matter with emphasis on the gastrointestinal tract of production animals. Prerequisite: MCB 350 or MCB 352 and MCB 353, and MCB 100 or MCB 300 or MCB 424, or consent of instructor.

**ANSC 452 Animal Growth and Development** credit: 3 OR 4 hours.
Basic principles of animal growth from early fetal development through typical marketing ages for the major domestic animal species. Topics discussed include molecular and cellular determinants of tissue development and whole animal growth, with coverage of current and future technologies for manipulating growth to enhance animal production. 3 or 4 undergraduate hours. 4 graduate hours. Prerequisite: ANSC 362 and ANSC 321; ANSC 350 or MCB 350; or consent of instructor.

**ANSC 453 Stem Cell Biology** credit: 3 OR 4 hours.
The history of stem cell biology as well as up-to-date topics in stem cell research will be presented and discussed with emphasis on experimental approaches. Each student is expected to present research articles relative to each focus area and lead the discussion for the whole class every week. Topics include Molecular Reproductive Biology, Genetics, Physiology of both adult- and embryo-derived stem cells, and their application to Biotechnology and Regenerative Medicine. 3 undergraduate hours. 4 graduate hours. Prerequisite: STAT 100 or equivalent, and either MCB 316, ANSC 340 or equivalent; or consent of instructor.

**ANSC 455 Lab Animal Science I** credit: 1 hours.
Same as VCM 646. See VCM 646.

**ANSC 456 Lab Animal Science II** credit: 1 hours.
Same as VCM 656. See VCM 656.

**ANSC 465 Ethics in Biotechnology** credit: 3 hours.
Same as CPSC 465 and HORT 465. See HORT 465.

**ANSC 466 Animal Behavior** credit: 3 hours.
Same as ANTH 442 and IB 429. See IB 429.

**ANSC 467 Applied Animal Ecology** credit: 3 hours.
An in-depth multidisciplinary approach (physiology, behavior, immunology, neuroscience) to understanding animal-environment interactions (including thermal, air, microbial, photic and behavioral factors) as basis for prescribing practical environments for keeping animals. Courses in physiology, biology, nutrition, microbiology, and genetics are recommended. Prerequisite: ANSC 362.

**ANSC 483 Outreach Education Skills** credit: 3 hours.
Same as CPSC 483. See CPSC 483.

**ANSC 499 Seminar** credit: 1 TO 4 hours.
Group discussion or an experimental course on a special topic in animal sciences. May be repeated.

**ANSC 509 Muscle Biology** credit: 2 hours.
Microstructure and chemical composition of muscle tissue; chemistry and biosynthesis of muscle and connective tissue proteins; and biochemical aspects of muscle contraction and rigor mortis. Prerequisite: MCB 350 and BIOC 355.

**ANSC 510 Science of Animal Well-Being** credit: 1 hours.
Same as VCM 510. See VCM 510.

**ANSC 520 Protein and Energy Nutrition** credit: 3 hours.
Physiological aspects of protein and amino acids, fats and fatty acids, and carbohydrates as applied to higher animals; includes classification, digestion, absorption, utilization, metabolism, and dietary deficiencies and excesses. Prerequisite: MCB 350 or equivalent and a course in nutrition.

**ANSC 521 Regulation of Metabolism** credit: 4 hours.
Same as FSHN 511 and NUTR 511. See NUTR 511.

**ANSC 522 Advanced Ruminant Nutrition** credit: 3 hours.
Physiological and microbiological aspects of ruminant digestion and their influence on the metabolism of the extraruminal tissues; interpretation of nutritive requirements in terms of rumen microbial activities; and evaluation of research techniques. Offered in alternate years. Prerequisite: MCB 350 or equivalent.

**ANSC 523  Techniques in Animal Nutrition**  credit: 3 hours.
Discusses and applies methods of laboratory analysis and animal experimentation frequently used in nutrition research. May be repeated with approval. Prerequisite: Courses in nutrition, physiology, and biochemistry and consent of instructor.

**ANSC 524  Nonruminant Nutrition Concepts**  credit: 2 hours.
Review of literature in nonruminant nutrition. Emphasizes basic concepts associated with food intake, carbohydrate and fat utilization, protein quality, bioavailability of nutrients, and diet formulation. Prerequisite: Consent of instructor.

**ANSC 525  Topics in Nutrition Research**  credit: 1 hour.
Same as FSHN 510 and NUTR 510. See NUTR 510.

**ANSC 530  Advanced Endocrinology**  credit: 2 hours.
Same as MCB 512 and VB 512. See MCB 512.

**ANSC 531  Adv Reproductive Endocrinology**  credit: 3 hours.
The reproductive endocrinology of domestic and laboratory animals. Topics include neuroendocrinology; chemistry, metabolism, and action of hormones, regulation of gonadal function, endocrine changes during puberty, aging, pregnancy, and parturition, external factors affecting reproduction, infertility, and hormones and behavior. Same as MCB 531 and VB 531. Prerequisite: ANSC 431 or MCB 413.

**ANSC 533  Repro Physiology Lab Methods**  credit: 1 TO 3 hours.
Laboratory methods used in reproductive physiology studies, such as blood sampling, large animal surgery, collection of tissues and gametes, embryo recovery, in vitro fertilization, tissue culture, hormone measurements, and directed individual research problems. Same as MCB 533 and VB 533. Prerequisite: Consent of instructor.

**ANSC 541  Regression Analysis**  credit: 5 hours.
Same as CPSC 541. See CPSC 541.

**ANSC 542  Applied Bioinformatics**  credit: 4 hours.
Introduction to theoretical and applied aspects of bioinformatics. Topics include genomic and proteomic databases, sequence alignment and search algorithms (e.g., BLAST, FASTA, CLUSTAL W), predictive methods in DNA sequence, machine-learning techniques (e.g., Hidden Markov Models) and data mining, biomolecular structure and its prediction, molecular evolution and phylogenetic reconstruction, structural genomics and phylogenomics. Concepts are complemented with hands-on experience with computational biology databases and bioinformatic tools. Same as CPSC 569 and IB 506. Approved for both letter and S/U grading. Prerequisite: Graduate level status or consent of instructor.

**ANSC 543  Bioinformatics**  credit: 4 hours.
Same as CHBE 571, MCB 571, and STAT 530. See CHBE 571.

**ANSC 545  Statistical Genomics**  credit: 3 OR 4 hours.
This course presents current statistical approaches to analyze DNA microarray, quantitative trait loci and proteomic data and understand the genetic architecture of complex phenotypes including health, performance and behavior. DNA microarray studies measure the expression of thousands of genes simultaneously. Quantitative trait loci (QTL) mapping studies detect associations between genomic regions and phenotypes. Results from these and proteomic studies help identify and quantify genes, regulators and products leading to drug, biotechnology and scientific discoveries. Same as CPSC 545 and IB 507. Prerequisite: Graduate level course in Statistics and graduate level course in Molecular Biology.

**ANSC 554  Immunobiological Methods**  credit: 3 hours.
Same as PATH 544. See PATH 544.

**ANSC 561  Animal Stress Physiology**  credit: 2 hours.
Examines animal's physiological and behavioral adaptations to stress. Prerequisite: Consent of the instructor.

**ANSC 590  Animal Sciences Seminar**  credit: 0 TO 2 hours.
Discussions of current research and literature. Registration for 0 to 2 hours each term is expected for animal sciences graduate students. Approved for both letter and S/U grading. May be repeated to a maximum of 2 hours for Masters students and 4 hours for Ph.D. students.

**ANSC 592  Adv Topics in Animal Science**  credit: 1 TO 4 hours.
Selected topics associated with teaching, research, and production related to the animal industry. Prerequisite: Consent of instructor.

**ANSC 593  Res Studies in Animal Sciences**  credit: 1 TO 4 hours.
Directed and supervised study of selected research topics in Animal Sciences. Approved for both letter and S/U grading. May be repeated to a maximum of 4 hours. Prerequisite: Consent of instructor.

**ANSC 599  Thesis Research**  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
ANTH 102  Human Origins and Culture  credit: 4 hours.
Introduction to and survey of human origins and evolution, physical anthropology, race and racism, archaeology, and the beginning of human civilization. Recommended, though not required, to be taken with ANTH 103 as a survey of the field of anthropology.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ANTH 103  Anthro in a Changing World  credit: 3 hours.
Presents the fundamental areas of anthropological analysis through a series of comparative cases that emphasizes social and cultural relations in global contexts. Directs attention to the anthropological history of global empires and colonial states, their cultural exchanges, and contemporary studies of culture, society, and globalization. This course can be used to fulfill either Western or Nonwestern general education categories, but not both.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences
UIUC: Western Compartv Cult

ANTH 104  Talking Culture  credit: 3 hours.
Introduction to linguistic anthropology, focusing on the role of language in the creation and maintenance of society and culture and on a person's concept of self within that culture. Demonstrates how language use within a community can serve as the foundation for the analysis of cultural practices. Same as LING 104.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ANTH 105  World Archaeology  credit: 3 hours.
Using archaeological data, traces our prehistoric heritage and the processes which led to the evolution of agriculture, settled villages, and civilization in many areas of the world; lectures range from the earliest Homo sapiens to Sumeria, Egypt, Mexico, Peru, and the United States.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

ANTH 106  Hist Arch Americas  credit: 3 hours.
Explores recent theoretical, methodological, and thematic, developments in historical archaeology in North America and the Caribbean. The temporal coverage is 1500-1900 AD. Examines how historical archaeologists use artifactual, documentary and oral history evidence in interpreting the past, and how historical archaeology can contribute to our understanding of the ways by which material culture can be used to study race, class, gender, and ethnic identities.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

ANTH 107  Archaeology of Ancient Egypt  credit: 3 hours.
Survey of Egyptian archaeology from prehistoric times through the New Kingdom; includes lectures on modern archaeological techniques developed in Egypt to presentations on the history, life, gods, and architecture of this ancient civilization. Prerequisite: ANTH 102 is recommended.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

ANTH 108  Religion & Society in West I  credit: 3 hours.
Same as PHIL 108, RLST 108, and SOC 108. See RLST 108.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

ANTH 109  Religion & Society in West II  credit: 3 hours.
Same as PHIL 109, RLST 109, and SOC 109. See RLST 109.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

ANTH 130  History of South Asia  credit: 3 hours.
Same as HIST 130. See HIST 130.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

ANTH 143  Biology of Human Behavior  credit: 3 hours.
Critical consideration of data and information bearing on current controversies and ideas concerning the antecedents of selected aspects of human behavior. Topics to be discussed include communication; social organization; and parental, sexual, and aggressive behavior. Same as HDFS 143.
This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

ANTH 150  Novel Archaeology  credit: 3 hours.
Designed for non-anthropology majors; survey course of prehistory as seen through the eyes of novelists, science fiction writers, as well as visual media; covers 2 million years of prehistory examining what happened in the past as well as the interface between fact and fiction and past and present.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

ANTH 157  The Archaeology of Illinois  credit: 3 hours.
Traces the prehistory of Illinois from the first entry of people into the region more than 113,000 years ago until the 17th century and the beginning of historical records; examines subsequent cultural changes up to the 19th century and statehood from an archaeological and ethnohistorical perspective.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

ANTH 160  Contemporary Social Issues  credit: 3 hours.
Course considers how anthropological theory and methods enhance our understanding of contemporary social and political issues, including immigration, education, affirmative action, and welfare. It examines the relationship between social policy and social science knowledge, and the juxtapositioning of anthropological, policy, and other analytical approaches to contemporary issues. It assesses the strengths and limits of anthropological knowledge (its qualitative, ethnographic, and narrative character) for addressing these issues.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

ANTH 161  The Holocaust and Its Meanings  credit: 3 hours.
Survey of the Holocaust as a cultural symbol and crucial reference point for debates on morality, ethics and the lessons of history. Traces the Holocaust as a symbol in its historical and cross-cultural dimensions through text and film.
This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

ANTH 165  Lang & Culture Native North Am  credit: 3 hours.
Develops understanding of the rich diversity of languages and cultures found among Native North American peoples from the perspectives of sociocultural and linguistic anthropology. Same as AIS 165.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

ANTH 171  Evolution of Human Comm  credit: 3 hours.
Same as SHS 171. See SHS 171.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

ANTH 175  Archaeology and Pop Culture  credit: 3 hours.
Examines the ways in which the ancient past has been interpreted, appropriated, represented, used, and misused for a variety of reasons by political parties, national governments, and religious and ethnic groups living in the present.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

ANTH 180  The Archaeology of Death  credit: 3 hours.
Cross-cultural introduction to the celebration of death across time and space. Examines the anthropological and archaeological literature on death, particularly in terms of death ritual and burial practices. Students study popular films on death in different cultures, and carry out a field project at a local cemetery.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: Western Compartv Cult

ANTH 182  Latin American Cultures  credit: 4 hours.
Latin America considered as a theater of conflict and cultural experimentation among Native American, African, and Iberian peoples; their survival and transformation as reported in selected ethnographies and eyewitness sources; and some modern theories and controversies about their experience.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

ANTH 184  Asian American Cultures  credit: 3 hours.
Surveys the heterogeneity of contemporary Asian American communities. Explores the core concepts of "culture" and "social organization" through the variety of experiences in the family, churches, business establishments, schools, and other public institutions. Same as AAS 184 and SOC 124.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

ANTH 185  The Global Pacific  credit: 3 hours.
An introduction to the environment, history and cultures of the Pacific with special attention to transformations in lifeways as people, ideas and products flow into the islands from other world regions and flow out from Oceania to diasporic communities world wide.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

ANTH 190  American Jewish Culture  credit: 3 hours.
Examines American Jewish experience in its cultural and historical diversity. Introduces the approaches of cultural anthropology in order to investigate how an ethnic group has elaborated and continues to elaborate its identity in American culture and society through strategies of individual and collective behavior. In this way, American Jewish identities emerge as the products of specific interactions between Judaism's overarching cultural system and local American cultural formations.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

ANTH 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

ANTH 209  Food, Culture, and Society  credit: 3 hours.
Introduces basic anthropological and sociological methods, concepts and approaches to the study of the social and cultural dimensions of food. Explores issues including gender roles, religious influences, family relationships, community sharing, nationalist rituals and global processes in the production, distribution and consumption of food. Film, ethnographies, and other social science studies will be examined. Same as SOC 269.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ANTH 210  Comparative Family Org  credit: 3 hours.
ANTH 220  **Introduction to Archaeology**  credit: 3 hours.
Introduction to the problems of studying past cultures; special attention given to the ranges of techniques available and the adequacy of various methodologies as bases for sound inference about the structure of extinct cultures. Prerequisite: ANTH 102 or consent of instructor.

ANTH 221  **Materials and Civilization**  credit: 3 hours.
Introduction to the instrumental methods used to analyze archaeological and museum artifacts to solve questions of dating, authenticity, composition, provenience, and technology. Both organic and inorganic materials are considered in their cultural contexts, using examples from both Old and New World archaeology. Lecture/discussions are supplemented with visits to campus laboratories and museums.

ANTH 222  **Introduction to Modern Africa**  credit: 3 hours.
Same as AFST 222, PS 242, and SOC 222. See AFST 222.

ANTH 223  **Exploring African Cities**  credit: 3 hours.
Same as LA 220. See LA 220.

ANTH 224  **Tourist Cities and Sites**  credit: 3 hours.
Examination of tourism's social, political, economic, cultural and physical dimensions from an anthropological perspective.

ANTH 225  **Women in Prehistory**  credit: 3 hours.
Course identifies the presence of women in the archaeological record and seeks to reconstruct women's lives and roles in a range of ancient societies. It also considers the intellectual history of gender studies in archaeology and anthropology. Same as GWS 225.

ANTH 230  **Sociocultural Anthropology**  credit: 3 hours.
Introduction to the anthropological study of contemporary human societies; emphasis on the comparative study of social organization, interpersonal relations, cultural ecology, and processes of sociocultural change, but also includes some consideration of the method and theory of ethnological field research. Prerequisite: ANTH 103 or consent of instructor.

ANTH 240  **Biological Anthropology**  credit: 3 hours.
Past and present evolution of the human species and population and individual biological variation; topics include genetic principles relevant to human evolution, primate phylogeny and behavior, fossil evidence for human evolution, and the origin and significance of biological diversity in modern humans. Prerequisite: ANTH 102 or ANTH 143; or an introductory life sciences course; or consent of instructor.

ANTH 241  **Human Variation and Race**  credit: 3 hours.
Examines the biological concept of race as applied and misapplied to Homo sapiens by anthropologists and others from the 18th century to the present and of the origin, nature, and significance of so-called racial variation.

ANTH 242  **History of Human Evolution**  credit: 3 hours.
Reviews the history of evolution and its controversies from the pre-Darwinians to contemporary debates. Examines disciplinary and wider societal debates, and how they affect each other.

ANTH 243  **Sociality of the Great Apes**  credit: 3 hours.
Examines the social organization, mating patterns, and group structure of free-ranging chimpanzees, gorillas, and orangutans. Presents historical perspective focusing on misconceptions which have colored our understanding of ape social behavior; addresses questions concerned with learning potential, food sharing, social cooperation, aggressive behavior, self-awareness, and the appropriateness
of the apes as models for understanding human behavior. Prerequisite: ANTH 102, ANTH 143, or an equivalent course in animal behavior; or consent of instructor.

**ANTH 246 Human Remains and the Law**  credit: 3 hours.
Surveys forensic anthropology, the application of physical anthropology and ancillary biological sciences in the identification of human remains (or their traces) when standard means (e.g., fingerprints) fail. Readings will include case studies; students will be involved in data gathering and analyses. Credit is not given for both ANTH 246 and ANTH 456.

**ANTH 249 Evolution and Human Disease**  credit: 3 hours.
Principles of modern evolutionary theory are applied to medical problems. Topics include: transmission, pathogen strategies, symptoms and spectrum of disease, evolution of virulence, concept of cause, antimicrobial resistance, emerging diseases, stress and adaptation, nutrition, diachronic overview of changing patterns of human disease and ecological factors. Credit is not given for both this course and ANTH 279.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

**ANTH 257 Vienna 1900**  credit: 3 hours.
Same as GER 257 and HIST 257. See GER 257.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

**ANTH 258 Sex in Nature and Culture**  credit: 3 hours.
A simultaneous exploration of human sexuality from a biological and cultural perspective. Same as GWS 258.

**ANTH 259 Latina/o Cultures**  credit: 3 hours.
Introduction to the Spanish-speaking population of the United States, including demography, history, economics, and aspects of the sociocultural milieu; emphasis on Mexican-Americans and Puerto Ricans, although other Spanish-speaking groups are also considered. Same as LLS 259. Prerequisite: ANTH 103 or consent of instructor.

**ANTH 260 World Ethnography**  credit: 3 hours.
Study and criticism of ethnographic descriptions of exotic ways of life, both as scientific reporting and as a literary art form. Readings include examples from several major culture areas: Africa, the Americas, the Middle East, Oceania, southern and eastern Asia, and Western civilization. Prerequisite: ANTH 102, ANTH 103, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**ANTH 261 Intro to the African Diaspora**  credit: 3 hours.
Same as AFRO 261. See AFRO 261.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

**ANTH 262 Women's Lives**  credit: 3 hours.
Perceptions of women, their perceptions of themselves, and their varying roles and statuses in several contemporary societies in diverse countries; supervised ethnographic observation of women's behavior. Same as GWS 262.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**ANTH 265 Ethnicity in the USA**  credit: 3 hours.
Course examines the history and present day circumstances of a variety of U. S. ethnic groups. It uses the tools of ethnography and history to explore this complex topic. The first half of the course explores 18th and 19th century ethnicities by combining historical and ethnographic methods. The second half focuses on contemporary ethnic movements and theories about them. Prerequisite: ANTH 103.

**ANTH 266 African Film and Society**  credit: 3 hours.
Introduction to African cinema as a contemporary art form and as a window on the social and cultural realities of Africa. The course will include discussion of modern African culture, the African film industry, and African cinema as an art form and as popular entertainment. Same as AFST 266.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
ANTH 267  Memoirs of Africa  credit: 3 hours.

Course introduces Africa to students who have read little or nothing about the continent. The course will provide a "user-friendly" approach by offering engagingly written narratives of actual lives lived. The texts are a combination of memoirs written by Africans (about their childhood experiences growing up in various regions of Africa) and by non-African scholars and other authors (including but not limited to anthropologists) who have spent significant amounts of time on the continent. Same as AFST 267. Prerequisite: Completion of Campus Composition I general requirement.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Advanced Composition

ANTH 268  Images of the Other  credit: 3 hours.

Do all peoples view neighboring or distant populations as radically different "Others," or can humans create mutual images based on a notion of shared humanity? Course compares and analyzes the range of images of ethnic, "racial", gender, class and bodily differences that have been enacted historically and cross-culturally in both Western and non-Western populations. Prerequisite: A previous course in history and/or one of the social sciences would be helpful.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
UIUC: Advanced Composition

ANTH 270  Linguistic Anthropology  credit: 3 hours.

Introduction to linguistic anthropology as a major sub-discipline within the field of anthropology. Problems of elicitation and analysis of language as faced by anthropologists. The roles of language in the other major sub-disciplines: biological, archaeological, and social anthropology are explored. Credit is not given for both ANTH 270 and ANTH 271. Prerequisite: ANTH 103 or ANTH 104 or LING 100, or consent of instructor.

ANTH 271  Linguistic Anth-ACP  credit: 3 hours.

Course is identical to ANTH 270 except for the additional writing component. Credit is not given for both ANTH 271 and ANTH 270. Prerequisite: ANTH 103 or ANTH 104 or LING 100 or consent of instructor; completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ANTH 275  The World of Jewish Sepharad  credit: 3 hours.

Study of the cultural legacy and history of the Sephardic Jews, mostly focusing on the Mediterranean and the thriving communities they established in countries of Muslim governance and in the Balkans, and more recently in America. The Judeo-Spanish language, which has been preserved until the end of the twentieth century, the press, literature and music will be components of this course. Same as HIST 267 and RLST 275.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

ANTH 277  Ancient Cities, Sacred Land  credit: 3 hours.

Examine urban development from its origins to the present day. Among the concepts covered are urbanism, urbanization, ceremonial centers and ceremonial cities, the city as a system, the spatial and economic organization of cities, and the built environment (sacred landscapes, vernacular architecture, places of power). Small field project is conducted in Champaign-Urbana.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: Western Compartv Cult

ANTH 278  Climate Change & Civilization  credit: 3 hours.

Examination of how climate changes impacts society. With the increasing need to understand how climate changes and society intersect at present, it increasingly is becoming important that we address critical questions about how lessons from the past inform on present needs. Case studies from around the world are discussed.

ANTH 279  Culture and Human Health  credit: 3 hours.

Overview of health and illness in human societies emphasizing interactions among stress, adaptability, and culture. Case studies of differing cultural and ecological settings, past and present, and of differing health care systems are related to alternative theories of health and illness, including contemporary cosmopolitan medicine.
ANTH 280  **Personal Anthropology**  credit: 3 hours.
Anthropological approaches and methods related to the student's everyday life situation; explanation and use of ritual, ideology, myth, communication, media images, rites of passage, structure, symbols, and other concepts so that the student may develop a more critical understanding of contemporary American society and his or her position in it.

ANTH 282  **Displaced Peoples of Latin Am**  credit: 3 hours.
Contemporary African American and Indigenous American people of Latin America constitute dynamic cultures that extend across national borders. Taken together, these two diaspora aggregations of people, one displaced in the Americas, the other displaced from Africa and Europe, provide evidence of extraordinary cultural, social, and ethnic endurance in the face of radical and relentless change. Course combines information on both African-American and Native-American cultures in ethnographic and comparative perspectives. Same as AFRO 282. Prerequisite: ANTH 103 or ANTH 182 or ANTH 230, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

ANTH 284  **Adv Topics in Asian America**  credit: 3 hours.
Considers a number of theoretical and methodological topics in sociocultural anthropology through ethnographic writings on Asian America. Theoretical topics include transnationalism, colonialism, resistance, culture, race, and identity. Methodological topics include fieldwork, ethnographic writing (including the blurring of genres) and ethics. Same as AAS 284. Prerequisite: ANTH 184 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

ANTH 285  **Intro to Korea Through Film**  credit: 3 hours.
Same as EALC 285. See EALC 285.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

ANTH 286  **Southeast Asian Civilizations**  credit: 3 hours.
Overviews the cultural and institutional history of the Indianized states and Vietnam, with attention to dominant commercial, political, religious, artistic, and social traditions of Southeast Asia. Same as ASST 286 and HIST 225.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

ANTH 287  **Contemporary East Asia**  credit: 3 hours.
Same as EALC 288. See EALC 288.

ANTH 288  **American Indians of Illinois**  credit: 3 hours.
An interdisciplinary survey of the Native American experience in the Illinois region from pre-Columbian times to the present. Introduces theories, concepts and methods in archaeology, history, and sociocultural anthropology. Includes archaeological field site and museum visits, plus guest lectures by American Indian scholars and community members. Same as AIS 288 and HIST 288.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

ANTH 289  **Contemporary Southeast Asia**  credit: 3 hours.
Examination of the contemporary popular and urban cultures in Southeast Asia including religion, the arts, daily life, and mass media. Using ethnographies, film, and social science sources, the course focuses on how modern life in Southeast Asia is being created and lived.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

ANTH 290  **Jewish Cultures of the World**  credit: 3 hours.
Survey of the world's Jewish cultures with a particular focus on the non-Western world. Addresses the relations between Judaism and other religious systems and the nature of Jewish life in such locales as North Africa, Subsaharan Africa, India, China, and South America.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

ANTH 314 Intro to Museum Studies credit: 2 hours.
Introductory survey of museum studies, including curation, conservation, development and ethics. Prerequisite: Sophomore status. Preference given to students interested in museum career.

ANTH 315 Museum Studies Laboratory credit: 2 hours.
Introduction to the day-to-day functions of a museum. Weekly lecture and rotation through various areas of the Spurlock Museum provide a hands-on experience. Prerequisite: ANTH 314.

ANTH 326 Civilization in Ancient Peru credit: 3 hours.
Survey of the early inhabitants of Peru and emergence of complex society in pre-Inca era.

ANTH 342 Behavior-Genetic Analysis credit: 3 hours.
(ANTH 342) Same as IB 332, and PSYC 342. See PSYC 342.

ANTH 344 Anthropology of Play credit: 3 hours.
Same as KIN 344. See KIN 344.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ANTH 349 Forensic Anthropology credit: 3 OR 4 hours.
Examines current research and techniques in the application of physical anthropology to legal investigations, primarily in the identification of human skeletal material, but also in other characterization and identification of human remains and traces (e.g., footprints); also considers expert witness testimony and ethical issues in such application. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 456 or equivalent.

ANTH 358 People of the Ice Age credit: 3 hours.
Explores a vast period of human prehistory - 2 million to 10,000 years ago - before the first cities arose and before people domesticated plants and animals in the Old World; uses archaeological and paleoanthropological data to understand past life ways as well as reasons for change through time in human adaptation. Prerequisite: ANTH 102.

ANTH 359 Adv Topics in Latina/o US credit: 3 hours.
Theoretical and methodological perspectives on the construction of Latina/Latino identities in contemporary American society. Same as LLS 359.

This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

ANTH 362 Body, Personhood, and Culture credit: 3 hours.
Examines basic cultural assumptions about the human body and what it means to be a "person" in Western and non-Western societies. Addresses key themes in cultural anthropology and the social sciences concerning the relationship of the individual and society and of nature and culture.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ANTH 373 Culture & Psychology credit: 3 hours.
Same as PSYC 373. See PSYC 373.

ANTH 376 Aztec Civilization credit: 3 hours.
Detailed description and analysis of Aztec culture, society, and empire at c. 1500 AD, based primarily on ethnohistorical documentation. Topics covered include life cycle, family and society, political and economic organization, warfare, religion, and intellectual and aesthetic traditions. External relationships with neighboring peoples and the indigenous view of the Spanish conquest are considered. Prerequisite: ANTH 102, ANTH 103, or ANTH 105.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

ANTH 378 Plants and Their Uses credit: 3 hours.
Same as IB 363. See IB 363.

ANTH 379 Medical Anthropology credit: 3 hours.
Introduction to concepts and social aspects of health, illness, and curing in different cultures with consideration also of the interaction between folk and modern medicine in developing nations and the delivery of health care as an international social problem. Prerequisite: ANTH 230 or ANTH 260, or consent of instructor.

ANTH 380  Ethnography of the University  credit: 3 hours.
Introduces students to ethnographic research methods through research on the University of Illinois. Emphasizes qualitative research methods and institutional analysis. Student work builds on research done by prior students and student research is web archived. Reflection on and the reconfiguration of research questions and hypotheses is encouraged as research projects proceed. Prerequisite: Any 100-level or 200-level sociocultural anthropology course: ANTH 103, ANTH 104, ANTH 230 etc.

ANTH 390  Individual Study  credit: 2 TO 4 hours.
Supervised reading and research on anthropological topics chosen by the student with staff approval. Especially (but not exclusively) for students who are preparing for a summer field-work project, or who have some justifiable reason for doing independent study, but who do not qualify for the honors (departmental distinction) courses. May not be taken concurrently with ANTH 391 or ANTH 495. Prerequisite: Junior or senior standing; 12 hours in anthropology; consent of instructor.

ANTH 391  Honors Individual Study  credit: 2 TO 4 hours.
Individual study and research projects for those students who are candidates for departmental distinction in anthropology. May not be taken concurrently with ANTH 390. Prerequisite: Senior standing; 3.2 GPA in anthropology; consent of instructor.

ANTH 399  Special Topics  credit: 1 TO 3 hours.
Topics are given on a one-time only, experimental basis. Faculty offer special topics in their areas of expertise that provide an opportunity for undergraduates to be exposed to some of the most current developments in faculty research. May be repeated.

ANTH 400  Intro to Linguistic Structure  credit: 2 OR 3 hours.
Same as LING 400. See LING 400.

ANTH 401  Latin American Ethnobotany  credit: 3 OR 4 hours.
Same as HIST 409 and LAST 401. See LAST 401.

ANTH 402  Transnational Islam, Europe-US  credit: 3 OR 4 hours.
Anthropological approach to transnational Islam, focusing on its various expressions in Europe and the United States, particularly since World War II. Same as ASST 402 and RLST 409. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 230 or consent of instructor.

ANTH 403  Women in Muslim Societies  credit: 3 OR 4 hours.
Same as GLBL 403, GWS 403, and RLST 403. See RLST 403.

ANTH 404  Disability, Culture & Society  credit: 3 OR 4 hours.
Same as CHLH 407, KIN 407, and REHB 407. See CHLH 407.

ANTH 405  Contemporary Central America  credit: 3 OR 4 hours.
Explores cultural, political and historical processes in 20th- and 21st-century Central America--focusing on Costa Rica, Nicaragua, Honduras, El Salvador, and Guatemala--through an anthropological lens. Grapples with a core set of questions arising from changes in the global relations, including the rise of global neoliberalism, the crises and renovations of political projects, the transformations of spatial relations through transnational migration, and the proliferation of various pan-hemispheric as well as local identity-based movements. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 103 or ANTH 182 or ANTH 230 or a course in Latin American history or consent of instructor.

ANTH 406  Intro to Mathematical Ling  credit: 3 OR 4 hours.
Same as LING 407. See LING 407.

ANTH 407  GIS for Anthropologists  credit: 4 hours.
Hands-on laboratory introduction on the anthropological applications of geographical information systems (GIS); covering basic principles and exploring the potential applications of GIS in archaeological, biological, and cultural anthropological research. Topics include GIS database fundamentals, linking to non-spatial data; spatial analysis and inference; data sources. Prerequisite: An introductory course in applied statistics.

ANTH 408  Human Evolutionary Anatomy  credit: 3 OR 4 hours.
Comprehensive, comparative study of musculoskeletal anatomy in primates, focusing on functional and adaptive changes that have occurred in the masticatory apparatus, facial skeleton, and locomotor systems of New World monkeys, Old World monkeys, apes, and humans. Relationships between morphology, ecology, and behavior are discussed, applied to the fossil record, and used to address
current issues in human evolution. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 443 or ANTH 440 or ANTH 456 or a course in human or comparative vertebrate anatomy.

ANTH 409  Human Evolutionary Anatomy Lab  credit: 3 OR 4 hours.
Comparative detailed dissections of craniofacial, locomotor, neural, and alimentary systems in nonhuman primates, to understand the anatomical bases of human evolution. 3 undergraduate hours. 4 graduate hours. Prerequisite: Credit or concurrent registration in ANTH 408.

ANTH 410  Research Design in Anth  credit: 3 OR 4 hours.
Examines the design of anthropological research; covers the philosophical basis of research design, different approaches to framing questions and designing research, sampling, questionnaire design, data collection techniques, research ethics, coding, and general problems of measuring quantitative and qualitative data. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 220, ANTH 230, ANTH 240, ANTH 270, or ANTH 271 and a course in statistics; or consent of instructor.

ANTH 411  Methods of Cultural Anth  credit: 3 OR 4 hours.
Major philosophical, theoretical, and methodological issues that arise in conducting cultural-oriented anthropological field work today; application of class knowledge to an actual field experience; emphasis on field work as a reflexive experience and as a mutually creative and frustrating endeavor. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 230 or graduate standing.

ANTH 412  Quantitative Analysis in Anth  credit: 4 hours.
Examines strategies for the discovery and exploration of patterning in quantitative anthropological data. Emphasis on the philosophy of data analysis, exploratory and computer-intensive methods, and hands-on application to the analysis and interpretation of real data sets collected by the students. Prerequisite: ANTH 410 or consent of instructor.

ANTH 413  Qualitative Analysis in Anth  credit: 4 hours.
Examines strategies for the exploration and analysis of anthropological data in the form of words and documents. Emphasizes the hands-on application of these strategies to the analysis and interpretation of real data sets collected by the students. Covers data reduction; text management and retrieval; coding; within-, between-, and cross-case analyses; data matrices; critical analysis of anthropological documents; content analysis; validity and reliability issues; and the preparation of research reports. Prerequisite: ANTH 410.

ANTH 414  Writing Ethnography  credit: 3 OR 4 hours.
Many scholars now question the unbroachable theoretical divide between the humanities and the social sciences, the unique authority of the scholar/author, and the invisibility of the reader in producing scholarly texts. Focusing on the ways in which scholars are also authors, we explore current debates by reading a selection of contemporary anthropological texts (and some prescient precursors) that boldly experiment with how ethnography is written. Students will try their hand at experimenting with several ethnographic writing styles themselves. 3 undergraduate hours. 4 graduate hours. Prerequisite: This course is especially designed for undergraduate students who have already taken at least one 300-level course in cultural anthropology, and graduate students in cultural anthropology, writing studies, and education. Other students should contact the instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ANTH 416  Anthropology of Music  credit: 3 hours.
Same as MUS 416. See MUS 416.

ANTH 417  Area Studies Ethnomusicology  credit: 3 hours.
Same as MUS 417. See MUS 417.

ANTH 421  Social Organization  credit: 3 OR 4 hours.
Introduction to anthropological concepts of social organization and structure; considers kinship theory, descent and alliance systems, social stratification, nonkin association, social networks, group identification and boundaries, structural-functional interpretations of society, and the meaning of social or cultural structure. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 230 or consent of instructor.

ANTH 423  Economic Anthropology  credit: 3 OR 4 hours.
Covers the emergence of economic anthropology as a subdiscipline; considers various definitions of economics with their implications for the study of human society; emphasizes the relationship between social organization and economic life from the perspectives of classical studies in anthropology and their contemporary interpretations. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 230.

ANTH 425  Anthropology of Education  credit: 2 OR 4 hours.
Same as EPS 425 and EPSY 466. See EPS 425.
ANTH 430  The History of Anthropology  credit: 4 hours.
Provides a selective overview of the history and historiography of anthropology in the 19th and 20th centuries. The class moves chronologically and topically, paying particular attention to the social, institutional, and historical contexts of paradigmatic shifts, the interconnections between various national traditions, and the negotiations of the discipline's boundaries. Prerequisite: Graduate or senior standing in anthropology, or consent of instructor.

ANTH 431  History of Bioanthropology  credit: 3 OR 4 hours.
Surveys the histories of ideas in biological anthropology, with a focus on the development of the field in the U.S. Examination of the foundations of contemporary theory, placing these ideas into historical and societal context. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 102, ANTH 240, ANTH 242, ANTH 243 or equivalent.

ANTH 432  Genes and Behavior  credit: 3 hours.
Same as IB 432, NEUR 432, and PSYC 432. See IB 432.

ANTH 433  Conservation Ecosystem Health  credit: 1 OR 2 hours.
Same as PATH 640. See PATH 640.

ANTH 434  Comparative Anatomy  credit: 5 hours.
Same as IB 433. See IB 433.

ANTH 437  Primate Behav Endocrinology  credit: 3 OR 4 hours.
Introduction to the field of behavioral endocrinology, with particular focus on primate, especially human behaviors. Examination of the relationship between hormones and behavior using an evolutionary and comparative approach and consider both how hormones influences behavior as well as how behavioral interactions regulate endocrine physiology. The early part of the course covers basic endocrine system physiology and function, then focuses on hormonal influences on primate social behaviors, such as male and female reproductive behaviors, courtship, parental care, bonding and attachment, as well as aggression and territoriality. Other topics include stress, hormones, and health. Same as IB 437. 3 undergraduate hours. 4 graduate hours. Prerequisite: IB 150 and ANTH 143; or an equivalent course in behavioral ecology, primate behavior, physiology or psychology; or consent of instructor.

ANTH 438  Primate Life History Evolution  credit: 3 OR 4 hours.
Life history seeks to explain why differences exist in the pathways that organisms follow from conception to death. Examination of the diversity in the evolution of primate (including human) life histories. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 102, ANTH 143, ANTH 240, ANTH 243 or equivalent.

ANTH 440  Human Paleontology  credit: 3 OR 4 hours.
Principles of evolution and a survey of human evolution from the early primates through the Pleistocene epoch; emphasis on evolutionary theory as applied to humans and interpretation of the fossil record. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 220 or an introductory life sciences course, or consent of instructor.

ANTH 441  Human Genetics  credit: 3 OR 4 hours.
Principles of human genetics; anthropological aspects of race and race formation; and hereditary and environmental factors in the biological variation of modern humansSame as ANSC 441. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 102 or equivalent.

ANTH 442  Animal Behavior  credit: 3 hours.
Same as ANSC 466 and IB 429. See IB 429.

ANTH 443  Primate Form and Behavior  credit: 3 OR 4 hours.
Survey of primate social behavior and the classification, morphology, and distribution of living and extinct species; emphasis on interrelationships among behavior, biology, and ecology. Same as IB 428. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 240 or consent of instructor.

ANTH 444  Methods in Bioanthropology  credit: 3 OR 4 hours.
Supervised participation in biological anthropology research projects; techniques, methods, and procedures discussed and practiced under actual field or laboratory working conditions. Normally taken concurrently with ANTH 445. 3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Usually offered in the summer session only. Prerequisite: ANTH 240 or equivalent; consent of instructor.

ANTH 445  Research in Bioanthropology  credit: 3 OR 4 hours.
Analysis, interpretation, evaluation, and organization of field and laboratory data in biological anthropology; preparation of written reports on research. May be taken concurrently with ANTH 444 or subsequently. 3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Usually offered in the summer session only. Prerequisite: ANTH 240 or equivalent; consent of instructor.
ANTH 446  **Behavioral Inference & Fossils**  credit: 3 OR 4 hours.
Theories and methods for interpreting behaviors inferred from the human and primate fossil record. Topics include discussions of
adaptation, methods of inference in historical sciences, and practical experimental approaches to understanding aspects of diet,
locomotor behavior and social organization in species known only from the fossil record. Same as IB 403. 3 undergraduate hours. 4
graduate hours. Prerequisite: ANTH 240.

ANTH 447  **Hunters and Gatherers**  credit: 3 OR 4 hours.
Considers lifeways of Hunters & Gatherers both in the ethnographic and archaeological records. It focuses on the disparate natures of
the two data bases, reviews the theoretical literature treating the utility and limitations of ethnographic analogy, and examines a series
of components of life in these simpler societies (e.g. subsistence, settlement, social organization, ideology, etc.). 3 undergraduate
hours. 4 graduate hours. Prerequisite: ANTH 220 and ANTH 230.

ANTH 448  **The Prehistory of Africa**  credit: 3 OR 4 hours.
The study of cultural development in Africa from the appearance of hominids to the time of European domination. 3 undergraduate
hours. 3 or 4 graduate hours. Prerequisite: ANTH 220 or consent of instructor.

ANTH 449  **North American Archeology**  credit: 3 OR 4 hours.
Methods, techniques, and results of archaeology in North America; focuses on divergent approaches to the regional archaeology of
North America; and surveys and synthesizes the archaeology of the subcontinent. 3 undergraduate hours. 3 or 4 graduate hours.
Prerequisite: ANTH 220 or consent of instructor.

ANTH 450  **Prehistory of Europe**  credit: 3 OR 4 hours.
The study of cultural development of Europe from initial colonization to the establishment of farming communities in the Neolithic. 3
undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 102, ANTH 103, and ANTH 220, or consent of instructor.

ANTH 451  **Archaeological Surveying**  credit: 3 OR 4 hours.
Familiarization with methods used in the location and recording of archaeological sites, including techniques of mapping especially
adapted to the needs of archaeology; attention given to means of presenting results and interpreting data derived from this work; and
work both in the field and in the laboratory. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 220 or consent of instructor.

ANTH 452  **Stone Tool Technology Analysis**  credit: 3 OR 4 hours.
Lecture and laboratory on the principles and techniques of stone and bone artifact manufacture, identification, classification, metrical
analysis, interpretation, and integration with other classes of archaeological evidence. Emphasis on the use of lithics to test human
behavioral models. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 220.

ANTH 453  **Landscape Archaeology**  credit: 3 OR 4 hours.
The use of archaeological, documentary, and oral history evidence to study and interpret the ways past peoples shaped their
landscapes through the deployment of cultural and social practices, and the ways, in turn, that such people were influenced, motivated,
or constrained by their natural surroundings. Same as LA 454. 3 undergraduate hours. 4 graduate hours. Prerequisite: Introductory
archaeology course, such as ANTH 220, or introductory landscape architecture course, such as LA 215, and a 300 level course in
socio-cultural anthropology or archaeology, or equivalent with instructor's permission.

ANTH 454  **Archaeological Field School**  credit: 3 OR 4 hours.
Participation in archaeological excavations; techniques, methods, and procedures discussed and practiced under actual working
conditions. Normally taken concurrently with ANTH 455. 3 undergraduate hours. 4 graduate hours. May be repeated if topics vary.
Usually offered in the summer session only. Prerequisite: Consent of instructor.

ANTH 455  **Lab Analysis in Archaeology**  credit: 3 OR 4 hours.
Laboratory work including processing, classifying, dating, interpretation, evaluation, and preparation of written reports of archaeological
research. May be taken concurrently with ANTH 454 or subsequently. 3 undergraduate hours. 4 graduate hours. May be repeated if
topics vary. Prerequisite: ANTH 102 or consent of instructor.

ANTH 456  **Human Osteology**  credit: 3 OR 4 hours.
Identification of human skeletal material and basic techniques of measurement; methods of determining age, sex, race, and stature
from the human skeleton; and analysis of skeletal populations. 3 undergraduate hours. 4 graduate hours. Credit is not given for both
ANTH 456 and ANTH 246. Prerequisite: ANTH 102 or a course in anatomy, physiology, or introductory life sciences and consent of
instructor.

ANTH 458  **Archaeozoology**  credit: 4 hours.
Introduces students to the use of faunal remains as they pertain to archaeological research programs. Presents and critically assesses
a number of approaches to the analysis of faunal remains as to their usefulness to particular research designs. Prerequisite: Open to
Anthropology majors with senior or graduate standing.
ANTH 459  **The Ancient Maya**  credit: 3 hours.
Introduction to the Ancient Maya of Mexico, Guatemala, Belize, and Honduras. Evaluates theories that account for the rise and fall of Classic (c. A.D. 250-950) Maya rulership. Excavation data, iconography, and inscriptions are used to reconstruct political and social organization, ideology, subsistence activities, and inter-regional interactions. Prerequisite: ANTH 105.

ANTH 460  **Heritage Management**  credit: 3 OR 4 hours.
Detailed examination of the theoretical and practical issues of archaeological heritage management. Focusing on the legal, environmental, ethical, social, political, educational, and touristic aspects of the management of ancient sites for their continued sustainability. Same as LA 460. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 220 and at least one ANTH 300- or 400-level archaeological area course.

ANTH 461  **Hist of Archaeological Theory**  credit: 3 OR 4 hours.
Examines the prominent theories in archaeology from its inception to the present day and does so within the context of general developments in anthropological thought. Provides a foundation for graduate students and a capstone for major emphasizing archaeology. 3 undergraduate hours. 4 graduate hours. Prerequisite: For undergraduates: ANTH 220; anthropology major with focus on archaeology; senior standing or consent of the instructor. For graduate students: enrollment in ANTH 430 during the same term advised.

ANTH 462  **Museum Theory and Practice**  credit: 3 OR 4 hours.
A foundational introduction to museology consisting of a critical examination of the history and social life of museums and how museums have been studied by scholars in a range of academic disciplines. Includes visits to campus and local museums. Same as ARTH 462 and LA 472. 3 undergraduate hours. 4 graduate hours.

ANTH 463  **Religion and Society**  credit: 4 hours.
Course focuses on theoretical issues raised by religion. Does religion address itself essentially to intellectual, emotional or pragmatic issues? Is religion created by rulers, clerics or worshippers? How does the individual experience religion, and (how) can s/he reshape it? In exploring these and related issues, we will read the writings of German, French, and British social scientists of the past 150 years as well as work by contemporary anthropologists. Theoretical perspectives covered include symbolic, processual, materialist, structural-functionalist, structuralist, and postmodernist approaches. Same as RLST 463. Prerequisite: A 200-level course in cultural anthropology or consent of instructor; or graduate standing.

ANTH 464  **Ethnography of Local Cultures**  credit: 4 hours.
Same as EPSY 465 and SOC 482. See EPSY 465.

ANTH 465  **Oceania's Peoples and Cultures**  credit: 3 OR 4 hours.
Survey of the Pacific Islands; regional geography, human ecology, culture history, and ethnography of Melanesia, New Guinea, Polynesia, New Zealand, Micronesia, and Australia; and some consideration of Pacific ethnohistory and the role of Oceania in the modern world. Same as ASST 465. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 102 and ANTH 103, or consent of instructor.

ANTH 466  **Class, Culture and Society**  credit: 4 hours.
Social hierarchies in a variety of cultural contexts; industrial societies and the process of industrialization; looks at other social forms for the purposes of comparison. A variety of social theories will be discussed and compared through ethnographic studies. Prerequisite: ANTH 103 and ANTH 230 or graduate standing.

ANTH 467  **Cultures of Africa**  credit: 3 OR 4 hours.
Culture and social organization in traditional African societies with emphasis on the politics, kinship, and religion of a small sample of societies illustrating the main cultural variations found in sub-Saharan Africa; some discussion of ecological factors and ethnic group relations in precolonial times. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 230 or consent of instructor.

ANTH 468  **Religions of Africa**  credit: 3 OR 4 hours.
Course will consider religious acts, beliefs and experiences in Africa as they relate to politics, cosmology, social structure, gender norms and markers, aesthetics and performance, and illness and healing, among other factors. Religious traditions that first originated in sub-Saharan Africa will be emphasized, but some consideration will also be given to local African experiences of Christianity and Islam. Same as RLST 468. 3 undergraduate hours. 4 graduate hours. Prerequisite: At least one previous course in either Cultural Anthropology, Religious Studies or African Studies; or consent of instructor.

ANTH 469  **Kinship-Culture-Power-Africa**  credit: 2 OR 4 hours.
To present the classic approaches to kinship in anthropology that were developed for Africa; to explore the variety of kinship arrangements and strategies that exist in Africa; and to expose students to the panoply of contemporary critiques of classic works on kinship in Africa, and contemporary alternatives to them. Same as AFST 467. Prerequisite: For students outside anthropology or African Studies, at least one previous course in cultural anthropology is strongly recommended.
ANTH 470  Mind, Culture and Society  credit: 3 OR 4 hours.
Introduces students to the field of cognitive anthropology and its relation to cognitive science. Language and the application of linguistic methods to problems in the social and cognitive sciences are emphasized and also the relevance of the ethnographic method to cognitive science in general. Visual and kinesthetic dimensions of knowledge are also explored. Same as LING 470 and MS 470. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 230, or one course in communications or linguistics, or consent of instructor.

ANTH 471  Ethnography through Language  credit: 3 OR 4 hours.
Overview of theoretical perspectives and methodologies in linguistic anthropology, including sociolinguistics, ethnography of communication, performance and poetics, discursive practices, and structural analyses. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 230 or ANTH 270 and preferably both.

ANTH 472  Border Latina, Latino Cultures  credit: 3 OR 4 hours.
Explores and examines the production of U. S. Latina/Latino identities as instances of international, cultural, historical, and social border crossings. In both regional and global contexts, we will analyze the ways in which Mexican American, Cuban American and Puerto Rican identities have been shaped by colonial relations vis-a-vis Spain and by postcolonial conditions vis-a-vis the United States. Same as LLS 472. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 103, and ANTH 259 or ANTH 359.

ANTH 473  Museums and Communities  credit: 3 OR 4 hours.
Examination of museums and members of ethnographic source communities, and the development of new curatorial practices that incorporate source community needs and views. 3 undergraduate hours. 4 graduate hours.

ANTH 474  Archaeology Imagery & Symbol  credit: 3 OR 4 hours.
Comparative analysis of the iconographic (symbolic) content of elite art and architecture of precolumbian Mesoamerican societies. Emphasis is placed on describing and interpreting basic shared features of cosmology and the ideological aspects of social and political systems discerned from surviving artworks. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 102 or ANTH 105 or consent of instructor.

ANTH 475  The Archaeology of Mexico  credit: 3 OR 4 hours.
Discusses the ancient cultures and civilizations of Mexico as reconstructed from archaeological data; begins with the earliest evidence of human occupation and traces the development of agricultural societies and ultimately large urban civilizations to c. 1300 A.D. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 105 or ANTH 220; or consent of instructor.

ANTH 476  Mayan and Aztec Archaeology  credit: 3 OR 4 hours.
Discusses and analyzes the archaeological data related to two important indigenous Mesoamerican civilizations, the Maya and Aztecs. Major topics considered include interpretations of political and social organization, subsistence systems, religion, and writing systems. Problems in correlating archaeology and ethnohistory are also examined. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 220 and ANTH 475.

ANTH 477  Pottery Analysis  credit: 3 OR 4 hours.
Introduction to the theories and techniques of pottery analysis for archaeologists. In addition to presentation and discussion of the major literature, there is hands-on practice making, drawing, breaking and analyzing pottery. 3 undergraduate hours. 4 graduate hours. Prerequisite: Either ANTH 220, ANTH 475, or ANTH 476, or consent of instructor.

ANTH 479  Race, Medicine, and Society  credit: 3 OR 4 hours.
Same as AAS 479 and LLS 479. See LLS 479.

ANTH 480  Intrepretive Anthropology  credit: 4 hours.
Focus on recent developments in symbolic and interpretive anthropology; topics covered include writing the ethnographic text, subject-object relations, critical reflection on fieldwork, construction of the self, dialogism, practice, performance, narrative, power, and representation. Prerequisite: ANTH 421 and ANTH 463, or similar courses in anthropology, the social sciences, or the humanities, and consent of instructor.

ANTH 481  Andean Ethnography  credit: 3 OR 4 hours.
Survey of Andean cultures at the time of the Spanish conquest, of their subsequent history, and of modern Indian culture in the Andean countries. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 182, ANTH 230 or consent of instructor.

ANTH 484  Asian Diasporas  credit: 3 OR 4 hours.
Comparative study of Asian diasporic communities in various world regions through ethnography. Introduces concepts of transnationalism, globalization, and modernity in relation to Asian migration in contemporary times. Same as AAS 484. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 184 or ANTH 284 or consent of instructor.

ANTH 486  Peoples of Mainland SE Asia  credit: 3 OR 4 hours.
Culture, cultural history, and social systems of mainland Southeast Asia: Burma, Thailand, Cambodia, Vietnam, Laos, Assam Hills, upland southwestern China, and Malaya; emphasis on the interaction of complementary ethnic types in the context of local ecology and the Hindu-Buddhist systems of religion and politics of the lowland states. Same as ASST 486. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 220 or ANTH 230, or consent of instructor.

ANTH 487  **Ethnicity in China**  credit: 3 OR 4 hours.
Explores ethnic diversity and ethnic relations in China. Topics include the multi-ethnic history of Chinese society, communist and Western theories on nationality and ethnicity, the state and ethnicity, ethnic conflict and political economy, gender and ethnic hierarchy. Same as EALC 487. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 485 or consent of instructor.

ANTH 488  **Modern Europe**  credit: 4 hours.
Historical studies which deploy anthropological methods in the study of early modern and modern Europe; looks at processes of twentieth century modernization through ethnographic studies. Western, Central and Eastern Europe will all receive attention, but the study of Western Europe will predominate. Prerequisite: ANTH 103 and ANTH 230 or three history courses or graduate standing.

ANTH 489  **The Ethnography of Korea**  credit: 3 OR 4 hours.
Same as EALC 469. See EALC 469.

ANTH 494  **Human Paleopathology**  credit: 3 OR 4 hours.
Comprehensive study of the evidence of human disease in antiquity, emphasizing diagnosis of skeletal pathologies, and the anthropological interpretation of historic and prehistoric disease patterns. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 456, a course in human anatomy, or equivalent.

ANTH 495  **Honors Senior Thesis**  credit: 2 TO 4 hours.
Preparation and completion of a senior honors thesis, research paper, or equivalent project for those students who are candidates for high or highest departmental distinction in anthropology. 2 to 4 undergraduate hours. No graduate credit. May not be taken concurrently with ANTH 390. Prerequisite: Senior standing; 3.2 grade-point average in anthropology; consent of instructor.

ANTH 496  **Individual Field Research**  credit: 3 OR 4 hours.
Supervised participation in field research in ethnography, ethnology, linguistics, or social anthropology; techniques, methods, and procedures discussed and practiced under actual working conditions. 3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Usually offered in the summer session only. Prerequisite: ANTH 230 or ANTH 400; some knowledge of the language of the area concerned; consent of instructor. Normally taken concurrently with ANTH 497.

ANTH 497  **Individual Field Data Analysis**  credit: 3 OR 4 hours.
Analysis, interpretation, evaluation, and organization of field data in cultural anthropology; preparation of written reports on research in ethnography, ethnology, linguistics, or social anthropology. May be taken concurrently with ANTH 496 or subsequently. 3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Prerequisite: ANTH 230 or ANTH 400; some knowledge of the language of the area concerned; consent of instructor.

ANTH 498  **Senior Seminar**  credit: 3 hours.
Each seminar considers a topic or issue of current interest in anthropology. 3 undergraduate hours. May be repeated to a maximum of 6 hours if topics vary. Prerequisite: ANTH 102 and ANTH 103, two additional anthropology courses, a grade-point average of 3.25 in anthropology courses, and consent of instructor.

ANTH 499  **Topics in Anthropology**  credit: 4 hours.
Research seminar on specialized topics in anthropology. May be repeated. Prerequisite: Consent of instructor.

ANTH 502  **Ethnicity and Nationalism**  credit: 2 OR 4 hours.
Examines ethnic and national identities, their interactions, and the implications for them and of them within increasingly translocal, transnational, and global historical contexts. 2 or 4 graduate hours.

ANTH 504  **Colonialism & Postcolonialism**  credit: 4 hours.
Course examines the history of colonialism and post-colonialism in anthropological perspective. The relations of history and anthropology are explored through ethnographic studies which problematize historical memory. Theoretical works of colonized people will be debated and discussed. Same as HIST 519. Prerequisite: Graduate standing.

ANTH 505  **Global Modernities**  credit: 4 hours.
Examines the notion of “alternative” modernities: is “modernity” always imitative of the West, or under globalization does it emerge independently in local cultures? Does it obliterate local “tradition”, or can it function as site of creativity and resistance? What are its implications for anthropological fieldwork methods and writing styles? Prerequisite: Graduate standing or consent of instructor.

ANTH 508  **Feminism, Gender and Sexuality**  credit: 4 hours.
Theoretical issues raised in recent feminist writings in anthropology. Theoretical approaches to be explored include constructionist, postmodern, textual and historical materialist perspectives. Selected contemporary ethnographies introduce the integration of feminist theory into data analysis. Same as GWS 508. Prerequisite: Graduate standing or consent of instructor.

ANTH 511  
Research Proposal Seminar  
credit: 4 hours.

This seminar guides graduate students in designing a doctoral research project and writing a grant proposal. Focus is on developing a cogent theoretical framework, articulating significance of the project, identifying appropriate research methods, and considering ethical issues. Seminar format allows regular feedback from peers to clarify and hone ideas. Prerequisite: Graduate standing in anthropology or consent of instructor.

ANTH 512  
Language and Culture  
credit: 4 hours.

Explores theories and methods of linguistic anthropology with special attention to the relationship between language and culture. Examines the historical development of the field and its debates and develops analytical skills needed in contemporary research. Same as LING 512. Approved for both letter and S/U grading. Prerequisite: Graduate standing.

ANTH 513  
Formal Analysis of Kinship  
credit: 2 OR 4 hours.

Survey of a variety of the world's systems of kinship, marriage, and family organization; concentration on the distinctive properties of kinship systems as a species of social structure, on the formal apparatus for describing and understanding them and their functions, and on the theory of kinship that arises from the use of such formal apparatus. Prerequisite: Consent of instructor.

ANTH 514  
Seminar in Cognitive Science  
credit: 2 OR 4 hours.

Same as PSYC 514, CS 549, EPSY 551, LING 570, PHIL 514. See PSYC 514.

ANTH 515  
Seminar in Anthropology  
credit: 2 OR 4 hours.

Analysis of selected topics of special interest in anthropology. May be repeated to a maximum of 8 hours in the same or subsequent semesters.

ANTH 516  
History and Anthropology  
credit: 4 hours.

Seminar oriented to current research problems in anthropological applications of ethnohistory, designed to acquaint students with theoretical and methodological issues and principal documentary sources for a specific world area. Students will undertake a major project analyzing documents. May be repeated in the same or separate terms to a maximum of 8 hours. Prerequisite: Consent of instructor.

ANTH 517  
Anthro Approach to Memory  
credit: 4 hours.

Examines individual memory, the construction of memories in collective practice, and the orchestration of memory in social institutions such as museums and ritual. Reflects critically on primary sources, to integrate theory and ethnography and to compare alternative approaches. Approved for both letter and S/U grading. Prerequisite: Graduate standing.

ANTH 518  
Discourse Centered Approaches  
credit: 4 hours.

Combines critical examination of theories with methods of transcription and analysis to prepare students for linguistically informed ethnographic field research. Develops a reflexive awareness of language-in-use, plus a historically situated familiarity with Western theories of language. Emphasis on how spoken/written discourse and related semiotic practices (bodily communication, visual images) constitute the primary elements of socio-cultural practice--the means by which social action, cultural knowledge and social institutions are achieved, maintained and enacted. Provides opportunities to apply analytic frameworks learned in the course to students own research interests. Prerequisite: ANTH 270 or similar, introduction linguistics course, or consent of instructor.

ANTH 523  
Dynamic Embodiment  
credit: 4 hours.

Examines anthropological theories and methods for understanding systems of body movement and performance in cultural contexts. Explores the study of everyday skills as well as the expressive complexities of dances, gestural systems, sacred and secular ritual, sign languages, sports, theater, and martial arts. Prerequisite: Graduate standing.

ANTH 532  
Dissertation Writing Seminar  
credit: 4 hours.

Through reading style handbooks, theoretical works on the nature of writing, and published dissertations in anthropology, as well as completing specific dissertation writing assignments, this course provides a forum for advanced doctoral students to outline and complete substantial work on their doctoral thesis. The class format is a workshop in which every student circulates dissertation chapters for discussion by the instructor and other class members. Prerequisite: Students must have completed all requirements for the Ph.D. in anthropology but the dissertation, and they must have completed their doctoral fieldwork.

ANTH 540  
Seminar in Bioanthropology  
credit: 4 hours.

Seminar designed to involve students in the theoretical and methodological approaches to problem areas in physical anthropology. May be repeated. Prerequisite: ANTH 440, ANTH 441, or ANTH 443; consent of instructor.

ANTH 541  
Ontogeny and Phylogeny  
credit: 4 hours.
Investigation of how ontogeny (growth and development) relates to phylogeny (evolutionary change) across the course of human evolution. Focuses on the exceptional nature of human size and shape development and its evolution, with particular attention to the evolution of the human skull and brain. Prerequisite: ANTH 102, ANTH 240, ANTH 440 or equivalent.

ANTH 543  Seminar in Primate Ecology  credit: 2 OR 4 hours.
Group discussions and individual presentations of research reports and problems in fields of primate ethology, ecology, evolution, and related subjects; topics vary each term. Same as IB 543. May be repeated. Prerequisite: Consent of instructor.

ANTH 552  Res Prob in Archaeology  credit: 4 hours.
Seminars oriented to current research problems in archaeology, designed to acquaint students with theoretical and methodological aspects of particular problems and to develop a critical perspective of archaeological research. May be repeated. Prerequisite: Consent of instructor.

ANTH 555  The Archaeology of Complexity  credit: 4 hours.
Examines patterns of behavior archaeologists associate with complex societies and seeks to understand if and how these behaviors generate and/or reflect cultural complexity; theoretical literature and case studies discussed. Major topics include chiefdoms, settlement pattern analysis, and ideology. Prerequisite: Graduate student standing.

ANTH 557  Social Construction of Space  credit: 4 hours.
Consideration of anthropological, archaeological, and related disciplinary perspectives on space, place, landscape, the built environment, and architecture. Coursework encompasses critical review of major theoretical literature and case studies of ancient and modern societies. Same as LA 562. Prerequisite: Consent of instructor.

ANTH 558  Central Andean Archaeology  credit: 4 hours.
The rise of the Inca Empire, its culture and art. The societies conquered by the Incas are also studied. Prerequisite: ANTH 220, or ANTH 449, ANTH 475, or ANTH 476 or consent of instructor.

ANTH 559  Bioanthropological Theory  credit: 4 hours.
ANTH 560  Anthropology and Law  credit: 3 OR 4 hours.
Introduction to the field of legal anthropology. Addresses anthropological theories of the nature of law and disputes, examines related studies of legal structures in non-Western cultures, and considers the uses of anthropology in studying facets of our own legal system. Same as LAW 678. 3 professional hours. 4 graduate hours. Prerequisite: Consent of instructor.

ANTH 561  Archaeological Theory  credit: 4 hours.
Contemporary theory in archaeology. Different theoretical approaches are examined by critically analyzing the seminal literature within the contexts of paradigmatic shifts in archaeology and general developments in the discipline of anthropology. Focus on materiality and corporeality. Prerequisite: ANTH 461 or consent of instructor.

ANTH 562  Archaeology and Racialization  credit: 4 hours.
Study of theories and methods for archaeological and historical analysis of processes of racialization in past societies. Subjects include the interrelation of racializing ideologies with other cultural and social dimensions, such as class, ethnicity, gender, political and legal structures, and economic influences. Same as AFRO 562. Prerequisite: Consent of instructor.

ANTH 563  Ritual, Power and Social Life  credit: 4 hours.
Systematic examination of the relationship between power structure and ritual by reference to anthropological theory and through consideration of select ethnographies; social stratification, social networks cultural symbolism, and ethnicity. Prerequisite: Consent of instructor.

ANTH 565  Race and Cultural Critique  credit: 4 hours.
Same as AAS 561, AFRO 531, GWS 561, and LLS 561. See AAS 561.

ANTH 575  Leisure and Culture  credit: 4 hours.
Same as KIN 575 and RST 575. See RST 575.

ANTH 589  Readings in Anthropology  credit: 2 OR 4 hours.
Individual guidance in intensive readings in the literature of one or more subdivisions of the field of anthropology, selected in consultation with the adviser in accordance with the needs and interest of the student. May be repeated in the same or separate semesters as topics vary. Prerequisite: One semester of graduate work in anthropology; consent of adviser.

ANTH 590  Dissertation Readings  credit: 4 TO 16 hours.
Supervised individual investigation or study of a topic not covered by regular courses. The topic selected by the student and the proposed plan of study are approved by the adviser and the staff member who supervises the work. Prerequisite: Consent of instructor.
ANTH 594  **Cultural Heritage**  credit: 2 OR 4 hours.
Same as LA 594. See LA 594.

ANTH 599  **Thesis Research**  credit: 0 TO 16 hours.
Preparation of theses. Approved for S/U grading only.
ARAB 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

ARAB 201  **Elementary Standard Arabic I**  credit: 5 hours.
Mastery of the Arabic alphabet and phonetics; elementary formal grammar and the development of reading and writing skills; and
conversation in the formal noncolloquial style. Participation in the language laboratory is required.

ARAB 202  **Elementary Standard Arabic II**  credit: 5 hours.
Continuation of ARAB 201. Participation in the language laboratory is required. Prerequisite: ARAB 201

ARAB 210  **Colloquial Arabic I**  credit: 4 hours.
Development of conversational fluency in one of the major colloquial dialects; see Class Schedule for dialect to be taught each term.

ARAB 211  **Colloquial Arabic II**  credit: 4 hours.
Continuation of ARAB 210. Prerequisite: ARAB 210.

ARAB 403  **Intermediate Stand Arabic I**  credit: 4 hours.
Survey of more advanced grammar; emphasis on increasing conversational fluency in the formal noncolloquial style; and reading of
prose texts reflecting aspects of Arabic culture. Prerequisite: ARAB 202.

ARAB 404  **Intermediate Stand Arabic II**  credit: 4 hours.
Continuation of ARAB 403. Prerequisite: ARAB 403.

ARAB 405  **Advanced Standard Arabic I**  credit: 3 hours.
Practice to attain conversational fluency in the formal noncolloquial style; introduction to Arabic literature; and readings in social,
political, and historic writings. Prerequisite: ARAB 404.

ARAB 406  **Advanced Standard Arabic II**  credit: 3 hours.
Continuation of ARAB 405. Prerequisite: ARAB 405.

ARAB 407  **Topics Stand Arabic Lang&Lit I**  credit: 3 hours.
Selected readings from Modern Standard Arabic authors, with a focus on novels, plays, and basic poetry illustrative of Arab cultural
issues and advanced level MSA grammar, as well as development of expository writing skills. Prerequisite: ARAB 406.

ARAB 408  **Topics Stand Arabic LangLit II**  credit: 3 hours.
Continuation of ARAB 407 with increased emphasis on the reading and comprehension of literary texts exemplified in advanced level
novels, plays, and poetry, as well as on advanced mastery of expository writing skills. Prerequisite: ARAB 407.

ARAB 409  **Adv Top Stand Arabic LangLit I**  credit: 3 OR 4 hours.
Introduction to Modern Standard Arabic in the professions as documented in selected newspapers, educational radio and TV
programs, works of fiction, biographies, anthologies, and professional journals. Students will be introduced to argumentative writing
in MSA, expected to make oral presentations, and to write a research paper in their field. 3 undergraduate hours. 4 graduate hours.
Prerequisite: ARAB 408.

ARAB 410  **AdvTop Stand Arabic LangLit II**  credit: 3 OR 4 hours.
Continuation of ARAB 409 with increased emphasis on the development of comprehension and writing of professional language. 3
undergraduate hours. 4 graduate hours. Prerequisite: ARAB 409.
Architecture

Architecture, School of
Director: David Chasco
School Office: 117 Temple Buell Hall, 611 Taft Drive, Champaign
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ARCH 101  Introduction to Architecture  credit: 3 hours.
An introduction to architecture, architectural education and the profession with emphasis on issues that influence architecture and the people and processes involved.

ARCH 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

ARCH 210  Intro to the Hist of Arch  credit: 3 hours.
Visual and cultural analysis of selected buildings, urban spaces, and cities, from ancient Greece to modern times; emphasizes the architectural traditions of Western Civilization, especially as they affect the built environment of America and the Middle West. Prerequisite: Sophomore standing or consent of instructor.

ARCH 215  Buildings, Land and Culture  credit: 3 hours.
Same as LA 215. See LA 215.
This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

ARCH 222  Islamic Gardens & Architecture  credit: 3 hours.
Same as LA 222. See LA 222.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

ARCH 231  Anatomy of Buildings  credit: 4 hours.
Introduction to building technology, materials and methods emphasizing integration of design and technology. Introduces buildings as a network of systems including space, structure and environmental controls operating within a larger context of environment and social function. Skills developed include analysis of building form and function, understanding of design/technology interrelationships, and communication of ideas through drawing. Prerequisite: ARCH 171.

ARCH 271  Graphics for Architects  credit: 4 hours.
Introduction to architectural graphic communication skills that architects use to visualize, analyze, and record creative thoughts: 1) freehand sketching; 2) architectural delineation; and 3) digital applications. Prerequisite: ARCH 101 and concurrent enrollment in ARCH 231.

ARCH 272  Strategies of Arch Design  credit: 4 hours.
Integration of formal principles with functional fundamentals of architectural design; functional vocabulary, principles, and concepts of architectural design; introduction to precedent study and analysis; skills development in sketching, drafting, rendering, layout, and modeling; and creative problem-solving in 2- and 3-dimensional exercises. Prerequisite: ARCH 101 and ARCH 171.

ARCH 300  Ind Studies in Urban Design  credit: 3 hours.
The individual study of selected topics involving the history, design, and function of significant European cities. Prerequisite: One year of history of architecture or Art History; consent of instructor.

ARCH 314  History of World Landscapes  credit: 3 hours.
Same as LA 314. See LA 314.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

ARCH 341  Environment Tech HVAC  credit: 4 hours.
Study of the control of thermal environment, mechanical and related building sub-systems, and their integration into the overall building design. The specific topics include: thermal comfort and the behavioral implications; fundamentals of thermal behavior of buildings; the principles of heat and moisture in buildings; indoor air quality and "Sick Building Syndrome"; energy and sustainability implications of building design; and mechanical systems including HVAC and plumbing systems. Prerequisite: ARCH 231.

ARCH 342  Environment Tech Ltg & Acoust  credit: 4 hours.
Study of the control of luminous and sonic environments, the supporting building systems, and their integration into the overall building design. Specific topics include: lighting fundamentals; light sources; effects of lighting on comfort and performance; lighting calculations and design; energy economy and sustainability; acoustic fundamentals; room acoustics; noise control; and basic electrical and sound systems. Prerequisite: ARCH 231.

ARCH 351  Statics & Dynamics  credit: 4 hours.
Study of equilibrium of rigid bodies in two and three dimensions; trusses; shear and bending moments in beams; arches and frames; cables; friction; introduction to dynamics; architectural applications. Prerequisite: MATH 220 and MATH 231 or PHYS 101.

ARCH 352  Mech of Mat & Design Appl  credit: 4 hours.
Study of stresses, strains, and deformations in axially loaded members; direct shear and bearing stresses; torsion; beam stresses and deflections; stresses under combined loading; column buckling; design of structural members; introduction to statically indeterminate structures; architectural applications. Prerequisite: ARCH 351.

ARCH 373  Arch Design and the Landscape  credit: 5 hours.
The building in a landscape setting; creation of place; schematic building design and site planning issues, universal design and accessibility; principles of energy efficient building design; human-environment relationship issues; and architectural design and presentation methods; required field trips. Prerequisite: ARCH 272.

ARCH 374  Arch Design and the City  credit: 5 hours.
Building in the community setting; creation of place; introductory urban design and site planning issues, including universal design and accessibility; human-built environment relationship issues; architectural design and presentation methods; required field trips. Prerequisite: ARCH 373.

ARCH 399  Study in Versailles, France  credit: 0 TO 18 hours.
Study in the University of Illinois Architectural Program at Versailles, France. Approved for S/U grading only. Prerequisite: Concurrent registration in the full-time program at Versailles through the Chicago or Urbana-Champaign Campus.

ARCH 400  Senior Honors in Architecture  credit: 1 TO 4 hours.
For candidates for honors in Architecture. Independent guided study and research in a selected area of architecture. No graduate credit. May be repeated to a maximum of 6 hours with consent of Director of School. Prerequisite: Senior standing in architecture, a University grade-point average of 3.0 or, in special cases, consent of Director of School.

ARCH 401  Independent Study  credit: 1 TO 4 hours.
Independent guided study and investigation in a selected area of architecture. Approved for both letter and S/U grading. May be repeated. Prerequisite: Junior standing in architecture, written proposal approved by a sponsoring faculty member and the approval of the Director of the School.

ARCH 402  Intro to Hist of Arch Theory  credit: 3 hours.
Architectural theory, criticism, and historiography from antiquity to the present. Based on close readings of texts from antiquity to the present day. Prerequisite: Sophomore standing.

ARCH 403  Spec Topics in Arch History  credit: 3 hours.
Special topics in Architectural History courses. Topics and subject matter to be published in course listings. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: ARCH 210 and sophomore standing.

ARCH 407  Rome: The Eternal City  credit: 3 hours.
Considers the architecture and urbanism of the city of Rome across time. Special focus will be placed on critical strategies for understanding urban sites. Prerequisite: Sophomore standing.

ARCH 409  Special Topics in French Arch  credit: 3 hours.
Explores aspects of the architecture and urban design of France from antiquity until the present. May be repeated to a maximum of 6 hours. Prerequisite: ARCH 210.

ARCH 410  Ancient Egyptian & Greek Arch  credit: 3 hours.
Architecture and urban design in the ancient Egyptian and Greek world from Predynastic Egypt through the Hellenistic period (ca. 3200-31 BC). Prerequisite: ARCH 210 or ARTH 111.
ARCH 411  **Ancient Roman Architecture**  credit: 3 hours.
Architecture and urban design in the ancient Roman world from the Etruscan through the Late Antique periods (675 BCE - 400 CE). Connections between Roman Late Antique, Early Christian, and Byzantine Architecture will be considered. Prerequisite: ARCH 210 or ARTH 111.

ARCH 412  **Medieval Architecture**  credit: 3 hours.
Explores aspects of the architecture and urban design of medieval Europe from late antiquity to the late Middle Ages (approximately 300-1400). Same as MDVL 412. Prerequisite: ARCH 210 or ARTH 111.

ARCH 413  **Renaissance Architecture**  credit: 3 hours.
Developments in architecture, urban design, and garden art in Italy and northern Europe in the fifteenth through the sixteenth centuries. Prerequisite: ARCH 210, ARTH 112, or consent of instructor.

ARCH 414  **Baroque & Rococo Arch**  credit: 3 hours.
Developments in architecture, urban design, and garden art in Italy, France, Germany, and England in the seventeenth and eighteenth centuries. Prerequisite: ARCH 210, ARTH 112, or consent of instructor.

ARCH 415  **Neoclass & Nineteen Cent Arch**  credit: 3 hours.
Evolution of Continental and British architecture and urban planning from 1750 to World War I; includes some reference to American architecture of the same period. Prerequisite: ARCH 210 or ARTH 112, or consent of instructor.

ARCH 416  **Modern American Architecture**  credit: 3 hours.
Development of American architecture and urban planning from the seventeenth century to the present. Prerequisite: ARCH 210, ARTH 112, or consent of instructor.

ARCH 417  **Twentieth-Century Architecture**  credit: 3 hours.
Developments in Western architecture and urban design from 1900 to the present; examines the rise of modernism in Europe and, after World War II; includes work in the United States, India, Japan, and Australia. Prerequisite: ARCH 210 or ARTH 112, or consent of instructor.

ARCH 418  **Hist of the Urban Environment**  credit: 3 hours.
Examines the evolution of town planning and urban design in Western civilization from prehistory to the present; studies cultural and technical advancements affecting the form of the urban environment.

ARCH 419  **Historic Building Preservation**  credit: 3 hours.
Introduces historic preservation: legal, financial, and administrative assistance, graphic examination of restored buildings and sites, and application of conservation technology.

ARCH 423  **Soc/Beh Factors for Design**  credit: 3 hours.
Research-oriented introduction to existing social and behavioral knowledge, methods, and tools for relating man to his physical and social environment, with implications for theories and a philosophy of architectural design. Prerequisite: Consent of instructor.

ARCH 424  **Gender & Race in Contemp Arch**  credit: 3 hours.
Analyzes how the built environment reflects social attitudes towards gender and race. Identifies the work of women and people of color in architecture and related disciplines as consumers, critics, and creators of the environment. Provides links with valuable professional networks in Chicago and elsewhere. Same as GWS 424. Prerequisite: Consent of instructor.

ARCH 432  **Construction of Buildings**  credit: 4 hours.
Second course in building science and technology with emphasis on the process of project execution from the initiation of design to the completion of construction. Includes comprehensive study of the design of buildings and their systems, materials and methods, and their implications on building sustainability and design decision-making. 4 hours undergraduate only. Prerequisite: ARCH 231 or consent of instructor.

ARCH 441  **Heat and Moisture in Buildings**  credit: 4 hours.
Provides information and skills necessary for the designer to deliver dry, durable and healthful buildings. First half covers theory, including heat transfer, psychrometrics, steady-state diffusion and conduction analysis, and transient analysis. Second half covers building applications: roofs, walls, windows, foundations, and mechanical systems. Prerequisite ARCH 341 or equivalent.

ARCH 451  **Theory & Design Steel & Timber**  credit: 4 hours.
Analysis and design of steel and timber structures for buildings. Steel columns, beams, trusses, connections, roof and floor framing systems; timber beams, columns, roof and floor framing systems. Prerequisite: ARCH 352.

ARCH 452  **Theory of Reinforced Concrete**  credit: 4 hours.
Concrete materials; behavior of reinforced concrete construction; behavior and design of structural elements, one-way slabs, beams, and girders; columns; ACI code requirements; and introduction to continuity in reinforced concrete structures. Prerequisite: ARCH 352.

ARCH 471  **Fundamentals of Arch Design**  credit: 6 hours.
Basic architectural design methods, fundamentals, principles and concepts including creative problem solving in two- and three-dimensions. Prerequisite: Limited graduate standing in Architecture (Track 3 Program).

ARCH 472  **Arch Des in Landscape & Cities**  credit: 6 hours.
Intermediate architectural design methods, fundamentals, principles and concepts focusing on buildings in landscape and urban contexts. Prerequisite: ARCH 471.

ARCH 475  **Arch Design & Development**  credit: 6 hours.
Schematic design and development of a small-scale public building emphasizing the integration of the basic elements of building; materials, details, structure, technology, program, life safety, and universal design. Prerequisite: ARCH 374 or ARCH 472.

ARCH 476  **Arch Design & Exploration**  credit: 6 hours.
Exploration of boundaries of architecture and the built environment. Focused exploration into specific design topics, such as issue-oriented building problems, urban design theory, intermediate building design and site planning theory, human-environment relationship theory, interdisciplinary design, and architectural design and presentation methods. Prerequisite: ARCH 475.

ARCH 480  **Sustainable Design Principles**  credit: 2 hours.
Introduction to key concepts for the sustainable design of buildings and landscapes, including concepts that form the core of the U.S Green Building Council rating system (LEED). Introduction to LEED accreditation. Same as UP 480.

ARCH 498  **Directed Research in Arch**  credit: 1 TO 4 hours.
Participation in on-going research projects which may include energy management, environmental perception, facilities development, building science, and other topics. May be repeated to a maximum of 8 hours. Prerequisite: Approval of written proposal by instructor and Director of School.

ARCH 499  **Off-Campus Study**  credit: 0 TO 12 hours.
Provides opportunity for approved off-campus study. Detailed proposal for study off campus must be submitted for approval to the appropriate committee in the School prior to such study. Final determination of credit and its application toward the degree is made after a review of the student's off-campus work by the above committee and the Director of School. Approved for both letter and S/U grading. Prerequisite: Senior or graduate standing in architecture and approval of program prior to registration.

ARCH 501  **Architectural Practice**  credit: 4 hours.
Role of the architect in the building enterprise, professional ethics, and the conduct of professional practice; legal aspects of architectural practice and building construction; introduction of business management, marketing, operational procedures, financial planning, and cost control of architectural practices; and the administration of construction contracts. Prerequisite: Graduate standing or consent of instructor.

ARCH 502  **Structural Planning**  credit: 4 hours.
General problems in the selection and design of structural systems for buildings; methods of analysis; site explorations, soils, and foundations; bracing; and special systems. Prerequisite: ARCH 451 and ARCH 452.

ARCH 510  **History of World Landscapes**  credit: 4 hours.
Same as LA 513. See LA 513.

ARCH 511  **Seminar in Ancient Arch**  credit: 4 hours.
Seminar on topics in ancient architecture. Prerequisite: ARCH 410, or equivalent as determined by the instructor.

ARCH 512  **Seminar in Medieval Arch**  credit: 4 hours.
Seminar on topics in medieval architecture. Same as MDVL 512. May be repeated to a maximum of 12 hours in the same or subsequent terms. Prerequisite: ARCH 411, ARCH 412, or equivalent as determined by the instructor.

ARCH 513  **Sem in Ren & Baroque Arch**  credit: 4 hours.
Seminar on topics in European architecture from the fifteenth through the eighteenth centuries. Prerequisite: ARCH 413 and ARCH 414, or equivalent as determined by the instructor.

ARCH 516  **Architecture Seminar 1800-2000**  credit: 4 hours.
Seminar on topics in European and American architecture from 1800 to 2000. May be repeated in separate terms to a maximum of 12 hours. Prerequisite: ARCH 415, ARCH 416, or ARCH 417.
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARCH 517</td>
<td>Develop of Cont Arch Thought</td>
<td>4 hours</td>
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<td></td>
<td>Examination of the development of the philosophy of significant modern and contemporary architectural writers and architects in relation to their projects and executed work. Prerequisite: ARCH 415 and ARCH 416, or equivalent as determined by the instructor.</td>
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<tr>
<td>ARCH 518</td>
<td>Recording Historic Buildings</td>
<td>3 hours</td>
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<td>Examines techniques for recording historic buildings and sites: measuring, photographing, and drawing to Historic American Building Survey standards; taking field notes and investigating public records to document reports. Prerequisite: ARCH 419 and demonstrated ability in architectural graphics; or consent of instructor.</td>
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<tr>
<td>ARCH 519</td>
<td>Conserv of Building Materials</td>
<td>3 OR 4 hours</td>
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<td></td>
<td>Examination, analysis, and pathologies of building materials and techniques for treatment and repair of historic buildings. Emphasis is on conservation of traditional masonry, concrete, and metals. Field trips and lab work. To receive 4 hours credit, students must participate in lab. Prerequisite: ARCH 419.</td>
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<tr>
<td>ARCH 530</td>
<td>Management in Architecture</td>
<td>4 hours</td>
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<td>Study of management and business administration topics relevant to the architecture profession. The application of: marketing, ethics, accounting, organizational behavior, quantitative analysis, finance, operations, economics, and strategic planning to the field of architecture. Management and economic issues that influence and motivate commercial, industrial, institutional, and individual clients are addressed. Prerequisite: Graduate standing in Architecture.</td>
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<tr>
<td>ARCH 534</td>
<td>Building Economics</td>
<td>4 hours</td>
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<td>Study of factors affecting cost of building including: the building market, construction cost, estimates and cost control, time value of money and building life-cycle cost, measuring the worth of investments, depreciation and tax consideration of cash-flows. Prerequisite: Graduate standing or consent of instructor.</td>
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<tr>
<td>ARCH 538</td>
<td>Econ Issues in Arch Develop</td>
<td>4 OR 6 hours</td>
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<td></td>
<td>Individual and team analysis of architectural development proposals addressing relevant economic topics and trends. Proposals are analyzed for development, construction, finance, operation, and sale costs. Potential and projected rate of return on investment is established for specific time periods. Economic and social forces impacting upon real estate values are examined. Prerequisite: ARCH 501, ARCH 530, and ARCH 534; or consent of instructor.</td>
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<tr>
<td>ARCH 544</td>
<td>Bldg Sys &amp; Design Integration</td>
<td>3 OR 4 hours</td>
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<td>Advanced course on building design for greater performance, including the study of: the anatomical and functional variations of building subsystems and their design implications; inter-system relationships and synergistic integration of building subsystems into the overall building; and the strategies for designing buildings of high functional performance and greater overall value. (Day-long Friday field trips and lab fee). Term paper is required for 4 hours credit. Prerequisite: Graduate standing in Architecture.</td>
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<tr>
<td>ARCH 545</td>
<td>Design &amp; Constructability</td>
<td>3 OR 4 hours</td>
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<td>Advanced course on building design for greater constructability, including material alternatives and their architectural, performance, and construction implications; the implications of the specifics of design on the range of applicable construction methods, and therefore, on construction productivity and economy; and the strategies for designing buildings of high constructability and greater overall value. (Day-long Friday field trips and lab fee). Term paper is required for 4 hours credit. Prerequisite: ARCH 544 or consent of instructor.</td>
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<tr>
<td>ARCH 546</td>
<td>Programming &amp; Concept Studio</td>
<td>6 hours</td>
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<td>An advanced course on programming architectural projects and developing design concepts to best meet the project goals and maximize value creation. Investigation of relevant issues and appropriate methods of programming and concept development are followed by programming and design exercises. The specific contents include: theories and methods of programming; general program requirements and exemplary design responses for selected major building types; testing of the viability of selected model programs through exploration of appropriate design responses; further enhancement of the subject programs in light of such explorations; and investigation and development of philosophically sound and operationally efficient methods of programming and design. May not be repeated for credit. Prerequisite: Graduate standing in architecture and consent of instructor.</td>
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<tr>
<td>ARCH 547</td>
<td>Architectural Practice Studio</td>
<td>8 hours</td>
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<td>Comprehensive building design with emphasis on holistic design integration for optimum performance and constructability with best possible economy under the realistic temporal, technical, legal, and budgetary limitations. The projects, typically real ones, are executed through partial construction document phase through collaborative design by project teams. (Day-long Friday field trips). Prerequisite: ARCH 534, ARCH 545, and ARCH 546; or consent of instructor.</td>
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<tr>
<td>ARCH 548</td>
<td>Const Execution &amp; Admin</td>
<td>4 hours</td>
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|             | Advanced course in construction with emphasis on acquiring knowledge and developing skills for successful project execution in a real-time project with numerous variables affecting the project outcome, including: devising methods and strategies for effective project execution; making decisions that can steer the project to the best possible direction; and skillfully mediating disputes and conflicts that might arise. For this purpose, on-going major construction projects are used as Learning Laboratories. May be repeated to a maximum
of 8 hours. (Summer I credit: 1 graduate hour and Summer II credit: 2 graduate hours). Prerequisite: ARCH 501 and ARCH 545; or consent of instructor.

ARCH 550  **Reinforced Concrete Design**  credit: 4 hours.
Selection, design, and comparison of reinforced concrete floor systems for buildings; study and design of columns and footings; and prestressed concrete. Prerequisite: ARCH 452.

ARCH 551  **Structural Analysis**  credit: 4 hours.
Advanced problems in the analysis of statically determinate structures; general theories and methods of analysis of statically indeterminate structures by geometric and energy methods; and introduction to theory of plastic design. Prerequisite: ARCH 451 and ARCH 452.

ARCH 552  **Soil Mech and Foundations**  credit: 4 hours.
Soil properties and site exploration; stresses in soils; soil consolidation and settlement; shear strength of soils; bearing capacity; design and spread and combined footings; mats; pile foundations; lateral soil pressure and retaining walls. Credit is not given for both this course and either of the courses it replaces (existing ARCH 552 and ARCH 557). Prerequisite: ARCH 452 and ARCH 551.

ARCH 553  **Adv Reinforced Concrete Design**  credit: 3 hours.
Critical review of the analysis, methods, and specifications involved in the design and behavior of reinforced concrete structures for buildings, including tall buildings, plates, and shells; computer applications. Prerequisite: ARCH 551; credit or concurrent registration in ARCH 560 or consent of instructor.

ARCH 554  **Adv Steel Design**  credit: 3 hours.
Advanced topics in the design of steel structures; critical study of the AISC specification; design of steel members and their connections; composite structures; and the analysis and design of continuous structures and tall buildings. Prerequisite: ARCH 560 or consent of instructor.

ARCH 555  **Prestressed Concrete Design**  credit: 3 hours.
Theory and design of prestressed concrete structures; and suspension shell structures. Prerequisite: ARCH 553 or consent of instructor.

ARCH 556  **Advanced Structural Planning**  credit: 4 hours.
Study of the loads, functional and spatial requirements, and construction problems in the selection and design of structural systems for buildings; cost estimates; and integration of mechanical and electrical equipment. Prerequisite: ARCH 552 and ARCH 553; credit or concurrent registration in ARCH 554 and ARCH 555, or consent of instructor.

ARCH 558  **Structural Wood Design**  credit: 3 hours.
Analysis and design of wood structures for buildings; response of wood buildings to gravity and lateral loads; design of structural elements: beams, columns, beam-columns, members in tension, and trusses using NDS specifications; connections; plywood panels; diaphragms and shear walls. Prerequisite: ARCH 451 or equivalent.

ARCH 559  **Structural Masonry Design**  credit: 3 hours.
Engineering properties of masonry materials; codes and standards for masonry structures; analysis and design of masonry structures including multistory buildings and arches. Prerequisite: ARCH 452 or equivalent.

ARCH 560  **Advanced Structural Analysis**  credit: 3 hours.
Advanced theory and analysis of statically indeterminate structures, recognizing effects due to temperature, settlement, and fabrication errors; matrix methods focusing on computer analysis techniques; introduction to plastic analysis and design. Prerequisite: ARCH 551.

ARCH 563  **Soc/Beh Research Designed Env**  credit: 4 hours.
Introduction to methods and techniques of systematically generating social and behavioral information relevant to the programming, design, and evaluation of physical environments. Same as LA 563. Prerequisite: Graduate standing in architecture, landscape architecture, or urban and regional planning.

ARCH 564  **Behavioral Research in Design**  credit: 4 hours.
Same as LA 564. See LA 564.

ARCH 565  **Design/Behavior Studio**  credit: 6 hours.
Same as LA 565. See LA 565.

ARCH 571  **Architectural Design Studio**  credit: 6 hours.
Design studies of intermediate size building types; planned communities; civic and social facilities at the community and urban scale; and collaboration among the several disciplines involved in planning the human habitat: urban planning, landscape architecture, sociology, and economics. Prerequisite: ARCH 476.

ARCH 572  **Architectural Design Studio**  credit: 6 hours.
Research and individual comprehensive design study for a selected architectural project; special emphasis on site development and the integration of construction technology, structure, and environmental systems. Prerequisite: ARCH 571 or consent of instructor.

ARCH 573  **Architectural Design Studio**  credit: 4 TO 8 hours.
Definitive design thesis focusing on design issues and various building types with optional choices related to the student’s particular interests, talents, and capacities. Prerequisite: ARCH 572 or consent of instructor.

ARCH 574  **Architectural Design Studio**  credit: 4 TO 8 hours.
Continuation of ARCH 573. Prerequisite: ARCH 573 or consent of instructor.

ARCH 576  **Architectural Design Seminar**  credit: 3 OR 4 hours.
Presentations and discussions relative to various areas of architectural and environmental design concerns. May be repeated to a maximum of 12 hours. Prerequisite: ARCH 572 or consent of instructor.

ARCH 577  **Theory of Architecture**  credit: 3 hours.
Review of principles of architectural design; factors in programming architectural requirements; design development; and evaluation and criticism. Prerequisite: Consent of instructor.

ARCH 580  **Adv Sustainability Principles**  credit: 2 hours.
In depth examination of how concepts introduced in ARCH 480 lead to design of sustainable buildings and landscapes. Uses the LEED framework for assessing building performance and meeting sustainability goals. Examines the scientific standards LEED uses to emphasize state of the art strategies for sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. Prerequisite: ARCH 480 or concurrent enrollment in ARCH 480.

ARCH 591  **Spec Prob Arch Hist & Pres**  credit: 2 TO 4 hours.
Individual investigation of the work of particular architects, of specific buildings, and of the architecture of periods or regions; comparative studies; and aesthetic problems. May be repeated in separate terms to a maximum of 12 hours. Prerequisite: Twelve hours of architectural history or consent of instructor.

ARCH 593  **Spec Prob Arch Practice & Mgt**  credit: 2 TO 4 hours.
In-depth investigation of emerging issues and specific areas of research interest beyond what is covered in graduate courses of regular offering in the area of architectural practice and management. Students, as individuals or in groups, are expected to propose a research plan and methods for a specific topic of research interest in consultation with the instructor, and execute it under the guidance of the instructor through consultation on a regular basis. (Summer credit: 1 to 6 graduate hours). May be repeated in same and subsequent terms as topics vary to a maximum of 12 hours. Prerequisite: Advanced graduate standing and consent of instructor.

ARCH 594  **Spec Prob Building Sci & Tech**  credit: 2 TO 4 hours.
In-depth investigation of emerging issues and specific areas of research interest beyond what is covered in graduate courses of regular offering in the area of building science technology. Students, as individuals or in groups, are expected to propose a research plan and methods for a specific topic of research interest in consultation with the instructor, and execute it under the guidance of the instructor through consultation on a regular basis. May be repeated to a maximum of 12 hours. (Summer credit: 1 to 2 graduate hours). Prerequisite: Advanced graduate standing and consent of instructor.

ARCH 595  **Spec Prob Struct Theory & Des**  credit: 2 TO 4 hours.
Individual or group investigation and study in architectural engineering application; research in economy and design in correlation with architectural, mechanical, and structural requirements. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARCH 596  **Spec Prob Housing Env**  credit: 2 TO 4 hours.
Individual investigation or research in housing environments involving special issues such as energy conscious design, human-environmental relations, aesthetic theory, government policy, and cultural patterns. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARCH 597  **Spec Prob Arch Design**  credit: 2 TO 4 hours.
Individual investigation of building types and systems, aesthetic theories, design thesis programming and other problems in architectural design. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.

ARCH 599  **Thesis Research**  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor and graduate program coordinator.
ART 100 Understanding Visual Culture credit: 3 hours.
Interdisciplinary methods in recognizing and understanding meaning of a wide range of visual messages in the arts, design, and
culture, with emphasis on critical thinking and analysis. Topics include: visual perception, visual persuasion, the visual interpretation
of time and space, humor. Contemporary art and design are explored through the use of semiotics and historical, cultural and ethical
aesthetic and technical perspectives.

ART 101 Introduction to Studio Arts credit: 3 hours.
Introductory studio experiences with a variety of art materials and techniques accompanied by visits to artists' studios and museum
tours. Not open to students majoring in art and design.

ART 102 Elementary Drawing credit: 3 hours.
Basic drawing course using a variety of media and techniques, including charcoal, conte, pencil, pen and india ink, and studies in
perspective, line, value, composition, and the figure. May be repeated to a maximum of 6 hours. Not open to students majoring in art
and design.

ART 140 Introduction to Art credit: 3 hours.
Broadly based conceptual foundation for a critical understanding of the visual arts in contemporary society. Not open to students in art
and design and architecture.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ART 191 Unit One Studio/Seminar credit: 1 TO 3 hours.
Topics vary; consult Unit One office. Approved for both letter and S/U grading. May be repeated if topics vary.

ART 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
May be repeated.

ART 201 Art in Early Childhood credit: 2 hours.
Philosophical and practical foundations for teaching art in early childhood settings. Lectures, discussions and class activities focus on
the value of art in the curriculum, artistic development and instruction, observation and guided teaching practice. Not open to students
majoring in art and design.

ART 202 Art in the Elementary Grades credit: 2 hours.
Introductory laboratory experiences with the elements of design in the visual arts and with processes, materials, and activities
appropriate for the elementary grades. Not open to students majoring in art and design.

ART 250 Writing with Video credit: 3 hours.
Students will engage in a comprehensive exploration of creative inquiry, self-reflection, social engagement, and media production.
They will adapt the basic, traditional principles of critical writing and analysis, to communicate effectively using image production and
post-production. Directed writings in concert with video production projects will allow students to experience an integrated process of
thinking, creating, and problem-solving. Prerequisite: Any Composition I course.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult
UIUC: Advanced Composition

ART 299 Special Topics in Art credit: 1 TO 3 hours.
Topics and subject matter to be published in course listings. May be repeated in the same term to a maximum of 6 hours. May be
repeated in separate terms to a maximum of 12 hours. Prerequisite: Sophomore standing.

ART 305 Art for Public Places credit: 3 hours.
Introduces the design and construction of free-standing site-specific sculpture for indoor and outdoor settings through the study of existing public works. Includes field trip and the creation of a large-scale project exhibit on campus. Prerequisite: Junior standing or consent of instructor.

ART 499  **Special Topics in Art**  credit: 1 TO 4 hours.
Topics and subject matter to be published in course listings. 1 to 3 undergraduate hours. 1 to 4 graduate hours. May be repeated in the same term to a maximum of 6 undergraduate hours or 6 graduate hours. May be repeated in separate terms to a maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: Senior standing or consent of instructor.

ART 501  **Individual Art Enquiry**  credit: 4 hours.
Explores the perspectives of the relationship of science and art through three main topics: individual perspectives and responses; physiology and art; and the relationship of art's origins to form and structure. Prerequisite: Graduate standing in art education, or related fields with consent of instructor.

ART 502  **Art - Place - Narrative**  credit: 4 hours.
Investigates the relationship of people to places and objects and the narratives that grow from these interactions, as a way of understanding the foundation for both art making and art teaching. Prerequisite: Graduate standing in art education, or related fields with consent of instructor.
### ARTD 201  **Industrial Design I**  credit: 4 hours.
Introduction to the creative process and methods involved in industrial design; research, modeling, form giving, prototyping and communication with emphasis on user centered design. Projects of escalating scale and complexity complemented by lectures and demonstrations. Prerequisite: Concurrent registration in ARTD 224 or 225.

### ARTD 202  **Industrial Design II**  credit: 4 hours.
Studio design problems of increasing complexity involving structures and mechanisms. Lectures and discussions to explore design issues affecting contemporary culture and aesthetics perceptions. Prerequisite: Sophomore standing in Industrial Design major. Prerequisite: ARTD 201. Concurrent registration in ARTD 224 or ARTD 225.

### ARTD 208  **Ikebana: Japanese Floral Arts**  credit: 3 hours.
Through lectures, selected readings and hands-on experience of Ikebana (the art of Japanese flower arrangement), students will gain new perspectives on artistic and cultural heritage of Japan. Furthermore, they will be guided towards a means of applying these disciplines, ideas and philosophies into their daily lives, thereby enriching their experience and cultivating themselves to be well-rounded human beings.

### ARTD 209  **Chado (The Way of Tea)**  credit: 3 hours.
The study of the Japanese Way of Tea as it is practiced as a physical discipline necessary for aesthetic experiences.

### ARTD 210  **Introduction to Graphic Design**  credit: 3 hours.
Introduces the discipline and function of graphic design; explores the organization and structure of two-dimensional space as context for visual communication; includes practical exercises in visual perception, visual organization, and visual communication. Prerequisite: Sophomore standing in graphic design curriculum or consent of instructor; concurrent registration in ARTD 211 by students in graphic design.

### ARTD 211  **Design History Survey**  credit: 3 hours.
The historical, social and cultural context of design concentrating on manufactured products, communication, media and design from the Industrial Revolution to the present. Lectures, seminars and individual research projects. Prerequisite: Enrollment in Graphic Design or Industrial Design or consent of instructor.

### ARTD 212  **Introduction to Typography**  credit: 3 hours.
Introduces the discipline, function, and tradition of typographic form as it relates to visual/verbal communication; explores both technical and formal aspects. Prerequisite: ARTD 210 or consent of instructor; concurrent registration in ARTD 213.

### ARTD 213  **Introduction to Image Making**  credit: 3 hours.
Introduction to the historical, cultural, and technological influences images have had on visual communication. Understanding the application of the image making process in graphic design. Developing the ability to read and interpret visual communications. Prerequisite: ARTD 210, concurrent registration in ARTD 212.

### ARTD 225  **Design Drawing I**  credit: 3 hours.
Introduction to rapid drawing methods and tools used by designers. Focuses on theory and application of orthographic and perspective drawing for communication of design ideas. Prerequisite: Concurrent registration in ARTD 201 or ARTD 202.

### ARTD 226  **Product Innovation**  credit: 3 hours.
Presents an overview of the product development process from concept generation to design for manufacturing and project management. Emphasis on product definition, innovation, the early phases of development and the role of designer in new product development.

### ARTD 228  **Computer Applications I**  credit: 3 hours.
Concepts, methods and applications of computer-aided industrial design to the design products for mass manufacture. Rendering and lighting techniques to communicate product forms. Prerequisite: Industrial Design major, sophomore standing or consent of instructor. Concurrent registration in ARTD 201 or ARTD 202.
ARTD 299  Spec Topics in Design Courses  credit: 1 TO 5 hours.
Topics and subject matter to be published in course listings. May be repeated to a maximum of 6 hours in a semester, to a maximum of 12 total hours. Prerequisite: Sophomore standing in Art and Design.

ARTD 301  Industrial Design III  credit: 4 hours.
Design of user centered products for mass production; experience in the iterative problem solving processes and methods. Addresses practical constraints such as sustainability, environmental factors/ergonomics, manufacturing and materials, social and political and economic. Prerequisite: ARTD 202.

ARTD 302  Industrial Design IV  credit: 4 hours.
Industrial design problems of increasing complexity, scope and size. Continuation of ARTD 301. Prerequisite: ARTD 301.

ARTD 310  Intermediate Graphic Design I  credit: 3 hours.
Further exploration of typographic and visual form and manipulation of variables which affect content, stresses the importance of informational composition as an integral component of contemporary visual communication design. Prerequisite: Junior standing in graphic design curriculum, and ARTD 213 and ARTD 212.

ARTD 311  Intermediate Graphic Design II  credit: 3 hours.
Goal-directed graphic design problem-solving with emphasis on the methods of thinking and research which precede the making of design communications; development of systems for objective problem-solving. Prerequisite: ARTD 310.

ARTD 313  Sequential Design  credit: 3 hours.
Introduces and explores the structure and manipulation of time and space as a context for communication, with emphasis on design using type, image, sound, and motion with computer-based hypermedia. Prerequisite: Junior standing in graphic design or consent of instructor.

ARTD 326  Sustainable Product Design  credit: 3 hours.
Exploration of environmental origins, theory and practice of sustainable product design. Environmentally-responsive design methodologies and topics such as industrial ecology, dematerialization, design for disassembly, design for recycling and life-cycle assessment. Prerequisite: Junior standing in Art and Design or consent of instructor.

ARTD 327  Design Research Methods  credit: 3 hours.
Exploration of quantitative and qualitative research methods supporting the development of research methods specifically for industrial designers. Prerequisite: ARTD 301 or consent of instructor.

ARTD 328  Human-Centered Product Design  credit: 3 hours.
Principles of human-centered design and usability applied to products, product systems, and product environments to enhance the user experience; strategies to enhance independent learning for professional development, to further research, and to acquire new skills. Prerequisite: Junior standing in Art and Design or consent of instructor.

ARTD 330  Design Drawing II  credit: 3 hours.
Continuation of ARTD 225. Drawing and rendering techniques for industrial designers using mixed media with emphasis on quick perspective product delineation. Integration of hand and computer methods of communication. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing in industrial design or consent of instructor.

ARTD 334  Computer Applications II  credit: 3 hours.
Continuation of ARTD 228 with emphasis on product rendering using advanced computer applications programs. Prerequisite: ARTD 228 or consent of instructor.

ARTD 391  Special Problems in Design  credit: 1 TO 4 hours.
Directed independent creative activity or research. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing in Art and Design; and consent of instructor, advisor, and associate director of the School.

ARTD 399  Internship in Design  credit: 1 TO 13 hours.
Internships to be pre-approved for variable credit. Students will be required to document work completed during the internship with verification of supervisor. Supervisor will also be required to fill out a questionnaire either by mail or on-line. Faculty members will assess work and questionnaires to assign a grade. Approved for S/U grading only. Prerequisite: Junior standing in School of Art and Design.

ARTD 401  Industrial Design V  credit: 4 hours.
Advanced design projects in the context of the business environment in which product design and development takes place; marketing, branding, merchandizing, entrepreneurship within the context of globalized marketing and manufacturing. Prerequisite: ARTD 302.
ARTD 402  Industrial Design VI  credit: 4 hours.
Capstone project integrating all aspects of the design process from concept through final design, documentation and presentation; reconciliation of user centered constraints such as socio-economic, environmental-sustainability, manufacturability, health and safety and ethical. Standard approach that of an entry level industrial design professional. Prerequisite: ARTD 401.

ARTD 410  Advanced Graphic Design I  credit: 4 hours.
Research, analysis, and synthesis of complex visual problems; emphasis on modular sequence, symbolic systems, and image making for real world visual communication problems. Preparation of a comprehensive portfolio and consideration of professional requirements encountered by the designer in the visual communications industry. Prerequisite: ARTD 311; for graduate credit, consent of graphic design program chair.

ARTD 411  Advanced Graphic Design II  credit: 4 hours.
Continuation of ARTD 410. Prerequisite: ARTD 410; for graduate credit, consent of graphic design program chair.

ARTD 415  Ninth Letter  credit: 3 OR 4 hours.
Students develop, design, and produce issues of the national literary and arts journal, Ninth Letter. Also involves students in curating and designing content for the companion website, ninthletter.com. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours and 8 graduate hours. Prerequisite: Consent of instructor.

ARTD 422  Advanced Industrial Design II  credit: 4 hours.
4 undergraduate hours. No graduate credit. Prerequisite: ARTD 420.

ARTD 426  Computer Applications II  credit: 3 hours.
Continuation of ARTD 323 with emphasis on applying computer applications programs to solving product, graphic, and communications problems in design; uses of networking and high quality output devices (plotters, printers, and video media). Prerequisite: ARTD 423 or consent of instructor and department.

ARTD 445  Seminar in Design  credit: 3 OR 4 hours.
Investigation of special problems and current topics in industrial and/or graphic design. Students will conduct original research which will be shared through papers, presentations, and discussions. 3 undergraduate hours. 4 graduate hours. May be repeated in separate terms to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Junior standing in Art and Design or consent of instructor.

ARTD 490  Senior Honors  credit: 2 TO 5 hours.
Independent creative activity, guided study, or research for honors. 2 to 5 undergraduate hours. No graduate credit. May be repeated to a maximum of 5 hours. Prerequisite: Senior standing in Industrial Design, a cumulative grade point average of 3.0; and consent of instructor and department.

ARTD 499  Special Topics in Design  credit: 1 TO 4 hours.
Topics and subject matter to be published in course listings. 1 to 3 undergraduate hours. 1 to 4 graduate hours. May be repeated as topics vary to a maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: Senior standing or consent of instructor.

ARTD 501  Industrial Design I  credit: 6 hours.
Introductory graduate-level course emphasizing in-depth design research used to evaluate set studio projects. Focuses on the development of critical thinking and product evaluation, and the development of inherent skills required to communicate that thinking through designed artifacts. This course is the first level of a six-term study in a three-year program leading to a terminal degree of MFA in Industrial Design. Prerequisite: BFA in Industrial Design or a related field (as accepted by the faculty), or consent of instructor.

ARTD 502  Industrial Design II  credit: 6 hours.
Second term of the introductory level year of the Industrial Design MFA degree program. Prerequisite: ARTD 501.

ARTD 503  Industrial Design III  credit: 6 hours.
Start of the second level of a six-term study in a three-year program leading to a terminal degree of MFA in Industrial Design. For two-year program, emphasis is solely directed to a research and design project that is the first stage of a comprehensive written thesis. Prerequisite: ARTD 502.

ARTD 504  Industrial Design IV  credit: 6 hours.
Completion of the second level of a six-term study in a three-year program leading to a terminal degree of MFA in Industrial Design. For two-year program, emphasis is solely directed to a research and design project that is the final stage of a comprehensive written thesis. Prerequisite: ARTD 503.

ARTD 505  Industrial Design V  credit: 6 hours.
Beginning of the third year of six-term study in a three-year program leading to a terminal degree of MFA in Industrial Design. Emphasis is solely directed to a research and design project that is the first stage of a comprehensive written thesis. Prerequisite: ARTD 504.

**ARTD 506  Industrial Design VI**  credit: 6 hours.
Final term of a three-year program leading to a terminal degree of MFA in Industrial Design. Emphasis is solely directed to a research and design project accompanied by a comprehensive written thesis. Prerequisite: ARTD 505.

**ARTD 591  Special Problems in Design**  credit: 2 TO 8 hours.
Directed individual creative activity or research. May be repeated to a maximum of 20 hours. Prerequisite: Graduate standing in Design.

**ARTD 595  Graphic Design Laboratory**  credit: 2 TO 6 hours.
Individually directed research in the studio with concentration in graphic design. May be repeated to a maximum of 12 hours. Prerequisite: Enrollment in the MFA program in graphic design or consent of departmental graduate committee.

**ARTD 599  Industrial Design Thesis**  credit: 2 hours.
Faculty guidance in research and writing thesis for advanced degree in Industrial Design. Approved for S/U grading only. May be repeated to a maximum of 4 hours. Prerequisite: Graduate study in Industrial Design.
Art--Education

Art and Design, School of
Interim Director: Nan Goggin
School Office: 143 Art and Design Building, 408 East Peabody, Champaign
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ARTE 201  **Foundations of Art Education**  credit: 3 hours.
Provides students with philosophical foundations for teaching art including in public schools. The primary emphasis will be on understanding recent and contemporary orientations through readings and practical activities. Particular emphasis will be placed on emerging trends in Art Education, especially the use of technology and the value of visual culture in student lives. It is envisaged that this course will provide the primary theoretical foundation for further practical and pre-service teaching courses in Art Education.

ARTE 202  **Methods of Teaching Art**  credit: 3 hours.
Considers how competencies identified by the Illinois State Board of Education and the National Art Education Association inform the development of knowledge, dispositions, and resources for teaching art in a culturally diverse society, with particular attention to current theories and approaches to teaching art in Pre-School to Grade 12 settings. Emphasis is placed on professional development and reflective practices that engage inquiry-based teaching strategies. Teaching strategies for both making and appraising images are emphasized.

ARTE 203  **Art Teaching Seminar**  credit: 3 hours.
This course is designed to provide undergraduates and graduates seeking certification in Art Education the opportunity to develop and evaluate art curricula for Grades Pre-K through 12. Seminar topics include formulating art lessons, strategies to motivate learners, children's artistic development, effective teaching methods, integrating art museum learning, critique, writing, and technology in the lesson planning process, and maintaining an ISBE file for certification in the State of Illinois. This course must be taken in conjunction with ARTE 204. Prerequisite: ARTE 202.

ARTE 204  **Practicum Teaching Experience**  credit: 4 hours.
Provides undergraduate and graduates seeking certification in Art Education structured and supervised teaching experience in the Saturday Art School program, held 10 Saturday mornings during the semester. Professional development in personal communication skills, lesson plan delivery, organizational abilities, use of technology in instruction, and art classroom management will comprise the goals of the course. Must be taken in conjunction with ARTE 203. Prerequisite: ARTE 202.

ARTE 299  **Spec Topics in Art Education**  credit: 3 hours.
Topics and subject matter to be published in course listings. May be repeated to a maximum of 6 hours in a semester or, to a maximum of 12 total hours. Prerequisite: Sophomore standing in Art and Design.

ARTE 301  **Early Field Art Teaching**  credit: 3 hours.
Early field experience in local elementary schools one half day weekly; includes identification, instruction, methods, and practicum on the psychology of the exceptional child. Prerequisite: ARTE 203 and ARTE 204; art education majors only.

ARTE 302  **Public School Art Programs**  credit: 3 hours.
The selection and arrangement of content for different educational levels; study and evaluation of curricula, equipment, and supplies; and program supervision. Prerequisite: ARTE 301 or junior standing in art, or consent of instructor.

ARTE 350  **Creative Dance for Children**  credit: 3 hours.
Same as DANC 350 and HDFS 361. See DANC 350.

ARTE 391  **Independent Study**  credit: 1 TO 4 hours.
Directed independent research or creative activity. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing in art and design; and consent of instructor, advisor, and associate director of the School.

ARTE 401  **Teaching Seminar**  credit: 4 hours.
Examines responsibilities, methods, and techniques specific to teaching art in elementary and secondary schools; includes the psychology of the exceptional child in conjunction with methods of instruction and student teaching experience. Prerequisite: ARTE 302; concurrent registration in EDPR 438 and EDPR 442, art education sections only.

ARTE 402  **Artistic Development**  credit: 3 OR 4 hours.
ARTE 403  **Expressive Arts and Community**  credit: 3 OR 4 hours.
Course explores the role of expressive visual art in community institutions - hospitals and clinics, detention centers, schools for special populations, and programs for diverse community groups with exceptional needs. Field trips and practicum experiences are included. 3 undergraduate hours. 4 graduate hours. May be repeated one time. Prerequisite: Senior or graduate standing.

ARTE 475  **Art Museum Exhibition Practice**  credit: 3 OR 4 hours.
Explores issues pertaining to the preparation, installation, and conservation of visual art. Students will learn how to organize, design, spot and install an exhibition; develop exhibition graphics; address conservation issues; handle works of art; and learn the business of art. Field trips and guest lectures by conservators, preparators, curators and exhibition designers will add further depth to the class. 3 undergraduate hours. 4 graduate hours. May be repeated in separate terms to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Junior standing in Art and Design.

ARTE 480  **Popular Visual Culture**  credit: 3 OR 4 hours.
Focuses primarily on contemporary popular culture, but also draws upon fine art, folk art, and indigenous art from both the past and the present. Considers the often troubled relationships between the pleasures of visual culture and its ideologies. Students examine the literature of visual culture studies and develop research skills by examining a specific site of visual culture of their own choosing in terms of aesthetic pleasures and ideology including but not limited to sexism, class, ethnicity, religion, homophobia, and xenophobia. Theories of the body, consumerism, and globalization, among others will be considered. 3 undergraduate hours. 4 graduate hours. May be repeated in separate terms to a maximum of 6 undergraduate hours or 8 graduate hours.

ARTE 490  **Senior Honors**  credit: 2 TO 5 hours.
Independent guided research and study for honors. 2 to 5 undergraduate hours. No graduate credit. May be repeated to a maximum of 5 hours. Prerequisite: Senior standing in art education, a cumulative grade point average of 3.0; and consent of instructor, advisor, and associate director of the School.

ARTE 501  **Issues in Art Education**  credit: 4 hours.
A range of topical issues are explored, which may vary from semester to semester, but may include children's artistic development, visual culture and curriculum, the philosophy of art, and cultural studies. May be repeated to a maximum of 16 hours.

ARTE 502  **Curriculum Development in Art**  credit: 4 hours.
Analysis of curriculum organization in the visual arts; particular emphasis given to a range of curriculum positions in education and general research related to curriculum design. Prerequisite: Consent of instructor.

ARTE 503  **Professional Teaching Seminar**  credit: 2 TO 4 hours.
Advanced laboratory experiences in two-dimensional visual art techniques for elementary teachers, supervisors, and principals. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

ARTE 505  **Foundations of Art Education**  credit: 4 hours.
Designed for master's level students. Readings and discussions introduce the theories upon which classroom practices are based, and follow the historical sequence of three major movements within art education over the past 100 years: self-expression in art education, discipline-based art education, and the recent shift toward visual culture in art education. Primary emphasis will be on understanding recent and contemporary orientations. Designed to provide a basis for more in-depth study of curriculum and instruction, child development, multiculturalism, visual culture, and other areas germane to art education. Students compare and contrast the literature in terms of the theories offered, or assumed, of children, art, pedagogy, and society. In addition, students will be introduced to academic standards of writing.

ARTE 506  **Theories of Art Education**  credit: 4 hours.
Designed for doctoral level students. Readings and discussions introduce the theories upon which classroom practices are based, and follow the historical sequence of three major movements within art education over the past 100 years: self-expression in art education, discipline-based art education, and the recent shift toward visual culture in art education. Primary emphasis will be on understanding recent and contemporary orientations. Designed to provide a basis for more in-depth study of curriculum and instruction, child development, multiculturalism, visual culture, and other areas germane to art education. Students compare and contrast the literature in terms of the theories offered, or assumed, of children, art, pedagogy, and society. In addition, students will be introduced to academic standards of writing.

ARTE 591  **Independent Graduate Studies**  credit: 2 TO 8 hours.
Individual direction in research and in creative activity; thesis.

ARTE 599  **Thesis Research**  credit: 0 TO 16 hours.
Guidance in research and writing theses for advanced degrees. Approved for S/U grading only. May be repeated. Prerequisite: Graduate standing in art education.
Art--Foundation

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ARTF 101  **Contemporary Issues in Art**  credit: 2 hours.  
Exposes the first year student in an interactive lecture/discussion format to contemporary issues and disciplines in the visual arts. Course requirements include attendance of course lectures, field trips, visiting artist presentations, keeping of a journal and the writing of a paper.

ARTF 102  **Drawing I**  credit: 3 hours.  
Theory and practice in observational drawing with emphasis on fundamental principles such as mark/line, shape/form, space/composition, linear/perspective, scale/proportion, value/tonal range, and pattern/texture. Open to Art and Design majors only.

ARTF 103  **Design I, Workshops**  credit: 3 hours.  
Theory and practice in the elements, processes and principles of design divided into three, five-week workshops on the topics of: Materials/Crafts, survey fabrication techniques in various physical media; Color, study the visual, material and psychological/emotional nature of color; Communication, problems in communication using primarily digital media. This course is open to Art and Design Majors only.

ARTF 104  **Drawing II**  credit: 3 hours.  
Continuation of ARTF 102 that includes the following drawing concepts: narrative, conceptual, applied, non-objective, format, process, seriality and collage. Open to Art and Design majors only. Prerequisite: ARTF 102.

ARTF 105  **Design II, Workshops**  credit: 3 hours.  
Theory and practice in the elements, processes and principles of design divided into three, five-week workshops on the topics of: Time, formal and technical aspects of working in temporal media such as sound, video or animation; Materials/Exploration, process-drive exploration with an emphasis on three-dimensional space and form; Research, methods for achieving research-drive projects. Prerequisite: ARTF 103.

ARTF 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.  
May be repeated.
Art--History

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ARTH 111  **Ancient to Medieval Art**  credit: 4 hours.
Development of the visual arts in Western Europe and the Near East in their cultural contexts from prehistoric times until the early
fifteenth century; includes Egyptian, Greek, Roman, and medieval art and architecture. Same as MDVL 111.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ARTH 112  **Renaissance to Modern Art**  credit: 4 hours.
Development of the visual arts in Western Europe and the United States in their cultural contexts from the early fifteenth century to the
present.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ARTH 113  **Introduction to African Art**  credit: 4 hours.
An introduction to the arts of Africa. Sculpture, textiles, architecture, body adornment, and performance will be examined on the basis
of aesthetic, religious, political, and social contexts. The main emphasis will be on traditional art, although the course will address many
changes and continuities within African art as evidenced in the late 20th century. The course will proceed geographically from western
through central to eastern and southern Africa. Videos, music, and museum visits will complement the lectures.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

ARTH 114  **Introduction to East Asian Art**  credit: 4 hours.
Thematic introduction to the visual arts of China and Japan, including calligraphy and painting, woodblock prints, sculpture, gardens
and architecture. Same as EALC 101.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

ARTH 115  **Art in a Global Context**  credit: 4 hours.
Introduces students to basic concepts necessary for understanding the visual arts. It orients students to the visual arts in a variety of
international contexts, and in particular in our current globalizing world. This course can be used to fulfill either Western or Nonwestern
general education categories, but not both.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

ARTH 215  **Greek Art**  credit: 3 hours.
Survey of architecture, sculpture, and painting of the Greek world from the geometric period to the beginning of the Christian era. Same
as CLCV 217.

ARTH 217  **Development of Ancient Cities**  credit: 3 hours.
Same as CLCV 231. See CLCV 231.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

ARTH 218  **Ancient Greek Sanctuaries**  credit: 3 hours.
Same as CLCV 232 and RLST 232. See CLCV 232.

ARTH 222  **Medieval Art**  credit: 3 hours.
The arts of Byzantium and Western Europe from the early Christian era to the Renaissance. Same as MDVL 222.

**ARTH 230** Italian Renaissance Art credit: 3 hours.
Architecture, painting, and sculpture of Italy during the Renaissance.

**ARTH 231** Northern Renaissance Art credit: 3 hours.
Architecture, painting, sculpture, and minor arts of Europe outside Italy in the fifteenth and sixteenth centuries. Same as MDVL 231.

**ARTH 235** Baroque Art credit: 3 hours.
Studies European painting, sculpture, and graphic work during the period 1580 to 1700.

**ARTH 240** Art of the Nineteenth Century credit: 3 hours.
Architecture, painting, sculpture, and minor arts of France, Germany, Spain, and England in the nineteenth century.

**ARTH 241** Twentieth-Century European Art credit: 3 hours.
Survey of the major artists and artistic movements in European painting and sculpture from 1880-1940.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ARTH 250** American Art credit: 3 hours.
Surveys American art and architecture from the colonial period to the present.

**ARTH 257** History of Photography credit: 3 hours.
Examines a history of photography from its origin to the present, including both documentary and artistic approaches; considers relationships with other arts.

**ARTH 260** Graffiti and Murals credit: 3 hours.
From Bronx walls to the Berlin Wall, from ancient palatial decorations to spray-can art, murals and graffiti have been revolutionary political tools, objects of aesthetic contemplation, and vehicles for identity formation. Primarily a lecture course that examines ancient and early modern cases from different cultures, as well as focusing on modern examples from Latin America and the USA. Same as LLS 260.

**ARTH 299** Spec Topics in Art History credit: 3 hours.
Special topics in Art History Courses. Topics and subject matter to be published in course listings. May be repeated up to 6 hours in a semester, to a maximum of 12 total hours. Prerequisite: Sophomore standing in Art and Design.

**ARTH 310** African Art and Society I credit: 3 hours.
Introduces the arts of Black Africa, i.e., dance, drama, songs, and poetry, as expressed in a multi-media framework and a social-religious context; surveys the art styles of the Dogon, Senufo, Mende, and Ashanti peoples.

**ARTH 311** African Art and Society II credit: 3 hours.
Introduces the arts of Black Africa, i.e., dance, drama, songs, and poetry, as expressed in a multi-media framework and a social-religious context; focuses on Yoruba art and surveys the art traditions of southeastern Nigeria, Cameroon, Gabon, Central Africa, and East Africa.

**ARTH 312** Central African Art credit: 3 hours.
A one-semester introduction to the arts of central Africa. Sculpture, pottery, architecture, body adornment, contemporary art, and performance will be examined and discussed on the basis of aesthetic, religious, political, and social contexts. Discusses many changes and continuities within African artistic traditions as evidenced in late twentieth-century urban, popular, and political arts of central Africa. We shall also investigate some central African artistic influences found in African American arts. Same as AFST 312.

**ARTH 322** Byzantine Art credit: 3 hours.
Arts of Byzantine, the Crusader States, and Russia from the ninth to the fifteenth centuries. Same as MDVL 322. Prerequisite: Junior standing or consent of instructor.

**ARTH 348** Spanish Art 1890-Present credit: 3 hours.
Introduces the major artists, movements, and institutions of Spanish modern and contemporary art, including Gaudi, Dali, Miro and Picasso, in their national cultural context.

**ARTH 350** American Art 1750-1900 credit: 3 hours.
Studies the two major directions of art in the United States from independence to the centennial, with focus on major figures and the scientific and philosophical movements which influenced them. Prerequisite: One year of art history or consent of instructor.
ARTH 351  Early American Modernism  credit: 3 hours.
Examines American art, particularly painting and sculpture, 1876-1940, against its cultural background and the relation of the American artist to Europe in an attempt to isolate the roots of Modernism in the United States. Prerequisite: One year of art history or consent of instructor.

ARTH 352  Art, Propaganda, and War  credit: 3 hours.
Examines the relationship between the visual arts and propaganda, with special attention paid to images of war. It focuses primarily on art in Europe and the United States from the time of the French Revolution to the present, and on the ways in which artists have sought to justify or condemn the violence of war. Same as GLBL 352.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Advanced Composition

ARTH 360  Women and the Visual Arts  credit: 3 hours.
Explores the complex interconnections of women with the visual arts in Europe and North America from the classical era to the present, including the modes of artistic production and the representation of women in western society. Same as GWS 360.

ARTH 369  Spirituality and Experience  credit: 3 hours.
Elective seminar designed to give advanced undergraduates a deeper understanding of the relationship between religion and human experience in the middle ages. Participants will be encouraged to apply a variety of methodologies derived from anthropology, art history, literary studies and music history to the study of medieval sources. Same as CWL 369, HIST 344, MDVL 369, and RLST 369. (Counts for advanced hours in LAS). Prerequisite: Any course in medieval history, medieval literature, or medieval music.

ARTH 391  Individual Art History Topics  credit: 1 TO 4 hours.
Directed independent research or creative activity. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing in art and design; and consent of instructor, advisor, and associate director of the School.

ARTH 395  Junior Seminar in Art History  credit: 3 hours.
Offers Art History majors grounding in the discipline’s historiography and exposure to diverse historical methods. Provides students with experience in a range of research techniques as preparation for their Senior Seminar. Prerequisite: Junior standing in Art History curriculum or in Art History minor.

ARTH 399  Internship in Art History  credit: 1 TO 3 hours.
Internships to be pre-approved for variable credit. Students will be required to document work completed during the internship with verification of supervisor. Supervisor will also be required to fill out a questionnaire either by mail or on-line. Faculty members will assess work and questionnaires to assign a grade. Approved for S/U grading only. Prerequisite: Junior standing in School of Art and Design.

ARTH 401  Chinese Art  credit: 3 OR 4 hours.
History of Chinese art from earliest times to the present. Same as EALC 401. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 402  Japanese Art  credit: 3 OR 4 hours.
History of Japanese art from earliest times to the twentieth century. Same as EALC 402. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 403  Word and Image in Chinese Art  credit: 3 OR 4 hours.
Study of the diverse correlations between verbal texts and visual images in Chinese art and art theory from the twelfth through seventeenth centuries. Same as EALC 403. 3 undergraduate hours. 3 or 4 graduate hours.

ARTH 410  West African Art and Ideas  credit: 3 OR 4 hours.
Study in depth of West African art styles in time perspective and cultural context, with a special interest in the use of interdisciplinary source materials. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 413  Sacred African Diaspora Arts  credit: 3 OR 4 hours.
Explores African diaspora arts grounded in the diverse aesthetic, philosophical, historical, political, and religious consciousnesses of peoples of African descent living in the Caribbean and the Americas. Focuses on the preservation and ongoing transformations of African visual and religious cultures surviving in African diaspora communities from the period of the trans-Atlantic slave trade to the present. Same as AFST 421. 3 undergraduate hours. 4 graduate hours.

ARTH 415  The Archaeology of Greece  credit: 3 hours.
Same as CLCV 443. See CLCV 443.
ARTH 416  The Archaeology of Italy  credit: 3 hours.
Same as CLCV 444. See CLCV 444.

ARTH 418  Etruscan and Italic Art  credit: 3 OR 4 hours.
History of early Italic and Etruscan sculpture, painting, and architecture from c. 1000 B.C. to the first century B.C. Emphasis on the
international context of Etruscan art and architecture. Same as CLCV 418. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite:
Junior standing or consent of instructor.

ARTH 421  Early Medieval  credit: 3 OR 4 hours.
Christian art of the Roman Empire, the art of early Medieval Europe (including England and Ireland), and of the Eastern Mediterranean
from the third to the eighth centuries. Same as MDVL 421. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing
or consent of instructor.

ARTH 423  Romanesque Art  credit: 3 OR 4 hours.
Art and architecture of the Romanesque period. Same as MDVL 423. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite:
Junior standing or consent of instructor.

ARTH 424  Gothic Art  credit: 3 OR 4 hours.
Arts of western Europe from the end of the Romanesque period until the Renaissance. Same as MDVL 424. 3 undergraduate hours. 3
or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 425  Manuscripts and Early Printing  credit: 3 OR 4 hours.
Surveys manuscript illumination and early book production from 300 to 1500 A.D.; topics include techniques of manuscript illustration
and printing production in such masterpieces as the Vatican Virgil, the Utrecht Psalter, the Book of Kells, the Tres Riches Heures,
the Gutenberg Bible, and Brant's Ship of Fools. Same as CWL 425 and MDVL 425. 3 undergraduate hours. 3 or 4 graduate hours.
Prerequisite: Junior standing or consent of instructor.

ARTH 430  Topics: Italian Art 1300-1500  credit: 3 OR 4 hours.
Special field in the history of painting, sculpture, and architecture of Italy during the Renaissance selected for intensive study.
3 undergraduate hours. 3 or 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours.
Prerequisite: Junior standing or consent of instructor.

ARTH 431  Topics: Northern Art 1300-1500  credit: 3 OR 4 hours.
Special field in the history of painting, sculpture, and minor arts of France, Germany, Spain, and England during the Renaissance
selected for intensive study. Same as MDVL 431. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated to a maximum of 6
undergraduate hours or 8 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 432  Sixteenth-Century Italian Art  credit: 3 OR 4 hours.
Painting, sculpture, and architecture in Italy from 1500 to 1580. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior
standing or consent of instructor.

ARTH 433  Fifteenth-Century Italian Art  credit: 3 OR 4 hours.
Study of Italian painting, sculpture and architecture from circa 1300 to 1500. Same as MDVL 433. 3 undergraduate hours. 3 or 4
graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 435  Italian Baroque Art  credit: 3 OR 4 hours.
Studies Italian painting and sculpture during the period 1580-1700, with particular emphasis on art in Rome. 3 undergraduate hours. 3
or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 436  17th Century Dutch Painting  credit: 3 OR 4 hours.
Studies seventeenth-century art in the Low Countries with extensive treatment of the careers of Rubens and Rembrandt. 3
undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 439  18th Century European Art  credit: 3 OR 4 hours.
Critical survey of the major developments in European painting of the eighteenth century. Emphasis is placed on French artists, but
major figures in England, Spain, and Italy are also considered. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior
standing or consent of instructor.

ARTH 440  Romantic Art  credit: 3 OR 4 hours.
Studies English, French, and German art from the end of the eighteenth century through 1840; focuses on revivalist movements,
historicism, landscape art, and changing conceptions of art and artist during the period. 3 undergraduate hours. 3 or 4 graduate hours.
Prerequisite: Junior standing or consent of instructor.
ARTH 441  Realism to Post-Impressionism  credit: 3 OR 4 hours.
Studies European art from 1850 to 1900, with emphasis on French painting. 3 undergraduate hours. 3 or 4 graduate hours.
Prerequisite: Junior standing or consent of instructor.

ARTH 442  Arts of Colonial Latin America  credit: 3 OR 4 hours.
Introduction to the major art historical, stylistic and iconographic developments of several Latin American countries of the late sixteenth through eighteenth centuries. Themes to be investigate include: the pictorial representation of race; indigenous workshops, traditions, and the birth of European art academies; the constructions of gender; as well as the translation of styles. The course includes field trips to local museums and libraries. Previous introductory level art history of Latin American history course recommended. Same as LAST 442. 3 undergraduate hours. 3 or 4 graduate hours.

ARTH 443  Spanish Art 1700-1900  credit: 3 OR 4 hours.
Introduction to the rich visual cultures of Spain from the arrival of the Bourbon dynasty at the beginning of the eighteenth century through the years immediately following the "National Disaster" and Spain's defeat in the War of 1898. The course will examine a variety of themes: from the mythologized loves of Goya, to the grandeur of canvases recreating Spain's history; from Spanish Romanticism to the development of Modernismo and the advent of Pablo Picasso. Previous introductory level art history course recommended. 3 undergraduate hours. 3 or 4 graduate hours.

ARTH 444  European Art Between the Wars  credit: 3 OR 4 hours.
Study of the leading personalities and movements in European painting, sculpture, and architecture, with emphasis on painting. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 445  Art Since 1940  credit: 3 OR 4 hours.
Critical survey of developments since World War II with emphasis on questions of quality and personal content and with consideration of the most current tendencies. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 446  France and Its Others  credit: 3 OR 4 hours.
Examines the relationship between art and colonialism in nineteenth-century France. Topics include orientalism, primitivism, and exoticism; the central figures include Delacroix, Flaubert, Gerome, and Gauguin. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 447  Surrealism  credit: 3 OR 4 hours.
Explores the emergence and development of Surrealism, from its origins in France during the mid-1920's to its expansion (and popularization) following World War II. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ARTH 112 or ARTH 241.

ARTH 448  Museum Management  credit: 3 OR 4 hours.
This course is concerned with advanced theoretical issues of art museum work, taught by the professional staff of a museum. Topics covered include collections, curatorial issues, educational program planning, trustee relations, public outreach, fundraising, budgeting, and staff organization. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

ARTH 449  Museum Theory and Practice  credit: 3 OR 4 hours.
Same as ANTH 462 and LA 472. See ANTH 462.

ARTH 450  Senior Art-History Honors-BA  credit: 2 TO 5 hours.
Independent guided research and study in a selected area of art history for candidates for the Bachelor of Arts in Art History with departmental distinction. 2 to 5 undergraduate hours. No graduate credit. May be repeated to a maximum of 5 hours. (Counts for advanced hours in LAS). Prerequisite: Senior standing in the art history curriculum; a cumulative grade point average of 3.25; an art history grade point average of 3.5; and consent of instructor, department advisor, and associate director of the School.

ARTH 451  Senior Art-History Honors-BFA  credit: 2 TO 5 hours.
Directed independent research and study for honors. 2 to 5 undergraduate hours. No graduate credit. May be repeated to a maximum of 5 hours. Prerequisite: Senior standing in Fine and Applied Arts art history, a cumulative grade point average of 3.0, and consent of instructor, advisor, and associate director of the School.

ARTH 452  Topics in Art History  credit: 1 TO 4 hours.
Variable content; consult the Class Schedule for current topics. May be repeated if topics vary. Prerequisite: Junior standing or consent of instructor.

ARTH 455  Senior Seminar in Art History  credit: 3 hours.
Required seminar for undergraduate majors that offers students practical experience in research techniques. Focuses on a specialized theme of the professor's choice, and will incorporate extensive reading in a specific field of Art History and the completion of a
substantial research paper. 3 undergraduate hours. No graduate credit. May be repeated to a maximum of 6 undergraduate hours. Prerequisite: ARTH 395.

ARTH 501  Seminar in Chinese Art  credit: 4 hours.
Investigation of selected phases, concepts, and problems of the art of China; intensive reading and reports. Same as EALC 501. May be repeated to a maximum of 12 hours. Prerequisite: ARTH 401 or consent of instructor.

ARTH 510  Seminar in African Art  credit: 4 hours.
This seminar includes a variety of topics, such as African Diaspora Theory, Contemporary African Art, Performance Art in Africa, Tourist art in Africa. Each graduate seminar will have a significant reading list with weekly responses, as well as a research paper and presentation. Same as AFST 509. May be repeated to a maximum of 20 hours. Prerequisite: Consent of instructor.

ARTH 515  Seminar in Ancient Art  credit: 4 hours.
Research seminar in subject selected from the art and architecture of the ancient period. Same as CLCV 515. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARTH 520  Seminar in Classical Archaeology  credit: 4 hours.
Same as CLCV 520. See CLCV 520.

ARTH 522  Studies in Medieval Art  credit: 4 hours.
Research seminar in subjects selected from the art and architecture of the medieval period. Same as MDVL 522. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARTH 530  Seminar Italian Art  credit: 4 hours.
Special problems in the history of Italian Renaissance art. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARTH 531  Seminar in N. Renaissance Art  credit: 4 hours.
Research seminar in subjects selected from the art of the Northern Renaissance. Same as MDVL 540. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARTH 535  Seminar in Baroque Art  credit: 4 hours.
Research seminar in problems selected from the art of seventeenth-century Europe. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARTH 539  Academies of Art  credit: 4 hours.
Academies, schools of art, and training workshops, have been educational, administrative, political and economic centers for the debate, control, dissemination, and legitimization of the theories, teaching and practice of the "Fine Arts." This seminar analyzes the aims, parameters and meanings ascribed to these heavily invested and historically empowered sites through an examination of historiography, as well as models traditionally used in their defense or denigration.

ARTH 540  Seminar in Art 1750 to 1900  credit: 4 hours.
Intensive study of selected problems in European art. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARTH 541  Seminar in Modern Art  credit: 4 hours.
Investigation of special problems in the history of twentieth-century art. Students present reports of their research. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARTH 546  Seminar in Contemporary Art  credit: 4 hours.
Intensive study of selected problems or artists. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

ARTH 550  Seminar in American Art  credit: 4 hours.
Investigation of selected problems in the history of American art. May be repeated to a maximum of 12 hours. Prerequisite: ARTH 350 and ARTH 351, or consent of instructor.

ARTH 560  Collections, Museums & Patrons  credit: 4 hours.
Deals with specific aspects of art collecting practices, patronage, and/or museology. Introduces students to the major debates and history of private and public art collections, origins of museums and patronage, the new museology. Taught in alternate years by art history faculty with different specializations. May be repeated in separate terms to a maximum of 8 hours. Prerequisite: Graduate standing or consent of instructor.

ARTH 591  Individual Readings  credit: 2 TO 4 hours.
 Directed readings in special fields or aspects of history of art not provided in depth by the current course offerings. Registration allowed for each section is 2 to 4 hours. Prerequisite: Consent of instructor.

**ARTH 593**  **Theory and Methodology**  credit: 4 hours.
Investigation of the theory and practice of art history as a discipline. Discussions address historiographical and methodological issues and include both traditional and recent approaches to the discipline. Prerequisite: Consent of instructor.

**ARTH 595**  **Internship in Art History**  credit: 3 TO 6 hours.
Internships to be pre-approved for variable credit. Students will be required to document work completed during the internship with verification of supervisor. Supervisor will also be required to fill out a questionnaire either by mail or online. Faculty members will assess work and questionnaires to assign a grade. Approved for S/U grading only. May be repeated to a maximum of 12 hours. Prerequisite: Graduate standing in the School of Art and Design.

**ARTH 599**  **Thesis Research**  credit: 0 TO 16 hours.
Guidance in research and writing theses for advanced degrees. Approved for S/U grading only. May be repeated. Prerequisite: Graduate standing in art history.
ARTS 200  Introduction to Book Arts  credit: 3 hours.
Creative expression and communication through the production of a variety of unique and limited edition books. Students will learn the tools and techniques of binding books by hand while studying the physical and narrative properties of books. Prerequisite: Sophomore standing in Art and Design, in an Art History major, or in the Art History minor.

ARTS 210  Ceramics Sculpture I  credit: 3 hours.
Introduction to materials and techniques involved in the ceramic process. By achieving technical expertise using clay, students can begin to develop a personal artistic language employing clay as an art medium. Students will explore a variety of assignments employing hand-building techniques, as well as investigating various firing processes. Prerequisite: Sophomore standing or consent of instructor.

ARTS 230  Jewelry/Metals I  credit: 3 hours.
Design and execution of jewelry and related objects through fabrication, focusing on surface embellishment, joining, and finishing processes; exploring metal as a medium of personal aesthetic expression. Prerequisite: Sophomore standing or consent of instructor.

ARTS 231  Jewelry/Metals II  credit: 3 hours.
Additional experience and experimentation in designing and executing jewelry and related objects through fabrication, refinement of surface embellishment, joining, and finishing skills; further exploration of metal as a medium of personal aesthetic expression. Prerequisite: ARTS 230.

ARTS 240  Introduction to New Media  credit: 3 hours.
This course is a broad survey of the history, theory and practice of new media art forms. Different models of professional practice, including studio and client driven practices, will be explored through lecture, discussion and research components. Students will also be introduced to the use of some common new media tools. Prerequisite: Foundation requirements for art and design. Open to New Media majors or consent of instructor.

ARTS 250  Life Drawing  credit: 3 hours.
Representational and interpretive drawing from life explored through close observation and structural analysis of the human figure and other subject matter. May be repeated to a maximum of 6 hours. Prerequisite: ARTF 102 and ARTF 104.

ARTS 251  Painting I  credit: 3 hours.
Familiarizes students with basic oil painting materials, techniques, and concepts. Topics include composition, color theory, historical painting techniques, illusionistic space, and paint handling and application. Exploration and discussion of the ways in which paintings make meaning. Prerequisite: ARTF 102, ARTF 104.

ARTS 252  Making and Meaning  credit: 3 hours.
Introduction to the relationship of material, method, and process to meaning in art practice. Through research, critique, and application of concepts in material studio processes, students will explore a diverse range of methods of achieving meaning in an artwork. May be repeated to a maximum of 6 hours. Prerequisite: ARTS 102 and ARTS 104.

ARTS 253  Life Drawing II  credit: 2 hours.
Prerequisite: ARTS 250.

ARTS 254  Painting II  credit: 3 hours.
Continuation of ARTS 251. Further develops the materials, skills, and issues introduced in that course; also considers additional painting media; explores and examines traditional and contemporary issues in painting. Prerequisite: ARTS 251.

ARTS 260  Basic Photography  credit: 3 hours.
Investigates basic elements comprising a photograph; explores the photogram, tone, and texture as expressive media; and works with the camera, exposure meter, and film and print developing in black and white and digital. Student must furnish camera. Prerequisite: Freshman standing in Art and Design or in Art History major or minor; or consent of instructor.

ARTS 261  Photography II  credit: 3 hours.
Uses hand held cameras (35mm and 2-1/4") and digital and silver processes to express content with emphasis on the development of a personal aesthetic. See Class Schedule for average cost; student must furnish camera. Prerequisite: ARTS 260.

ARTS 262 View Camera credit: 3 hours.
Includes work with camera movements, black and white exposure, and development relationships as tools of creative expression; covers basic lighting techniques and studio procedures. Most equipment furnished. Prerequisite: ARTS 261 or consent of instructor.

ARTS 263 Color Photography credit: 3 hours.
Explores the potential of color prints and digital media as forms for creative expression. Student must furnish camera. Prerequisite: ARTS 260.

ARTS 280 Sculpture I credit: 3 hours.
Introduction to basic concepts, processes, and materials in sculpture, with an emphasis on the relationship among these three aspects of producing works of art. Prerequisite: ARTF 102 and ARTF 104.

ARTS 281 Sculpture II credit: 3 hours.
Continuation of ARTS 280. Explores the relationship of sculptural materials and media to meaning; research into the historical, contemporary, and contextual semiotics of materials in order to generate meaning. Prerequisite: ARTS 280.

ARTS 299 Spec Topics in Studio Art credit: 3 hours.
Special topics in Studio Art Courses. Topics and subject matter to be published in course listings. May be repeated up to 6 hours in a semester, to a maximum of 12 total hours. Prerequisite: Sophomore standing in Art and Design.

ARTS 310 Ceramics Sculpture II credit: 3 hours.
Students will develop more sophisticated techniques and processes necessary to develop their personal voice and take more responsibility for concept, process and material in their work. Emphasis will stress processes related to creating ceramic sculpture such as hand construction techniques, kiln firing, clay and glaze experimentation. Prerequisite: ARTS 210 and junior standing in curriculum in crafts.

ARTS 330 Jewelry Metals III credit: 3 hours.
The design and production of jewelry and related objects with additional experience in manipulative techniques such as casting, electroforming, surface decoration, enamelling, complex construction and forming. Prerequisite: ARTS 231 and enrollment in the crafts curriculum.

ARTS 331 Jewelry Metals IV credit: 3 hours.
Expands the general techniques of ARTS 330 with emphasis on experimentation and development of personal style through advanced techniques of holloware, complex construction, enamelling, electroforming and plating, forging and the use of varied materials. Prerequisite: ARTS 330.

ARTS 332 Metal Technology credit: 2 hours.
Understanding of the working properties of nonferrous metals. Experimentation with little known processes of metalwork to be subjects of individual research. May be repeated to a maximum of 4 hours. Prerequisite: ARTS 330 and junior standing in crafts, or consent of instructor.

ARTS 333 Enamelling credit: 3 hours.
 Exploration and experimentation in image development and color through traditional enamelling processes; emphasis on cloisonne, champeleve, bassetaille, plaque-a-jour, limoges, and grisaille; exploration of enamel and metal as a medium of personal aesthetic expression. May be repeated to a maximum of 9 hours. Prerequisite: ARTS 230 or consent of instructor.

ARTS 334 Metalsmithing credit: 3 hours.
Experience and experimentation in designing and executing holloware through traditional forming processes; emphasis on sinking, angle raising, crimping, stretching, seaming and snarling, cold forging, tube and spiculum forming, planishing, surface embellishment, and patination; exploration of metal as a medium of personal aesthetic expression. May be repeated to a maximum of 12 hours. Prerequisite: ARTS 230 or consent of instructor.

ARTS 340 The Art of 3D Imaging credit: 3 hours.
Investigation of the three-dimensional modeling capabilities of 3D Studio Max software through a series of original tutorials, class projects and individual problems. The emphasis will be on quality of form and content rather than technical expertise. The end result will culminate in the understanding and production of limited edition digital prints. This course may not be repeated for credit.

ARTS 341 Image Practice credit: 3 hours.
Looks at the production and reception of images through a combination of historical, theoretical and practical perspectives. A variety of contexts from contemporary art, design and popular culture will be explored through research and visual projects. Special consideration
will be given to current forms of reproduction, with students learning and utilizing common methods for rendering and realizing still images, including both print and screen-based output. Prerequisite: Junior standing.

**ARTS 343  Time Arts I  credit: 3 hours.**
Explores the potential of time-based media for creative expression and communications within the context of visual art and design. Classroom discussion will focus on historical and contemporary examples of time arts, written materials, and student work. Hands-on projects will introduce tools, issues and strategies particular to creating and analyzing work based in time. Prerequisite: Junior standing.

**ARTS 344  Interactivity I  credit: 3 hours.**
Introduction to the conceptualization and construction of interactive experience for art and design. Interaction will be examined as technical, structural, social, and historical. Work will include practice, research, discussion, and lecture. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing.

**ARTS 350  Intermediate Studio I  credit: 4 hours.**
Combined painting, sculpture and new media studio. Self-directed arts practice. Individual and group critique; includes seminars, discussions, demonstrations, visiting artists and critics, and field trips. Interaction and collaboration among students in painting, sculpture and new media. Prerequisite: ARTS 254 or ARTS 281 or ARTS 240.

**ARTS 351  Intermediate Studio II  credit: 4 hours.**
Continuation of ARTS 350. Combined painting, sculpture and new media. Self-directed arts practice. Individual and group critique; includes seminars, discussions, demonstrations, visiting artists and critics, and field trips. Interaction and collaboration among students in painting, sculpture and new media. Prerequisite: ARTS 350.

**ARTS 352  Intermediate Studio II  credit: 3 hours.**
Continues the exploration of the interrelationship of drawing and painting. Prerequisite: ARTS 350 and junior standing in Painting.

**ARTS 360  Photography III  credit: 3 hours.**
Explores creative expression through the medium of photography. Students select format and process (i.e., black and white, color, mixed media) based on prior experience; group critiques held frequently; initial opportunity to experiment in personally selected directions which will be refined and amplified in ARTS 460. May be repeated to a maximum of 12 hours. Prerequisite: Junior standing in Photography or consent of instructor.

**ARTS 361  Alternative Processes  credit: 3 hours.**
Explores cyanotype, Van-Dyke Brown, Bichromate Printing and other historical and mixed media processes. Prerequisite: Two art photography courses including ARTS 261, or consent of instructor. Background in drawing, design, and art history courses will be expected.

**ARTS 362  Photography Workshop  credit: 3 hours.**
Advanced course on a special topic: see Class Schedule section note for description. Prerequisite: Junior or senior standing in art and design; or consent of instructor based upon announced criterion that varies with topic.

**ARTS 363  RAW Photography  credit: 3 hours.**
An advanced Photoshop course for the student interested in a digital approach to Fine Art Photography. Students will explore the use and conversion methods of the RAW digital process, and learn how to extract, control, and enhance digital image files. Over the course of the semester, an effective and personal workflow within the Photoshop environment will be developed. Access to a digital SLR camera is required. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: Junior or above standing in Art and Design, or consent of the instructor. ARTS 260 and ARTS 261 are suggested.

**ARTS 391  Independent Study  credit: 1 TO 4 hours.**
Directed independent creative activity or research. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing in Art and Design; and consent of instructor, advisor, and associate director of the School.

**ARTS 392  Current Art Issues Seminar  credit: 2 hours.**
Seminar with readings, lectures, discussions on ideas and issues affecting contemporary art. Attendance is required at visiting artists’ and scholars’ lectures and field trips. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing in Fine and Applied Arts or consent of instructor.

**ARTS 393  Contemporary Art and Ideas  credit: 3 hours.**
Advanced study of photographic issues and the creative process. Discusses creativity, aesthetics, criticism, and current imagery, as well as photography’s relationship to other media. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing in Photography or consent of instructor.

**ARTS 399  Internship in Studio Arts  credit: 1 TO 4 hours.**
Internships to be pre-approved for variable credit. Students will be required to document work completed during the internship with verification of supervisor. Supervisor will also be required to fill out a questionnaire either by mail or on-line. Faculty members will access work and questionnaires to assign a grade. Approved for S/U grading only. Prerequisite: Junior standing in School of Art and Design.

**ARTS 400 Advanced Book Arts**  credit: 3 OR 4 hours.
Advanced study of the history and techniques of hand bookbinding. Variations on binding structures and emphasis on creative expression through mixed media, collage, painting, photography, and writing. Field trips to book collections. Prerequisite: ARTS 200, and junior standing in Art and Design or consent of instructor. 3 undergraduate Hours. 4 graduate Hours.

**ARTS 401 Digital Book Design**  credit: 3 OR 4 hours.
Design and production of artists' books using computer software and printers. Students will acquire skills needed to design and prepare creative artists' books for publication. A collaborative book will be designed and printed on an offset press. Computer literacy preferred but not required. Prerequisite: ARTS 200, and a Junior standing in Art and Design or consent of instructor. 3 undergraduate hours. 4 graduate hours.

**ARTS 402 Book Arts Seminar**  credit: 3 OR 4 hours.
Advanced study of the history, literature, aesthetics, and criticism of the Book Arts. Prerequisite: Junior standing in Art and Design or consent of instructor. 3 undergraduate hours. 4 graduate hours.

**ARTS 410 Advanced Ceramics Sculpture**  credit: 3 OR 4 hours.
Students will develop more sophisticated techniques and processes necessary to develop their personal ideas. Emphasis will be placed on processes related to creating ceramic sculpture such as kiln firing, clay and glaze experimentation. At this level, the student begins to take more responsibility for concept, process and material in their work. 3 undergraduate hours. 4 graduate hours. May be repeated up to 15 undergraduate hours or 20 graduate hours. Prerequisite: ARTS 210 and ARTS 310.

**ARTS 412 Ceramics**  credit: 2 TO 4 hours.
Ceramic design with emphasis on the development of professional style and personal expression. May be repeated to a maximum of 6 hours. Prerequisite: Consent of instructor.

**ARTS 430 Jewelry Metals V**  credit: 5 hours.
Expands the general techniques of ARTS 331 with emphasis on experimentation and development of personal style. 5 undergraduate hours. No graduate credit. Prerequisite: ARTS 331.

**ARTS 431 Jewelry Metals VI**  credit: 5 hours.
Continuation of ARTS 430; emphasis on experimentation and development of personal style, a portfolio, and a senior exhibition. 5 undergraduate hours. No graduate credit. Prerequisite: ARTS 430.

**ARTS 443 Time Arts II**  credit: 3 OR 4 hours.
Provides semester-long, in-depth explorations of single time arts topics. Using the ideas and basic tools from Time Arts I, students will study the advanced concepts and techniques particular to individual time arts genres while producing their own work. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 hours. Prerequisite: ARTS 442 or consent of instructor.

**ARTS 444 Interactivity II**  credit: 3 OR 4 hours.
Further exploration of interaction, with an increased emphasis on realization and application of designed interactive experience, and depth of exposure to particular technical platforms. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate or 8 graduate hours. Prerequisite: ARTS 440 and consent of instructor.

**ARTS 445 Special Topics Workshop**  credit: 3 OR 4 hours.
Course will explore art making applications of emerging technologies with invited instructors from within and outside the school. 3 undergraduate hours. 4 graduate hours. May be repeated in the same or subsequent terms to a maximum of 12 undergraduate hours or 16 graduate hours as topics vary. Prerequisite: Junior standing.

**ARTS 449 Senior Seminar in New Media**  credit: 3 hours.
Students will explore current issues in New Media. Both historical and contemporary examples of significant artwork will be studied and analyzed, and this will be supplemented by extensive reading, writing, and classroom discussion. By the end of the course students will be able to contextualize their own art practice as it relates to both the precentdents and current evolution of New Media. 3 undergraduate hours. Prerequisite: ARTS 450, open to New Media majors or consent of the instructor.

**ARTS 450 Advanced Studio I**  credit: 4 hours.
First of two capstone courses in studio arts practice, individualized study for painting, sculpture, and new media majors. Explores and develops conceptual and aesthetic interests, topics, and projects; expands and refines material knowledge and expertise;
develops research strategies and methodologies. Includes individual and group critiques, dynamic interaction with faculty and peers. 4 undergraduate hours. Prerequisite: ARTS 351 Intermediate Studio II.

ARTS 451  **Advanced Studio II**  credit: 4 hours.
Continuation of ARTS 450. Second of two capstone courses in studio arts practice, providing individualized study for painting, sculpture, and new media majors. Explores and develops conceptual and aesthetic interests, topics, and projects; expands and refines material knowledge and expertise; develops research strategies and methodologies. Includes individual and group critiques, dynamic interaction with faculty and peers. 4 undergraduate hours. Prerequisite: ARTS 450.

ARTS 454  **Advanced Drawing**  credit: 3 hours.
An advanced studio course that considers a variety of activities defined traditionally, historically and contemporarily as drawing. Students will investigate the questions of what drawing is and how it communicates meaning. They will use and experiment with a wide variety of materials and concepts as they work on in-class projects and outside assignments. Investigate the work of contemporary artists to see how the practice of drawing is being redefined, and consider the influence drawing has had on design and visual culture. Students will be encouraged to experiment, innovate, and develop new visual vocabularies. Prerequisite: Two prior courses in drawing; junior standing.

ARTS 455  **Advanced Painting**  credit: 3 hours.
An advanced studio course focusing intensively on the practice of painting. Students will research contemporary painting and its recent history, discuss its relevance and place in contemporary art, and investigate and articulate their own conceptual motivations in using painting media. Topics will include the relationship of the history of painting to how its use generates meaning in a contemporary context. Students will engage in self-generated studio practice; this work will be the basis of group and individual discussion and critique. No graduate credit. Prerequisite: ARTS 251 and ARTS 254; junior standing.

ARTS 456  **Advanced Sculpture**  credit: 3 hours.
Advanced studio course designed to integrate basic sculpture and other 3-D studio skills with advanced knowledge of contemporary sculptural practices and materials, along with an understanding of concepts and theories influencing contemporary sculptural art. Studies will investigate topics including site specificity, context, and criticality as they develop research and studio production methods that allow them to generate work that is relevant to current and future discourse in the field. No graduate credit. Prerequisite: ARTS 280 and ARTS 281; junior standing.

ARTS 457  **Art in Context**  credit: 3 hours.
Focuses on the relationship between artworks and their historical, institutional, spatial, geographic, architectural or other contexts for the purpose of engaging in a critical analysis of artworks, as well as developing informed, intentional studio production. Students will encounter topics related to a critical and ethical understanding of context including site-specificity, phenomenology, public art, Situationism, relational aesthetics, and the production of space through social and political process such as building and mapping. The goal is to investigate and understand the dynamic relationship between art and its context. No graduate credit. Prerequisite: Junior standing.

ARTS 460  **Advanced Photography**  credit: 3 hours.
Concentrated use of photographic processes for creative expression with emphasis on professionalism and the production of a photographic portfolio. May be repeated to a maximum of 6 hours. Prerequisite: Senior standing in Photography, or consent of instructor.

ARTS 490  **Senior Honors**  credit: 2 TO 5 hours.
Independent creative activity, guided study, or research for honors. May be repeated to a maximum of 5 hours. 2 to 5 undergraduate hours. No graduate credit. Prerequisite: Senior standing in Art & Design, a cumulative grade point average of 3.0; and consent of instructor, advisor, and associate director of the School.

ARTS 492  **Contemporary Issues in Art**  credit: 3 OR 4 hours.
Advanced study of issues and literature relevant to emerging new media. Discusses the intersection of art, technology, and society. Explores aesthetics, criticism, historical work, and current work in this area. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate or 8 graduate hours. Prerequisite: ARTH 111, ARTH 112, and junior standing.

ARTS 499  **Special Topics in Studio Art**  credit: 1 TO 4 hours.
Special topics in studio arts. Topics and subject matter to be published in course listings. 1 to 3 undergraduate hours. 1 to 4 graduate hours. May be repeated to a maximum of 9 undergraduate hours or 12 graduate hours if topics vary. Prerequisite: Senior standing or consent of instructor.

ARTS 591  **Graduate Studio**  credit: 2 TO 8 hours.
Directed individual creative activity or research. May be repeated to a maximum of 20 hours. Prerequisite: Graduate standing.

ARTS 593  **Seminar: Methods Criticism**  credit: 1 TO 4 hours.
Prerequisite: Graduate standing in art.

ARTS 595  **Graduate Laboratory**  credit: 4 TO 12 hours.
Individually directed research and personal. Prerequisite: Enrollment in the MFA program in Art & Design or consent of departmental graduate committee.
Asian Studies

East Asian Languages and Cultures
Head of Department: Karen Kelsky
Department Office: 2090 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 244-1432
www.ealc.uiuc.edu

ASST 104  Asian Mythology  credit: 3 hours.
Same as RLST 104. See RLST 104.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

ASST 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

ASST 218  S Asian Cultural Landscapes  credit: 3 hours.
Same as LA 218. See LA 218.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

ASST 286  Southeast Asian Civilizations  credit: 3 hours.
Same as ANTH 286 and HIST 225. See ANTH 286.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

ASST 346  Gov & Pol of South Asia  credit: 3 hours.
Same as PS 346. See PS 346.

ASST 347  Gov & Pol of Middle East  credit: 3 hours.
Same as PS 347. See PS 347.

ASST 390  Individual Study  credit: 2 TO 4 hours.
Directed readings in the languages and literatures of South Asia, Southeast Asia, or the Near East. The area selected depends on the student's interest. Prerequisite: Consent of instructor.

ASST 391  Honors Tutorial  credit: 2 TO 4 hours.
Tutorial in the civilizations of South Asia, Southeast Asia, or the Near East. The geographical area or nation and discipline depend on student interests. All students submit a substantial paper. May be repeated to a maximum of 6 hours. Prerequisite: Completion of two honors activities, work in Asian studies, and consent of instructor.

ASST 398  Colloquium in Asian Studies  credit: 3 hours.
Prerequisite: Junior standing.

ASST 402  Transnational Islam, Europe-US  credit: 3 OR 4 hours.
Same as ANTH 402 and RLST 409. See ANTH 402.

ASST 445  Tutorials in E Asian Languages  credit: 2 TO 5 hours.
Tutorials at the elementary, intermediate, and advanced levels in Asian languages not regularly offered are available with the consent of the head of the Department of East Asian Languages and Cultures. 2 to 5 undergraduate hours. 2 to 4 graduate hours. Graduate credit is given only for work beyond the elementary level. May be repeated up to 6 terms successively, but no more than 16 hours of graduate credit may be accumulated in any one language. Prerequisite: Consent of head of the Department of East Asian Languages and Cultures.

ASST 465  Oceania's Peoples and Cultures  credit: 3 OR 4 hours.
Same as ANTH 465. See ANTH 465.
ASST 486  **Peoples of Mainland SE Asia**  credit: 3 OR 4 hours.
Same as ANTH 486. See ANTH 486.

ASST 550  **Seminar in Asian Studies**  credit: 4 hours.
Seminar on selected Asian topics. May be repeated to a maximum of 12 hours if topics vary. Topics will vary with instructor.
Prerequisite: Consent of instructor.

ASST 590  **Individual Study and Research**  credit: 2 TO 12 hours.
Supervised individual investigation or study of a topic not covered by regular course offerings. The topic selected by the student and the proposed plan of study must be approved by the student's adviser and the instructor who supervises the work. Approved for both letter and S/U grading. May be repeated. Prerequisite: Consent of instructor.
Astronomy

Astronomy
Chair of Department: You-Hua Chu
Department Office: 103 Astronomy Building, 1002 West Green, Urbana
Phone: 333-3090
www.astro.uiuc.edu

ASTR 100 Perspectives in Astronomy credit: 3 hours.
One-term introduction to astronomy. The nature of science; sun, planets, and moons; origin of the solar system; nature and evolution of stars; exploding stars; stellar remnants, including white dwarfs, neutron stars, and black holes; molecules in space; galaxies and quasars; past and future of the universe; and life in the universe. Lectures and observation; a field trip to Parkland Staerkel Planetarium may be required, nominal charge. Intended for non-science majors; students with credit in PHYS 102 are encouraged to take ASTR 121 and/or ASTR 122. Credit is not given to students with credit in ASTR 121, ASTR 122, ASTR 210, PHYS 212, or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ASTR 113 The Sky credit: 3 hours.
Examines the visual aspects and phenomena of the sky; astronomical lore and history. Prerequisite: ASTR 100, ASTR 121 or ASTR 122, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ASTR 121 The Solar System credit: 3 hours.
Introductory survey of the universe; structure and motions of the earth and moon; planetary motions; physical nature of the planets; comets and meteors; origin and evolution of the solar system. Emphasis will be placed on problem-solving and scientific methods. Two lectures and one discussion each week, and observing sessions during the term. Not intended for physical science majors; students with credit in PHYS 211 are encouraged to take ASTR 210. Credit is not given to students with credit in ASTR 100, ASTR 210, GEOL 116, or PHYS 212.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

ASTR 122 Stars and Galaxies credit: 3 hours.
Introduction to astrophysical objects and phenomena beyond the solar system, and the governing basic physical principles; galaxies, quasars, and structure of the universe; cosmology; the Milky Way; the interstellar medium and the birth of stars; distances, motions, radiation, structure, evolution, and death of stars, including neutron stars and black holes. Emphasis will be placed on problem-solving and scientific methods. Two lectures and one discussion each week, and observing sessions during the term. Not intended for physical science majors; students with credit in PHYS 211 are encouraged to take ASTR 210. Credit is not given to students with credit in ASTR 100, ASTR 210, or PHYS 212.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

ASTR 131 The Solar System Lab credit: 1 hours.
Laboratory studies which complement the lecture course, ASTR 121, The Solar System. Includes a visit to Staerkel Planetarium, observations with telescopes on campus, and computer labs. Using telescopes and their eyes, students will observe constellations, the Sun, the Moon and Planets. A robotic camera called Stardial will be used to track the motion of asteroids. Computer exercises simulate observations of the Sun, Jupiter, and Mercury. Prerequisite: Credit in ASTR 100 or ASTR 121, or concurrent registration in ASTR 121.

ASTR 132 Stars and Galaxies Lab credit: 1 hours.
Laboratory studies which complement the lecture course, ASTR 122, Stars and Galaxies. Includes a visit to Staerkel Planetarium, observations with telescopes on campus, and computer labs. Using telescopes and their eyes, students will observe constellations, the Moon and planets, star clusters, nebulae and galaxies. A robotic camera called Stardial will be used to study variable stars and nebulae. Computer exercises simulate observations of stars, star clusters and galaxies. Prerequisite: Credit in ASTR 100 or ASTR 122, or concurrent registration in ASTR 122.

ASTR 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
ASTR 210  **General Astronomy**  credit: 3 hours.

Survey of modern astronomy for students with background in physics. Topics include: the solar system; nature and evolution of stars; white dwarfs, neutron stars, and black holes; galaxies, quasars and dark matter; large scale structure of the universe; the Big Bang; and Inflation. Emphasis will be on the physical principles underlying the astronomical phenomena. Prerequisite: Credit or concurrent registration in PHYS 212.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ASTR 330  **Extraterrestrial Life**  credit: 3 hours.

Scientific discussion of the search for extraterrestrial life. Topics include: cosmic evolution (protons to heavy elements to molecules); terrestrial evolution (chemical, biological, and cultural); high technology searches for extraterrestrial life in the solar system (Mars, Venus, outer planets); and beyond the solar system (Drake equation and current SETI projects).

ASTR 390  **Individual Study**  credit: 1 TO 4 hours.

Individual study at an advanced undergraduate level. Prerequisite: Consent of advisor and of staff member who supervises the work.

ASTR 401  **Scientific Writing for Astro**  credit: 1 hours.

Development of journal-style writing skills. Papers written in accordance with the Astrophysical Journal Manual of Style on topics approved by the instructor. Emphasis on developing adequate and critical coverage of the topic, brevity compatible with clarity, and effective presentation. Proper referencing, footnotes, and bibliography are covered. 1 undergraduate hour. Prerequisite: Concurrent enrollment in a designated 400-level astronomy course.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ASTR 404  **Stellar Astrophysics**  credit: 3 hours.

Introduction to astrophysical problems, with emphasis on underlying physical principles; includes the nature of stars, equations of state, stellar energy generation, stellar structure and evolution, astrophysical neutrinos, binary stars, white dwarfs, neutron stars and pulsars, and novae and supernovae. 3 undergraduate hours. Graduate students in Astronomy will not receive credit in ASTR 404. Prerequisite: PHYS 212; or consent of instructor. Recommended: ASTR 210, PHYS 213, PHYS 214.

ASTR 405  **Solar System and IS Medium**  credit: 3 hours.

Physical processes in the solar system; dynamics of the solar system; physics of planetary atmospheres; individual planets; comets, asteroids, and other constituents of the solar system; extra-solar planets; formation of the solar system, stars, and planets; components of the interstellar medium; ionization and recombination; heating and cooling processes; comparison of theory with observations; composition and characteristics of interstellar dust; dynamics of the interstellar medium; interactions of stars with the interstellar medium: H II regions, planetary nebulae, and supernova remnants. Graduate students in astronomy will not receive credit in ASTR 405. Prerequisite: PHYS 212; or consent of instructor. Recommended: ASTR 210, PHYS 213, PHYS 214.

ASTR 406  **Galaxies and the Universe**  credit: 3 hours.

Nature of the Milky Way galaxy; stellar statistics and distributions, stellar populations, spiral structure, the nucleus and halo. Nature of ordinary galaxies; galaxies in our Local Group, structure of voids and superclusters. Nature of peculiar objects: Seyfert galaxies, starburst galaxies, and quasars. Elementary aspects of physical cosmology. Graduate students in Astronomy will not receive credit for ASTR 406. Prerequisite: PHYS 212; or consent of instructor. Recommended: ASTR 210, PHYS 213, PHYS 214.

ASTR 414  **Astronomical Techniques**  credit: 4 hours.

Introduction to techniques used in modern optical and radio astronomy with emphasis on the physical and mathematical understanding of the detection of electromagnetic radiation; includes such topics as fundamental properties of radio and optical telescopes and the detectors that are used with telescopes. Lectures and laboratory. 4 undergraduate hours. Graduate students in Astronomy will not receive credit for ASTR 414. Prerequisite: MATH 241 or equivalent; PHYS 212; or consent of instructor. Recommended: ASTR 210, PHYS 213, PHYS 214.

ASTR 450  **Astrochemistry**  credit: 4 hours.
ASTR 451  Astrochemistry Laboratory  credit: 3 OR 4 hours.
Same as CHEM 450. See CHEM 450.

ASTR 452  Introduction to Geophysics  credit: 4 hours.
Same as GEOL 452. See GEOL 452.

ASTR 496  Seminar in Astronomy  credit: 1 TO 4 hours.
Lectures on topics of current interest in astronomy and astrophysics; for advanced undergraduates and graduates. See Class Schedule for current topics. Approved for both letter and S/U grading. May be repeated. Prerequisite: Consent of instructor.

ASTR 502  Theory Diffuse Matter Dynamics  credit: 4 hours.
Astrophysical magnetohydrodynamics (MHD) is developed and applied to the interstellar medium; formation, equilibrium and collapse of interstellar clouds; star formation; shock waves and ionization fronts; dynamics of stellar systems and spiral structure; Newtonian cosmology and galaxy formation in the early universe; cosmic electrodynamics. Prerequisite: PHYS 436, PHYS 427, and PHYS 486; or consent of instructor.

ASTR 503  Observational Astronomy  credit: 4 hours.
Techniques and basic results of observational astronomy; gamma ray, x-ray, ultraviolet, visible, infrared, and radio astronomy; photometry, imaging, spectroscopy, and polarimetry; gravitational waves; cosmic rays; neutrinos; positional astronomy; noise; statistics; data analysis; optics. Prerequisite: Consent of instructor.

ASTR 504  Theoretical Stellar Physics  credit: 4 hours.
Application of physical principles to energy generation and flow in astrophysical environments: equations of state; thermonuclear reactions; radiative transport; convection; stellar spectra; nebular spectra; evolution of both single and binary stars; compact stars; accretion disks; thermal and particle history of the universe. Same as PHYS 542. Prerequisite: PHYS 436, PHYS 427, and PHYS 486; or consent of instructor.

ASTR 515  General Relativity I  credit: 4 hours.
Same as PHYS 515. See PHYS 515.

ASTR 516  General Relativity II  credit: 4 hours.
Same as PHYS 516. See PHYS 516.

ASTR 540  Astrophysics  credit: 4 hours.
Same as PHYS 540. See PHYS 540.

ASTR 541  Physics of Compact Objects  credit: 4 hours.
Same as PHYS 541. See PHYS 541.

ASTR 590  Individual Study  credit: 2 TO 8 hours.
Individual study or nonthesis research. May be repeated to a maximum of 16 hours. Prerequisite: Consent of adviser and of staff member who supervises the work.

ASTR 596  Seminar in Special Topics  credit: 0 TO 16 hours.
Approved for both letter and S/U grading. May be repeated. Prerequisite: Consent of instructor.

ASTR 599  Thesis Research  credit: 0 TO 16 hours.
Approved for S/U grading only.
ATMS 100  **Introduction to Meteorology**  credit: 3 hours.
Introduces the student to the basic concepts and principles of meteorology via the interpretation of weather maps and charts; uses current weather information to illustrate key concepts, emphasizes the physical atmospheric processes responsible for weather. By the end of the class students will be able to interpret and make basic weather forecasts as well as be able to explain basic atmospheric phenomena.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

ATMS 120  **Severe and Hazardous Weather**  credit: 3 hours.
Most extreme manifestations of weather and climate are analyzed in terms of their physical basis and their historical, economic and human consequences. Emphasis is placed on the interplay between technological advances, the evolution of meteorology as a science, and the impacts of extreme weather (winter storms, floods, severe thunderstorms, hurricanes, El Nino). Technological advances include satellites, weather radars and profilers, and computer models used for weather prediction. Same as ESES 120.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ATMS 140  **Climate and Global Change**  credit: 3 hours.
Introduces climate change and its interactions with the global environment; surveys the physical, chemical, biological and social factors contributing to global change; includes topics such as greenhouse warming, acid rain, ozone depletion, distinguishes anthropogenic influences and natural variability of the earth system; addresses societal impacts, mitigation strategies, policy options and other human responses to global change. Same as ESES 140.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ATMS 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Special topics each term. May be repeated.

ATMS 201  **General Meteorology**  credit: 3 hours.
Introduction to physical processes in the atmosphere, focusing on those relevant to weather and storms. Emphasizes quantitative problem solving. Topics include atmospheric structure, atmospheric thermodynamics, clouds, synoptic meteorology, weather forecasting, and storms. For students in atmospheric sciences, physics, mathematics, engineering, and other physical and natural sciences. Prerequisite: MATH 220 or MATH 221; credit or concurrent registration in MATH 231 and PHYS 211.

ATMS 202  **Soc Impacts Weather & Climate**  credit: 3 hours.
The study of how weather and climate phenomena have changed the shape of the United States, particularly with regard to traditionally underrepresented populations. Examines the complex relationship between weather and climate and society from both a physical and social perspective. Discussions will be focused around the physical principles driving the weather and climate and how they interact with all aspects of society.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ATMS 301  **Atmospheric Thermodynamics**  credit: 3 hours.
Introduction to fundamental thermodynamic processes that occur in Earth's atmosphere. Defines, describes, and derives various thermodynamic concepts including (1) the conservation of energy, (2) laws of thermodynamics, (3) kinetic theory, (4) phase transitions of water, and (5) thermodynamic processes of the atmosphere. Applies thermodynamic concepts to atmospheric structure and stability, water phase transformations, and energy and mass transport within the atmosphere. Prerequisite: MATH 241 and PHYS 213.

ATMS 302  **Atmospheric Dynamics I**  credit: 3 hours.
Introduction to fundamental dynamical processes in the atmosphere through a descriptive and quantitative analysis of dynamical meteorology at the synoptic and global scale. Covers basic laws of fluid mechanics as applied to the atmospheric sciences, vorticity.
and circulation in 2-D and 3-D flows, boundary layer dynamics and friction, basic concepts of geophysical waves, and baroclinic instability. These topics will be covered both descriptively and mathematically with emphasis on computer representation of the fundamental processes governing atmospheric motion and application of theory to real-world examples. Same as PHYS 329. Prerequisite: MATH 241 and PHYS 213.

ATMS 303 Weather Analysis credit: 4 hours.
Conceptualizes the structure and dynamics of the atmosphere through interpretation and analysis of weather charts, time and cross sections, soundings, and forecast products. Students develop case studies of weather system structure, and participate in discussions of weather processes as depicted by weather maps. Depiction of atmospheric kinematic and dynamic processes on weather charts is emphasized. Students learn conceptual models of the structure of mid-latitude cyclones and convective weather systems, including cyclogenesis, frontogenesis, the process of storm intensification, occlusion and frontolysis. Prerequisite: ATMS 201 and credit or concurrent registration in MATH 241.

ATMS 304 Atmospheric Radiation credit: 3 hours.
Introduction to the laws governing the propagation of electromagnetic radiation in the Earth's atmosphere. Topics include absorption, emission, and scattering of radiation, absorption and scattering properties of atmospheric constituents, the Sun as a source of radiation, the radiative transfer equation, and simple radiative balance models. Emphasis will be placed on the role of radiation in weather and climate, the description of atmospheric optical phenomena, and the application to remote sensing. Prerequisite: MATH 241 and PHYS 212.

ATMS 305 Computing and Data Analysis credit: 3 hours.
Introduction to the statistical treatment and graphical representation of atmospheric sciences data, both in the space and time domain. Emphasis is placed on applications and real-world examples. Discusses relevant statistics, methods of interpolation and least squares, and linear and nonlinear correlations. Students gain experience using MATLAB for data analysis, develop theoretical skills for analyzing and modeling data, and perform virtual experiments and analyze real-world publicly available data sets. Prerequisite: MATH 241 or consent of instructor.

ATMS 306 Cloud Physics credit: 4 hours.
Develops an understanding of microphysical processes occurring within clouds through use of in-situ observations, modeling, and theoretical studies; topics covered include nucleation, diffusional growth of water and ice particles, the warm rain process, the cold rain process (including riming, aggregation, graupel and hail), weather modification, and an introduction to radar meteorology. Prerequisite: ATMS 301.

ATMS 313 Weather Forecasting credit: 4 hours.
Examines the tools and techniques of weather forecasting, with heavy emphasis on actual forecasting. Numerical models used to forecast weather are reviewed and compared. Forecasting using numerical, statistical and probabilistic forecasting techniques are studies. Forecasts of significant winter weather, convection, floods and other weather hazards are emphasized. Students learn the process behind Severe Weather Watches and Warnings, Quantitative Precipitation Forecasts, precipitation Type forecasts, Flood forecasts and forecasts of other significant weather. Prerequisite: ATMS 302, ATMS 303 or consent of instructor.

ATMS 314 Mesoscale Processes credit: 4 hours.
Examination of the structure and dynamics of weather systems that occur on the mesoscale. The course first reviews what is meant by "mesoscale". Examines the structure and dynamics of both free and forced mesoscale circulations. Free circulations are those internal to the atmosphere, such as thunderstorms, mesoscale convective systems, squall lines, hurricanes, jet streaks, and fronts. Forced circulations are those tied to features external to the atmosphere, such as shorelines (the sea breeze), lakes (lake effect storms), and mountains. Prerequisite: ATMS 301, ATMS 302, ATMS 303, or consent of instructor.

ATMS 402 Atmospheric Dynamics II credit: 4 hours.
Rigorous examination of the dynamical nature of various manifestations of the atmospheric circulation. Topics include the intrinsic effects of earth's rotation and stratification, vorticity and potential vorticity dynamics, various forms of boundary layer, wave dynamics (gravity waves and Rossby waves), geostrophic adjustment, cyclogenesis, frontogenesis and a potpourri of instability theories. Same as PHYS 429. Prerequisite: ATMS 301, ATMS 302.

ATMS 405 Boundary Layer Processes credit: 4 hours.
Course will qualitatively and quantitatively describe atmospheric boundary layer characteristics and processes. The course will focus on the turbulent structure of the boundary layer and the factors that influence this structure over a variety of surfaces (e.g., soil, vegetation, marine) and under a variety of atmospheric conditions (e.g., stability, diurnal/nocturnal). This atmospheric layer is important to our daily lives because it is where humans live and it connects the small-scale fluxes of energy and mass to the large-scale atmospheric circulation. Prerequisite: ATMS 301, ATMS 302, and ATMS 304; or consent of instructor.

ATMS 406 Tropical Meteorology credit: 4 hours.
Covers the mesoscale, synoptic scale and planetary scale motions in the tropical circulation. Emphasis will be on delineating the unique characteristics of tropical dynamics. Topics include Hadley circulation, Walker circulation, Julian-Madden oscillation, monsoons, easterly
waves, equatorial waves, hurricanes, the quasi-biennial oscillation, El Nino and the Southern Oscillation. Prerequisite: ATMS 301 and ATMS 302, or consent of instructor.

**ATMS 410  Radar Meteorology**  credit: 4 hours.
Basic principles of radar and references to other ground based remote sensing systems, with emphasis on radar. Discusses principles of conventional and Doppler radar, data processing, and use of Doppler radar in meteorology. Emphasizes radar observations of meteorological phenomena, such as severe thunderstorms and wind shear. Students analyze data from national radar facilities. Prerequisite: ATMS 300 or consent of instructor.

**ATMS 411  Satellite Remote Sensing**  credit: 4 hours.
Review of the basic techniques used in satellite remote sensing of the Earth's surface and atmosphere, as well as other planets in our solar system. Topics include radiative transfer, scattering and absorption processes, the Sun, mathematics of inversion, atmospheric properties and constituents, surface properties, precipitation, radiation budgets, image classification, satellite technology and orbital configurations. Laboratory work on radiative transfer modeling and satellite data analysis emphasized. All students participate in a team project that has novel and practical applications. Prerequisite: MATH 241 and PHYS 212.

**ATMS 420  Atmospheric Chemistry**  credit: 3 hours.
Same as CEE 447 and ENV 450. See CEE 447.

**ATMS 421  Earth Systems Modeling**  credit: 4 hours.
Introduction to systems modeling with applications to the earth and environmental sciences. Basic systems concepts and systems thinking in the contexts of hydrological, climatic, geochemical, and other environmentally relevant systems. Students identify key processes and relationships in systems, represent these elements quantitatively in models, test the models, use them to predict system behavior, and assess the validity of the predictions. No special mathematical or computing background is required. Same as ESES 421, GEOG 421, GEOL 481, and NRES 422. Prerequisite: Junior, senior, or graduate standing in a natural science, geography, natural resources and environmental studies, or engineering.

**ATMS 425  Air Quality Modeling**  credit: 3 hours.
Same as CEE 445. See CEE 445.

**ATMS 444  Arctic Meteorology and Climate**  credit: 4 hours.
Introduction to the fundamental synoptic and dynamical processes of Arctic meteorology and climate as well as the interactions of the Arctic oceans and sea ice with the atmosphere. Prerequisite: ATMS 301 and ATMS 302, or consent of instructor.

**ATMS 447  Climate Change Assessment**  credit: 3 hours.
Provides students with first-hand experience with computer models used to study climate change and permits them to test hypotheses, develop scenarios, learn about the implications of various structures of the modeled system, and evaluate the climatic impacts of anthropogenic emissions. Students perform calculations and produce model scenarios using a web interface to our Integrated Science Assessment Model (ISAM).

**ATMS 448  Climate and Climate Change**  credit: 4 hours.
Course provides an understanding of contemporary climate issues. This is to be accomplished by a systematic examination of: (1) the Earth’s climate system, (2) the instrumental, historical and geological observations of the present and past climates of the Earth, (3) the theories of the causes of past, present and potential future climates, (4) the development of mathematical climate models to quantitatively simulate and understand climate and climate change; and (5) the results of such climate model simulations. Prerequisite: ATMS 301, ATMS 302, and ATMS 304; or consent of instructor.

**ATMS 449  Biogeochemical Cycles**  credit: 4 hours.
Presents the key physical, biological, and chemical concepts of biogeochemical cycles central to understanding the causes of global changes in climate and air quality, focusing on an atmospheric sciences view of these cycles and their influences. Prerequisite: Consent of instructor.

**ATMS 468  Optical Remote Sensing**  credit: 3 hours.
Same as ECE 468 and ATMS 468. See ECE 468.

**ATMS 490  Individual Study**  credit: 1 TO 4 hours.
Individual study or reading at an advanced undergraduate level in a subject not covered in normal course offerings. May be repeated to a maximum of 8 hours. May not be used to satisfy requirements for an M.S. or Ph.D. degree in Atmospheric Sciences. Prerequisite: Consent of advisor and of staff member supervising work.

**ATMS 491  Topics in Atmospheric Sciences**  credit: 2 TO 4 hours.
Special topics in atmospheric sciences at an advanced undergraduate level. May be repeated as topic varies to a maximum of 12 hours per term. Prerequisite: Advanced undergraduate standing and consent of instructor.
ATMS 492  Capstone Undergrad Research  credit: 4 hours.

All senior Atmospheric Sciences undergraduate majors are expected to take a Capstone Undergraduate Research experience. Students will either be engaged in an atmospheric science research project or will participate in an approved internship program with an agency involved in atmospheric science research or in meteorological operations. A research or internship project will be with a program at UIUC or with an allied organization. The student will need to first gain approval for their research or internship. 4 undergraduate hours. No graduate credit. May be repeated to a maximum of 8 undergraduate hours. Prerequisite: Senior standing in Atmospheric Sciences.

ATMS 500  Synoptic-Dynamic Meteorology  credit: 4 hours.

Examines the observed behavior of the atmosphere through the application of physical and hydrodynamical principles to analyses of real meteorological data; develops concepts for studying atmospheric circulations, particularly extratropical cyclones and anticyclones. Laboratory work includes the development of diagnostic techniques suitable for a better understanding of the current weather.

ATMS 501  Mesoscale Meteorology  credit: 4 hours.

Basic concepts and ideas on atmospheric processes that occur on scales of motions from a few kilometers to a few hundred kilometers, a scale loosely classified by meteorologists as "mesoscale". After an introductory discussion of mesoscale classifications and attendant forecast problems, the course will introduce various mesoscale phenomena, internally generated circulations, externally forced circulations, and mesoscale instabilities. Covers all three fundamental aspects of mesoscale meteorology: observations, theory and modeling, with particular emphasis on the dynamics of precipitating mesoscale systems.

ATMS 502  Numerical Fluid Dynamics  credit: 4 hours.

Addresses numerical techniques for solving linear and nonlinear differential equations in initial value fluid flow problems. Students receive a thorough background in the principles used to evaluate numerical methods, the ability to critically interpret these methods as presented in the literature, and in particular, the practical application of these techniques in modeling multi-dimensional flow on high-performance computers. Temporal and directional splitting, finite differencing/volume methods, and adaptive nesting will be discussed. Same as CS 505 and CSE 566. Prerequisite: MATH 241 or MATH 380 or consent of instructor.

ATMS 504  Physical Meteorology  credit: 4 hours.

Examines the physical processes that occur in the atmosphere. Topics include atmospheric thermodynamics, cloud physics and atmospheric radiation.

ATMS 505  Weather Systems  credit: 4 hours.

Examination of the structure and dynamics of mid-latitude weather systems, integrating weather observations, with the current state of dynamic theory, numerical weather prediction models, and the physical principles of atmospheric thermodynamics, cloud and precipitation physics, and radiation to the problems of weather analysis and forecasting. Students will be required to give weather forecast briefings to develop an understanding of the weather forecasting process, and gain experience in communicating weather forecasts. Prerequisite: Graduate standing.

ATMS 510  Precipitation Physics  credit: 4 hours.

Develops an understanding of precipitation processes through cloud observations, microphysics, dynamics, and comprehensive theoretical models; includes growth by condensation, coalescence, and riming; and studies ice crystals, hail, and weather modification. Prerequisite: ATMS 504 or consent of the instructor.

ATMS 511  Atmospheric Radiation  credit: 4 hours.

Physical concepts and various methods of analysis of radiation scattering by atmospheric molecules, particulates, and clouds; infrared radiative transfer in a stratified inhomogeneous atmosphere; radiation and ozone photochemistry in the stratosphere; and remote temperature and composition sensing techniques using satellite radiation data. Prerequisite: ATMS 504 or consent of the instructor.

ATMS 512  Clouds and Climate  credit: 4 hours.

The following topics are addressed to examine the role of clouds in the climate system: aerosols and aerosol cloud interactions, direct, semi-direct and indirect aerosol effects, in-situ measurements of clouds, properties of liquid and ice clouds, precipitation mechanisms and representation in models, scattering by cloud particles and model representations, remote sensing of cloud properties, and representation of clouds in climate models. Prerequisite: ATMS 504 or consent of instructor.

ATMS 520  General Circulation  credit: 4 hours.

Reviews the observed general circulation of the earth's atmosphere; discusses the balance requirements of mass, momentum, and energy conservation; illustrates, by means of mathematical models and laboratory physical models, the important processes which determine the earth's and other planets' general circulation. Prerequisite: ATMS 500 and ATMS 504; or consent of the instructor.

ATMS 521  Advanced Atmospheric Dynamics  credit: 4 hours.

Introduces the language and methods of modern atmospheric dynamics, covering the areas of atmospheric waves, dynamical instabilities, and wave-mean flow interactions. Emphasis is on gaining a physical understanding of atmospheric motions from planetary
down to gravity wave scales, and on solving dynamical problems that arise in research. Prerequisite: ATMS 500 or consent of the instructor.

ATMS 530  **Global Atmospheric Modeling**  credit: 4 hours.

Course provides the student with training in the development, testing and application of physically based climate models. Physically based mathematical models of the earth's climate are used to study the causes of the ice ages which have occurred within a period of 100,000 years during the last two million years, the predictability of climate on the timescale of 1 to 3 months with particular attention to the worldwide El Nino phenomenon, and project the potential climatic consequences of the increasing concentrations of carbon dioxide and other greenhouse gases. Same as CSE 568. Prerequisite: ATMS 401 and ATMS 402, or consent of instructor.

ATMS 535  **Aerosol Sampling and Analysis**  credit: 4 hours.

Same as CEE 545, ENVS 545, and ME 516. See CEE 545.

ATMS 563  **Tchg Higher Ed Earth & Env Sci**  credit: 2 hours.

Introduction of curriculum development, pedagogy and teaching at the university level with special focus on earth sciences and environmental sciences. Course content is structured around the development of a teaching portfolio by each student. Topics covered include: learning styles, syllabus writing and course development, teaching methods, best science teaching practices, incorporating science research in the classroom, technology in the classroom, developing a teaching philosophy, assessment and evaluation. Students will participate in microteaching exercises and develop a teaching portfolio. Prerequisite: Consent of instructor.

ATMS 571  **Professional Development**  credit: 1 hours.

Aimed at professional development in the atmospheric sciences so that students recognize the importance of breadth of knowledge, effective oral and written scientific communication, and other skills they will need as professionals. Approved for S/U grading only. May be repeated to a maximum of 2 hours. Prerequisite: Graduate student in Atmospheric Sciences or consent of instructor.

ATMS 590  **Individual Study**  credit: 2 TO 8 hours.

Individual study or reading in a subject not covered in normal course offerings. Prerequisite: Consent of instructor.

ATMS 591  **Atmospheric Sciences Seminar**  credit: 0 hours.

Seminar on topics of current interest. Approved for S/U grading only. Prerequisite: Consent of instructor.

ATMS 596  **Non-Thesis Research**  credit: 4 hours.


ATMS 597  **Special Topics in Atmos Sci**  credit: 0 TO 4 hours.

Lecture course in topics of current interest; subjects such as tropical meteorology, aerosol physics, and geophysical fluid dynamics will be covered in term offerings on a regular basis. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

ATMS 599  **Thesis Research**  credit: 0 TO 16 hours.

Section A: For master's degree candidates; Section B: For doctoral degree candidates. Approved for S/U grading only. Prerequisite: Consent of instructor.
Aviation

Aviation, Institute of
Interim Director: Tom Emanuel
Institute Office: Administration Building (Old Terminal Building), University of Illinois, Willard Airport, Savoy, IL 61874
Phone: 244-8601
www.aviation.uiuc.edu

AVI 090 Orientation Refresher credit: 0 hours.
Course provides the student with additional aeronautical experience to develop the required proficiency to successfully complete the objectives of a flight course, pilot certificate, or aircraft rating. The flight hours may be divided between dual instruction or solo flight as required to meet the student's needs. The amount of dual vs. solo time and aircraft to be used will be determined by the chief pilot. Students enrolled in this course will also participate in up to 5 hours of research flight experiments. Approved for S/U grading only. May be repeated. Prerequisite: Consent of director.

AVI 100 Intro to Aviation credit: 1 hours.
A weekly class for students who are new to the Institute of Aviation. Provides an overview of field as well as institution-specific information. Approved for S/U grading only.

AVI 101 Private Pilot I credit: 3 hours.
The first of a two course sequence to prepare for FAA Private Pilot certification. Includes classroom instruction on aerodynamics, airplane systems, airport and airplane operations, federal regulations and airplane safety. Also includes 27.5 hours of flight training. Students enrolling in this course will also participate in up to 5 hours of research flight experiments. Private Pilot certification requires the completion of AVI 120. Prerequisite: Consent of director.

AVI 120 Private Pilot II credit: 3 hours.
Second of a two course sequence to prepare for FAA Private Pilot certification. Includes classroom instruction on airplane operation, navigation, night flying and meteorology. Includes 34.5 hours of flight training and 3 hours in a flight simulator in the flight laboratory. Students enrolling in this course will also participate in up to 5 hours of research flight experiments. Students successfully completing final examinations will be issued a Private Pilot certificate. Credit is not given for both AVI 120 and AVI 121. Prerequisite: AVI 101 and consent of director.

AVI 121 Private Pilot Requalification credit: 2 hours.
Forty-five classroom hour transitional course for students entering the Institute with a Private Pilot certificate who desire to continue in the Commercial-instrument sequence (AVI 130 through 210/211). Includes instruction on airplane operations, navigation, and meteorology. Includes 17 hours of flight training and 3 hours in a flight simulator in the flight laboratory. Students enrolling in this course will also participate in up to 5 hours of research flight experiments. Credit is not given for both AVI 120 and AVI 121. Prerequisite: Private Pilot certificate (with a minimum of 60 hours of flight), and consent of director.

AVI 130 Commercial - Instrument I credit: 3 hours.
First of a two course sequence to prepare the private pilot for the instrument rating; reviews cross-country flight with an emphasis on instrument approaches and enroute instrument procedures; includes 45 hours classroom instruction on instrument flying, navigation, aircraft instruments, and regulations. Includes 28.2 hours of flight training and 8 hours in a flight simulator in the flight laboratory. Students enrolling in this course will also participate in up to 5 hours of research flight experiments. Issuance of the instrument rating requires completion of AVI 140. Prerequisite: AVI 120 or AVI 121, and consent of director.

AVI 140 Commercial - Instrument II credit: 3 hours.
Second of a two course sequence to prepare the private pilot for the instrument rating. Includes forty-five hours classroom instruction on advanced maneuvers, aerodynamics, navigation, and aircraft systems. Includes 30.2 hours of flight training and 8 hours in a flight simulator in the flight laboratory. Students enrolling in this course will also participate in up to 5 hours of research flight experiments. Prerequisite: AVI 130 and consent of director.

AVI 184 Aircraft Systems for Pilots credit: 3 hours.
Basic aircraft systems, their components, and theory of operation. Familiarization of Federal Aviation Administration maintenance rules and regulations applicable to pilots.

AVI 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
May be repeated.

AVI 200 Commercial Pilot I credit: 4 hours.
Advanced course in preparation toward the FAA Commercial Pilot Certification. Includes 39.5 hours of flight (22.5 hours dual, 15.5 hours solo, and 1.5 hour flight exam), and 7 hours in a Flight Training Device. Includes 45 hours of classroom instruction covering cross country procedures, appropriate federal aviation regulations, maintenance inspections, and pilot responsibilities. Emphasis is on complex airplane operation and instrument flying procedures. Successful completion is required prior to enrolling in AVI 210 (or AVI 211). Students enrolling in this course will also participate in up to 5 hours of aviation research experiments conducted by Institute of Aviation staff. Prerequisite: Successful completion of AVI 140 and consent of director.

AVI 210  **Commercial Pilot II**  credit: 4 hours.

Final course in a series of advanced lecture/flight courses in preparation for the FAA Commercial Pilot Certificate with Instrument Rating. Includes 38.7 hours of flight (21.5 hours dual, 15.7 hours solo, 1.5 hour flight exam), and 6 hours in a Flight Training Device. Includes 45 hours of classroom instruction covering cross country procedures appropriate federal aviation regulations, commercial maneuvers, and pilot responsibilities. Emphasis is on complex airplane operation and commercial maneuvers. Students enrolling in this course will also participate in up to 5 hours of aviation research experiments conducted by Institute of Aviation staff. Credit is not given for both AVI 210 and AVI 211. Prerequisite: Successful completion of AVI 200 and consent of director.

AVI 211  **Commercial Pilot II - M.E.**  credit: 3 hours.

Final course in a series of advanced lecture/flight courses in preparation for the FAA Commercial Pilot certificate with both the Instrument rating and multi-engine ratings. Includes 45 hours classroom instruction on IFR and VFR cross-country, and VFR commercial maneuvers. Includes 35 hours of flight instruction and training (23 hours multi-engine airplane and 12 hours single-engine airplane) and 2 hours in a flight simulator in the flight laboratory. Includes three flight exams for qualified individuals. Students enrolling in this course will also participate in up to 5 hours of research flight experiments conducted by Institute of Aviation staff. Credit is not given for both AVI 210 and AVI 211. Prerequisite: AVI 200, recommendation from AVI 200 instructor, and consent of director.

AVI 225  **Aviation Weather**  credit: 3 hours.

Provides knowledge of weather related to aviation operations for aviation professionals. Includes interpretation of aviation reports, charts, forecasts, other weather information, and human factor issues related to safe weather decision making in numerous scenarios and applications. Prerequisite: AVI 120 or AVI 121.

AVI 320  **Flight Instructor-Airplane**  credit: 3 hours.

Prepares the commercial pilot for an FAA Flight Instructor (Airplane) certificate. Includes forty-five hours classroom instruction on fundamentals of teaching, student motivation, blocks to learning, stress, cognitive approaches to learning, flight instructor duties/ responsibilities, lesson planning and development, aerodynamics, and pertinent federal aviation regulations. Includes 23.8 hours of flight training and instruction and one hour in flight simulator teaching techniques in the flight laboratory. Also includes a one hour flight check for course completion. Students enrolling in this course will also participate in up to 5 hours of research flight experiments. Prerequisite: Commercial Pilot certificate with instrument rating and consent of director.

AVI 322  **Instrument Flight Instructor**  credit: 1 hours.

Provides the instruction and supervised training for the addition of the Instrument-Airplane rating to the Flight Instructor certificate. Reviews instrument operations with an emphasis on the instructional aspects of these operations. Includes 13.2 hours of flight instruction and supervised training, 15 hours of discussion and a one hour flight test. Students enrolling in this course will also participate in up to 5 hours of research flight experiments. Prerequisite: Commercial Pilot certificate with instrument rating; flight instructor-airplane certificate or concurrent enrollment in AVI 320; and consent of director.

AVI 324  **All Attitude Orientation**  credit: 0 hours.

Primary focus of this course is to teach the recovery of an airplane from emergency inflight attitudes. Teaches the safe handling of an aircraft in all attitudes of flight through the use of various acrobatic maneuvers including loops, snap rolls, slow rolls, Immelmans, Cuban eights, spins, and similar maneuvers, plus takeoff and landing procedures in a tailwheel airplane. Ten flight hours. Students enrolling in this course will also participate in up to five hours of research flight experiments conducted by the Institute of Aviation staff. Approved for S/U grading only. Prerequisite: AVI 101 and AVI 120 or the Private Pilot certificate and consent of director.

AVI 350  **Practice Teaching-Airplane**  credit: 3 hours.

Practice teaching using classroom, audiovisual materials, flight simulators, and airplanes; prepares the certified flight instructor to teach in all modes of aviation education. A minimum of 2 hours of classroom lecture, 3 hours of simulator instruction, and from 1 to 19 hours of airplane instruction is given by the student; an additional 20 hours of classroom lecture-discussion clarifies and explains the proper methods of aviation instruction. Prerequisite: AVI 320 and flight instructor certificate; junior standing; recommendation from AVI 320 flight instructor; and consent of director.

AVI 358  **Human Factors**  credit: 4 hours.

Same as IE 340 and PSYC 358. See PSYC 358.

AVI 380  **Multiengine Land**  credit: 1 hours.

Prepares the commercial pilot for an FAA multiengine land airplane rating; 10 hours of discussion and 15 hours of flight in a multiengine airplane (13 hours dual instruction, one-half hour solo, plus 1.5 hours check ride for qualified individuals). Students enrolling in
this course will also participate in up to 5 hours of research flight experiments conducted by Institute of Aviation staff. Prerequisite: Commercial Pilot certificate and consent of director.

**AVI 381  Cockpit Resource Management**  credit: 3 hours.
Examines societal/cultural, industry, governmental regulatory agency, organizational, group, and individual influences on cockpit behavior and cockpit resource management. Two 90 minute lecture/discussion and one two-hour laboratory/flight periods each week. Laboratory and flight sections use multi-engine flight simulators and multi-engine aircraft. Students will gain experience flying preplanned scenarios in both aircraft and simulators. Materials from lecture/discussions will be emphasized in flights. Prerequisite: Multi-engine instrument rating; junior standing and consent of director.

**AVI 384  Jet Aircraft System and Ops I**  credit: 3 hours.
Operator-oriented study of modern turbo-prop and pure turbine aircraft systems and operation procedures, including aerodynamic performance, fault diagnosis and troubleshooting procedures, and emergency procedures. Prerequisite: AVI 184, AVI 200, or consent of instructor.

**AVI 391  Special Flight Ratings**  credit: 0 hours.
Consists of aeronautical experience that can be used for special FAA certificates and/or ratings such as Airline Transport Pilot or Rotercraft-helicopter. Course may also be used for specialized flight such as advanced multi-engine operations. Sixteen hours of discussion and a variable number of hours of flight instruction (dual and/or solo) to meet the individual needs of the student. Students enrolling in this course will also participate in up to five hours of research flight experiments conducted by the Institute of Aviation staff. Approved for S/U grading only. Prerequisite: Pilot certificate and consent of director.

**AVI 392  Flight Instructor CFI and ME**  credit: 3 hours.
Provides the instruction and supervised training for the addition of the Instrument Airplane and Airplane Multiengine ratings to the Flight Instructor certificate. Reviews instrument operations and multiengine operations with an emphasis on the instructional aspects of these operations. Includes 25 hours of instruction and 45 hours classroom. Prerequisite: AVI 320 and AVI 380. students may not receive credit for this course and for AVI 322.

**AVI 393  Turboprop Pilot Orientation**  credit: 3 hours.
Introduction to multi-engine turboprop airplane operations. Forty-five hours of lecture-discussion, and 16 hours (as pilot and co-pilot) of simulated flight in a Frasca 242T Turboprop aircraft simulator or equivalent. Includes turbine engine theory and operation, normal and emergence procedures, performance calculations, and crew coordination. Prerequisite: AVI 184, AVI 380, AVI 381, and consent of director.

**AVI 429  Hum Comp Interaction Lab**  credit: 4 hours.
Same as IE 446 and PSYC 429. See PSYC 429.

**AVI 441  Interactive Syst Model & Desgn**  credit: 3 OR 4 hours.
Same as IE 441. See IE 441.

**AVI 447  Human Error**  credit: 3 OR 4 hours.
Theoretical basis of human error plus methods for analysis, modeling and prediction in applied settings. Also covers methods for error reduction and error recovery. Same as PSYC 457. Prerequisite: PSYC 358 or ME 340, or consent of instructor.

**AVI 455  Aviation Accident Analysis**  credit: 3 OR 4 hours.
Fundamental concepts of aviation safety augmentation with emphasis on accident prevention through accident investigation, casualty reduction through crashworthy design, and safety enhancement resulting from litigation; accident investigation techniques and crash survival design factors. 3 undergraduate hours. 4 graduate hours. Prerequisite: AVI 101 or consent of instructor.

**AVI 456  Hum Perf and Eng Psych**  credit: 3 OR 4 hours.
Same as IE 445 and PSYC 456. See PSYC 456.

**AVI 495  Aviation Psychology**  credit: 2 TO 4 hours.
Integrates the disciplines of psychology and aviation, discussing the relevance of the psychology of perception, cognition, learning, stress, decision making, and group processes to a variety of aviation concerns related to topics such as cockpit design, pilot error, pilot training, crew communications, and air traffic control. Field trips will be taken to laboratories at Beckman or to Willard Airport. Same as PSYC 497. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: Introductory Psychology. An upper level course in human factors (PSYC 358 or PSYC 456) is recommended but not required.

**AVI 497  Special Topics in Aviation**  credit: 2 TO 4 hours.
Special topics in the field of aviation. May be repeated in subsequent terms only when separate topics are offered to a maximum of 12 hours. Prerequisite: AVI 495 or equivalent and junior standing; or consent of instructor.
AVI 527  Engineering Psychology  credit: 4 hours.
Same as PSYC 527. See PSYC 527.

AVI 542  Cooperative Problem Solving  credit: 4 hours.
Same as IE 542. See IE 542.

AVI 590  Individual Research  credit: 0 TO 16 hours.
For graduate students who wish to conduct research on special problems not included in graduate thesis. Approved for S/U grading only. May be repeated to a maximum of 32 hours. Prerequisite: Graduate standing and consent of instructor.

AVI 597  Human Factors Seminar  credit: 0 TO 8 hours.
Provides an overview of current faculty research interests, a survey of human factors research methods, and in depth instruction and exercise on the process of H.F. research including literature search, experimental design, statistical analysis, and scientific report writing. Approved for S/U grading only. Course may be repeated up to a maximum of 16 hours, but no more than 8 hours within a term. Prerequisite: Consent of instructor, graduate standing.

AVI 599  Thesis Research  credit: 0 TO 16 hours.
May be repeated to a maximum of 36 hours. Prerequisite: Graduate standing and consent of instructor.
Business Administration

Business Administration
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BADM 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

BADM 205  Business Location Decisions  credit: 3 hours.
Same as GEOG 205. See GEOG 205.

BADM 300  The Legal Environment of Bus  credit: 3 hours.
Introduction to law and the legal system, tort law, products liability, agency law, introduction to business organizations, introduction to
government regulation, securities regulation, antitrust law. Prerequisite: Junior standing.

BADM 301  Summary of Business Law  credit: 3 hours.
Basic principles of the private law of business including the law of contracts, agency, and business organizations; a brief introduction
to the law of sales, negotiable instruments, security devices, and property. Credit is not given for both BADM 301 and BADM 403.
Prerequisite: Junior standing. Course is not open to students in the College of Business.

BADM 303  Principles of Public Policy  credit: 3 hours.
Same as ACCY 321 and PS 321. See PS 321.

BADM 310  Mgmt and Organizational Beh  credit: 3 hours.
General analysis of management and organizational behavior from a systems point of view, including classical organizational theory
and management, organizational behavior, and management science; environmental forces; planning, organizing, and control
processes; motivation, incentives, leadership, communication, and interpersonal relations; and discussion of production and decision-
making and mathematical models. Prerequisite: Junior standing.

BADM 311  Individual Behavior in Orgs  credit: 3 hours.
Understanding the behavior of employees in work organizations; particular attention to the motivation of individuals to join and perform
in organizations and to employee satisfaction with elements of the work environment; and emphasis on various management strategies
to modify employee motivation and satisfaction. Prerequisite: BADM 310.

BADM 312  Org Design and Environment  credit: 3 hours.
Understanding of complex organizations; particular attention to ways of dividing work, achieving coordination, and issues connected
with change and adaptation. Prerequisite: BADM 310.

BADM 313  Human Resource Management  credit: 3 hours.
Studies concepts and methods used by the staff personnel unit in building and maintaining an effective work force in an industrial
organization; development of ability to design the personnel subsystem within the firm and to deal effectively with problems
encountered in such areas as recruitment, selection, training, and wage and salary administration; and considerable emphasis on case
analysis, role playing, and research. Credit is not given for both BADM 313 and PSYC 245. Prerequisite: BADM 310.

BADM 320  Principles of Marketing  credit: 3 hours.
Emphasizes the concepts of planning, organization, control, and decision making as they are applied in the management of the
marketing function. Provides an overview of aspects of the marketing discipline. Prerequisite: ECON 202 or equivalent (Statistics I).

BADM 321  Principles of Retailing  credit: 3 hours.
Gives a general analysis of the structure of retailing emphasizing the retailing environment and operating efficiencies; includes
patronage behavior, merchandise control, pricing, promotion, location, and vendor relations; and gives special attention to emerging
trends in retailing. Prerequisite: BADM 320.

BADM 322  Marketing Research  credit: 3 hours.
Focuses on the techniques and methods of marketing research; emphasizes primarily survey research and experimental design; and
offers students the opportunity to apply techniques to real-world situations. Prerequisite: BADM 320 and ECON 202.

BADM 323  Marketing Communications  credit: 3 hours.
Introduces the student to the topic of marketing communications and promotion management. Topics covered include: advertising, sales promotion, point-of-purchase communications, interactive marketing, and event sponsorships. Prerequisite: BADM 320.

**BADM 324 Purchasing and Supply Mgmnt** credit: 3 hours.
Examines the analysis, planning, and forms of organization that are associated with the buying functions in business. Major focus on the principal issues involved in the procurement of raw materials, components, equipment, operating supplies, and services. Also treats the unique aspects of institutional and government purchasing. Case problems constitute a major vehicle of instruction. Prerequisite: Credit or concurrent enrollment in BADM 320.

**BADM 325 Consumer Behavior** credit: 3 hours.
Studies the factors affecting customer behavior in household and organizational markets and their relevance for marketing management planning and analysis; provides an overview of explanations of consumption differences anchored in socioeconomic, demographic, cultural, and psychological processes; and surveys buyer decision-making processes and their implications for marketing strategy. Prerequisite: BADM 320.

**BADM 326 Pricing Policies** credit: 3 hours.
The role of pricing in contemporary marketing and major pricing decisions facing the firm; theoretical, economic, and practical methods and models for setting prices; pricing new products, initiating price changes, and responding to competitive pricing; the relationship of pricing objectives and strategies to the goals of the firm; and sealed bidding for contracts. Prerequisite: BADM 320.

**BADM 327 Marketing to Business and Govt** credit: 3 hours.
Introduces the general area of industrial marketing; examines the nature of industrial markets especially as they compare to consumer markets and emphasizes such factors as the demand for industrial goods, marketing intelligence systems for industrial firms, marketing strategy in industrial markets, and analyses and control of industrial marketing programs; integrates important concepts from sales management and business logistics throughout the course; uses case studies. Prerequisite: BADM 320.

**BADM 328 Business-to-Business Selling** credit: 3 hours.
Introduces the use of persuasive personal communication in attracting and retaining customers. Uses experiential learning exercises to address principles and techniques of personal selling and the administration of the selling function as it relates to the development of marketing strategy and the achievement of corporate objectives. Prerequisite: Junior standing.

**BADM 329 New Product Development** credit: 3 hours.
Exposes student to business and marketing decisions in the context of new product development and marketing. Helps students learn how to use state-of-the-art management techniques to identify markets, develop new product ideas, measure customer benefits, and design profitable new products. Prerequisite: BADM 320.

**BADM 335 Supply Chain Management Basics** credit: 3 hours.
Course broadly exposes students to the basics of supply chain management. It concentrates on the basic concepts, terminology, techniques and tools in supply chain management. Introduces the main functions of supply chain management and its interface with marketing, finance, and information management. Studies the interactions among the logistics of manufacturing, inventory, and transportation. Students are introduced to mathematical modeling and computer simulations to optimize the performance of supply chains. Prerequisite: Junior standing.

**BADM 336 Modeling the Supply Chain** credit: 3 hours.
Course introduces students to supply chain modeling. It covers optimization and simulation modeling, value stream mapping, and the SCOR model for representation of supply chains. Models for strategic and tactical decision-making in supply chain design and operations will be considered. Presents examples of supply chain modeling in practice and integration of supply chain models with other business functions. Prerequisite: BADM 335.

**BADM 337 Practicum in Supply Chain Mgt** credit: 3 hours.
This is the capstone course for the Supply Chain Management major. Students are required to work in teams to solve real-world supply chain management problems using the tools and techniques learned from their other classes. Students are required to present their progress and final reports to both the faculty and company sponsors. Also covers some basic elements of project management and a large case study. Prerequisite: Senior standing.

**BADM 350 IT for Networked Organizations** credit: 3 hours.
Examines the information technology and its impact on modern organizations. Topics include: (1) IT, Internet Technologies, E-Commerce and business models, (2) organizing and modeling enterprise data, (3) Network protocol and architecture, (4) development of IT systems, and (5) IT management and organization design. Prerequisite: Junior standing.

**BADM 351 E-Business Management** credit: 3 hours.
Designed to provide current perspective about enterprise IT-applications and the management issues that such applications entail. Emphasis is on current developments that will be explored with lectures, case studies, and hands-on applications. The course builds on BADM 350. May be repeated in subsequent terms. Prerequisite: BADM 350.

BADM 352 Database Design and Management credit: 3 hours.
Introduce the modern concepts, techniques and management practices when dealing with data and use of data in organizations. Topics include data modeling, database logical and physical designs, implementation, database administration and web-based database environment. Students will be involved in constructing a database and researching an advanced topic to solidify the learning. Same as ACCY 352. Prerequisite: Junior standing.

BADM 353 Info Sys Analysis and Design credit: 3 hours.
Methodologies and techniques used and deliverables created in developing large-scale information systems, including preliminary planning, feasibility analysis, design implementation, and post-implementation review of the system; a term-long project which familiarizes students with methodology and techniques is required. Same as ACCY 353. Prerequisite: BADM 352.

BADM 354 Mgmt of Data Communications credit: 3 hours.
Course stresses a top-down, business oriented approach to evaluating and selecting data communications technology. Students who successfully complete this course gain practical knowledge of network telecommunications technology including hardware and software. They learn enough to allow them to help design systems that include network components. Prerequisite: BADM 350.

BADM 355 Enterprise Software Management credit: 3 hours.
Almost every professional who works in a field related to Information Technology requires an understanding of how enterprise projects and IT projects, in general, should be managed. Provides fundamental managerial skills for students who will work on IT projects. Covers different kinds of enterprise software applications - Enterprise Resource Planning Systems, Customer Relationship management systems and supply chain management IT systems. Students will get hands-on understanding through a term project and project-management software. Discusses approaches to estimate and manage costs, schedules and resources. Students get an understanding of real-world challenges through case studies throughout the course. May be repeated in subsequent terms. Prerequisite: BADM 350.

BADM 365 New Product Marketing credit: 3 hours.
Exposes engineering students to the discipline of marketing and to business decision-making in the unique context of new product marketing decisions. Same as TMGT 365. Students may not receive credit for this course and BADM 320. Prerequisite: Admission to the Technology and Management Program.

BADM 366 Product Design and Development credit: 3 hours.
Presents an overview of the product development process from concept generation to design manufacturing and project management. There is an emphasis on product definition, early concept development, visual reasoning and engineering graphics. Students work in cross disciplinary teams working through product development projects. Same as TMGT 366. Prerequisite: Admission to the Technology and Management Program.

BADM 367 Mgmt of Innov and Technology credit: 3 hours.
Course is the first jointly taken course for the engineering and business college undergraduates in the Technology and Management program. It focuses on the strategic management of technology and innovation in organizations. It builds primarily on broad models of technological evolution and organizational change. Same as TMGT 367. Prerequisite: Admission to the Technology and Management program.

BADM 374 Management Decision Models credit: 3 hours.
Introduction to methods of operations research from an executive or managerial viewpoint, emphasizing formulation of business problems in quantitative terms; industrial applications of linear programming, dynamic programming, game theory, probability theory, queuing theory, and inventory theory. Prerequisite: ECON 203.

BADM 375 Business Process Management credit: 3 hours.
Explores methods of design and management of manufacturing and service business processes; central concepts include managing process-speed, -capacity, -inventory, and -uncertainty; additional topics include simultaneous product and process design, and an introduction to quality management, process improvement and lean thinking.

BADM 376 Enterprise Proc Integr & Dynm credit: 3 hours.
Enterprise-level study of a business that focuses on the integration and management of many interrelated processes. The focus is on linkages between these business processes and the management of these linkages in a dynamic business environment. Prerequisite: BADM 375.

BADM 377 Project Management credit: 3 hours.
In-depth treatment of management concepts, tools, and techniques that apply to the organization, planning, and control of projects; particular emphasis on analyzing needs, defining work, scheduling tasks, allocating resources; assessing costs, managing risks; tracking and evaluating performance; and building and leading teams. Prerequisite: Junior standing.

BADM 378 Logistics Management credit: 3 hours.
Treats the total flow of materials from their acquisition as basic or unprocessed supplies to delivery of the finished product, as well as the related counter-flows of information that both record and control material movement. Major topics include forecasting material requirements; transportation planning; order processing system; raw material, in-process and finished goods inventory management; packaging; in plant and field warehousing; location theory (space, time, and cost trade-offs); communications; and control. Prerequisite: Junior standing.

BADM 379 Business Process Improvement credit: 3 hours.
The survival and growth of any organization requires the continuous improvement of its processes. This course focuses on philosophies and tools for enhancing customer-defined value created through processes. Contemporary process improvement programs are emphasized along with conventional ideas - topics include Statistical Quality Control, Value Stream Mapping, Total Quality Management, and Six Sigma. Prerequisite: Junior standing.

BADM 380 International Business credit: 3 hours.
Introduces the field of international business and management. Examines the economic, political, and legal environments of international business. Analyzes differences in financial management, marketing, and management practices for firms doing business abroad. Prerequisite: Junior standing.

BADM 381 Multinational Management credit: 3 hours.
Examines critical issues facing managers who work in multinational firms. Designed to develop students' skills for working in a global business environment. Topics include foreign market entry strategies, global management of the functional areas of business, and management and control of multinational firms in the global marketplace. Prerequisite: Junior standing.

BADM 382 International Marketing credit: 3 hours.
Analyzes marketing strategy across national boundaries, the problems of marketing within foreign countries, and the coordination of global marketing programs. Includes problems faced by the exporter, licensor, joint venture, and multinational firm. The full range of market activities are discussed from a global perspective. Prerequisite: BADM 320.

BADM 394 Senior Research credit: 2 TO 4 hours.
Research and readings course for students majoring in business administration. May be taken by students in the college honors program in partial fulfillment of the honors requirements. Prerequisite: Cumulative grade-point average of 3.0, honors in the junior year, or consent of instructor; senior standing.

BADM 395 Senior Research credit: 1 TO 4 hours.
Research and readings course for students majoring in business administration. May be taken by students in the college honors program in partial fulfillment of the honors requirements. Prerequisite: Cumulative grade-point average of 3.0 or honors in the junior year; senior standing.

BADM 403 Principles of Business Law credit: 4 hours.
Contracts, sales, debtor-creditor relations, negotiable instruments, property, business organizations. Prerequisite: Junior standing.

BADM 420 Advanced Marketing Management credit: 3 hours.
Integrative study of methods and models for marketing decision-making; emphasizes the application of analytical tools and behavioral and quantitative models to marketing decision-making. Uses lectures, case studies and simulation exercises. 3 undergraduate hours. No graduate credit. Prerequisite: BADM 320 and Senior standing.

BADM 432 Intro to Mgt Info Systems credit: 2 TO 4 hours.
Same as ACCY 432. See ACCY 432.

BADM 436 Intl Business Immersion credit: 4 hours.
Same as ACE 436. See ACE 436.

BADM 438 Agri-food Strategic Management credit: 3 hours.
Same as ACE 431. See ACE 431.

BADM 439 Agri-food Management Practicum credit: 4 hours.
Same as ACE 439. See ACE 439.

BADM 445 Small Business Consulting credit: 4 hours.
Through guided experience, students identify and offer advice to local small business firms; expose students, serving as consultants, to the wide variety of problems facing the smaller firm as well as enables them to apply current business methods to real problems. Students work in teams. Prerequisite: Undergraduate, Junior standing; for Graduate students, priority enrollment is granted to students in the MBA program or other MS programs in BADM.

BADM 446  Entrepreneurship Sm Bus Form  credit: 4 hours.
Studies entrepreneurship for those with a serious interest in owning their own business within five years of graduation; students prepare a comprehensive business plan for starting or acquiring such a business; also studies the problems of an existing small business. Prerequisite: Undergraduate, Junior standing; for graduate students, priority is granted to students in the MBA program or other MS programs in BADM.

BADM 447  Legal Strat for Entrepre Firm  credit: 4 hours.
Addresses the legal and managerial strategies important to the emerging firm, with particular focus on defensive legal strategies in the context of entrepreneurship. From the entrepreneur's perspective, examines the law of partnerships, sole proprietorships, corporations, joint ventures, agency, and defensive strategies to thwart takeovers.

BADM 449  Business Policy and Strategy  credit: 3 hours.
Analysis of policy formulation and implementation from a company-wide standpoint; emphasis on integration of knowledge and approaches across functional areas; both endogeneous and exogeneous factors which affect company policies; and the role of the firm in society. 3 undergraduate hours. No graduate hours. Prerequisite: Senior standing in the College of Business.

BADM 451  E-com Apps & Web-based Systems  credit: 3 OR 4 hours.
Provides students with technical skills for building web-based e-commerce applications using the Microsoft.NET framework as well as knowledge of web services. Topics include: ActiveServerPages.NET (ASP.NET), VisualBasic.NET (VB.NET), XML, web services, the Microsoft.NET framework. 3 undergraduate hours. 4 graduate hours. Prerequisite: BADM 350.

BADM 453  Decision Support Systems  credit: 3 hours.
This advanced course examines recent developments in information technology for managerial decision support with an emphasis on Internet-based and mobile information technologies. Real-world cases will be used to discuss the application of these technologies to management information systems. 3 undergraduate hours. No graduate credit. Prerequisite: BADM 350.

BADM 454  Enterprise Computing Mgmt  credit: 3 hours.
Aims to prepare students with programming skills for building and managing enterprise applications. Java is used as the language for implementation. C and C++ are also introduced briefly. General principles of computing are emphasized over specific languages. 3 undergraduate hours. No graduate hours. Prerequisite: BADM 350.

BADM 458  IT Governance  credit: 3 OR 4 hours.
Provides students with a core body of knowledge concerning the state of development, research and business practice of IT governance on topics such as: managerial issues for the prevention of business frauds and threats; the key technology for IT governance for users and businesses; issues concerning integrity control, privacy, ethics, risk management, and reliability; best practices concerning regulatory compliance requirements; and enterprise information management issues, policies and practices. 3 undergraduate hours. 4 graduate hours. Prerequisite: BADM 350.

BADM 459  Mgt Info and Control Systems  credit: 2 TO 4 hours.
Same as ACCY 455. See ACCY 455.

BADM 460  Business Process Modeling  credit: 3 hours.
Introduces the identification and analysis of various aspects of business processes. The course defines business processes and provides tools for designing and analyzing them. Same as TMGT 460. 3 undergraduate hours. No graduate credit. Prerequisite: BADM 367.

BADM 461  Integrated Project  credit: 2 hours.
Course is the capstone interdisciplinary new product development project course for the Technology & Management Program. Students work in cross-functional teams (joint business and engineering teams) to solve new product development project problems provided by client firms. Because the client firms differ each year, so do the problems. Same as TMGT 461. 2 undergraduate hours. No graduate credit. May be repeated to a maximum of 4 undergraduate hours. Students may register in more than one section per term. Prerequisite: BADM 366, BADM 367.

BADM 503  Classics in Business Admin  credit: 2 hours.
Graduate seminar. Presents foundational literature to introduce the theoretical origins of the different areas of Business Administration and explores the linkages among these areas. Outlines the impact of the foundational works on subsequent research. Approved for S/U grading only. Prerequisite: Ph.D. standing in BADM or consent of instructor.
BADM 504  Phil of Science and Bus Admin  credit: 2 hours.
Introduction to philosophy of science that focuses on the nature of discovering and justifying knowledge in the business disciplines.
Specific issues of interest are the nature of scientific truth, validation of theories, prediction and explanation. Discusses applications to
research in various business disciplines. Prerequisite: Ph.D. standing in BADM or consent of instructor.

BADM 505  Stat Analysis w/Business App  credit: 4 hours.
This topics course introduces the student to the theory and applications of probability (deduction), statistics (inference) and data
analysis (linear models) that are relevant for the conduct of research in Business Administration. May be repeated to a maximum of 8
hours. Students may take each section (A and B) once for credit towards degree requirements. Prerequisite: Ph.D. standing in BADM
or consent of instructor.

Research methodology for the study of administrative, industrial, and consumer behavior and organizations; Foundations of
measurement - Construct definition, Domain delineation, Reliability, Dimensionality, and Validity, Reliability analysis, Exploratory
and Confirmatory factor analysis; Alternative methods of data collection - laboratory experimentation, survey research design, and
qualitative research. A completed individual research project involving the development of an entire method is formally presented in
class and submitted as a paper. Prerequisite: Enrollment in Doctoral Program.

BADM 508  Organizational Behavior  credit: 2 OR 4 hours.
Develops and integrates fundamental behavioral concepts and theory having administrative applications; initially focuses on the
individual decision maker and ultimately includes interpersonal, organizational, and social structures and influences; and develops
strategies and methods of research on behavioral applications in business.

BADM 509  Managing Organizations  credit: 4 hours.
Examines and analyzes the organization as a social system and the impact of its various components on work attitudes and behavior;
topics include the development of organizational structures, organizational effectiveness, decision making and policy formulation,
leadership, and change.

BADM 510  Founds of Organizational Behav  credit: 4 hours.
Introduction to the principal theories and important empirical research in various disciplines that study organizations; in addition to
examination of the subject matter content of various disciplines, students critically examine the capacities and limitations of the various
fields to make contributions to the study of organizations. Same as PS 514, PSYC 553, and SOC 575. Prerequisite: Enrollment as a
major in organizational sciences in a cooperating program or consent of instructor.

BADM 511  Topics in Personnel Mgmt  credit: 4 hours.
Examines the organization and administration of the personnel function in management; the relations of personnel administration
to operating departments and the scope of business and industrial personnel services; analytical appraisal of policies and practices
in selected areas of personnel administration, such as selection and training, carried out through case studies and direct industrial
contracts; and specific consideration given to problems up to and including placing the person on a job. Same as LIR 548. Prerequisite:
Consent of instructor.

BADM 512  HR Management and Strategy  credit: 4 hours.
Same as LIR 565. See LIR 565.

BADM 514  Managing Innovation  credit: 2 hours.
Provides a solid grounding to students interested in managing various aspects of the innovation process that facilitate the creation,
synthesis, and organization of knowledge for the development of economically valued products, processes, and services within
organizations. Covers both the analytic frameworks for understanding the innovation process as well as the strategic and organizational
challenges involved in managing technological innovation. Specifically focuses on managerial actions that create the organizational
environment in which new opportunities are identified and new business models are developed to create value. Prerequisite: BADM
508 or consent of the instructor.

BADM 518  Adv Topics in Org Behavior  credit: 2 hours.
Review and analysis of major organization theory topics stressing the sociological, economic and managerial foundations or macro
organizational behavior. Topics include: the role of the social and economic environment on the functions, evolution and transformation
of individual organizations; and inter-organizational relations, the ecology of organizations and institutional factors that shape
organization action. May be repeated in the same or separate terms to a maximum of 4 hours. Students may take multiple topics under
the course designation, but can only take each topic once for credit towards degree requirements. Prerequisite: Ph.D. standing in
BADM or consent of instructor.

BADM 519  Adv Topics in Org Theory  credit: 4 hours.
Semin in topics of organizational behavior and organizational theory. Topics include: Seminar in Organizational Behavior (explores
the most recent research in the field of Organizational Behavior); and Seminar in Organizational Theory (explores the most recent
research in the field of Organizational Theory). May be repeated in the same or separate terms to a maximum of 8 hours. Students may take multiple topics under the course designation, but can only take each topic once for credit towards degree requirements. Prerequisite: Ph.D. standing in BADM or consent of instructor.

**BADM 520  Marketing Management**  credit: 2 OR 4 hours.
Introduces concepts useful in understanding marketing systems and buyer behavior in addition to developing skills in making marketing decisions; the orientation is primarily managerial and uses examples from both business and non-business contexts.

**BADM 521  Marketing Strategy**  credit: 4 hours.
Formal analysis of strategy drawing on concepts from the theory of games, decision theory, value theory, and information theory; topics cover elements of game models, classes of decision problems, games against nature, modern utility theory, information theory, group decision making, statistical decision theory, and linear and nonlinear optimization.

**BADM 522  Marketing Models**  credit: 4 hours.
Concepts, methods, and applications of decision modeling to marketing issues including segmentation, targeting and positioning, new product design and development, advertising, sales force and promotion planning, and sales forecasting. Assists students to build "smart" spreadsheets to improve marketing decisions. Prerequisite: First year of the MBA program or equivalent.

**BADM 523  Consumer Behavior**  credit: 4 hours.
Studies alternative models of buyer behavior; focuses attention on psychological, sociological, and economic factors including motivation, learning, attitudes, personality, reference groups, social stratification, demographics, life-styles, and cross-cultural differences and their impact on purchasing, consumption, and choice decisions. Prerequisite: BADM 520 or first year of MBA program or equivalent.

**BADM 524  Pricing Strategy and Tactics**  credit: 4 hours.
Develops concepts and techniques for formulating and administering prices in a variety of business situations. Focuses on understanding the internal and external environment through relevant information acquisition and analysis for developing appropriate pricing strategies and tactics. Prerequisite: First year of the MBA program or equivalent.

**BADM 525  New Product Development**  credit: 2 OR 4 hours.
The decisions on the firm's total market offer, including such topics as use of market analysis in making decisions on assortment, product development, pricing, packaging, branding, and sales forecasting; coordination of these decisions and actions with market communications, physical movement, production, finance, and the overall goals and policies of the firm; and emphasizes the use of analytic and research methods in making assortment and product decisions. Prerequisite: BADM 520 or first year of MBA program or equivalent.

**BADM 526  Marketing to Organizations**  credit: 4 hours.
Case and discussion-based course that focuses on how firms that are engaged in marketing to organizations. Examines how to identify competitive marketing advantages, assess market needs, and leverage or sustain these advantages. Prerequisite: First year of the MBA program or equivalent.

**BADM 527  Sales Force Management**  credit: 4 hours.
Examines primary elements and problems in the area of sales force management; studies such topics as the dyadic interaction between the buyer and seller, the sales presentation, important salesperson characteristics, the selection, training, assignment, motivation, and compensation of salespeople, supervision and evaluation of the sales force, and coordination of the sales force with other elements in a firm's marketing program. Uses case studies. Prerequisite: BADM 520 or first year of MBA program or equivalent.

**BADM 528  Promotional Strategy**  credit: 4 hours.
Management orientation to promotional strategy for the medium and large size organization; includes analyses of the primary elements of the promotional function from both qualitative and quantitative perspectives emphasizing such factors as (1) selection among alternative promotional tools, (2) the promotional budgeting and allocation process, and (3) determination of appropriate messages and media schedules for given product/market situations. Explores widely used models in depth for strategic usefulness; emphasizes case analysis and contemporary situations. Prerequisite: BADM 520 or first year of MBA program or equivalent.

**BADM 529  Marketing Research**  credit: 4 hours.
Examines the collection and analysis of information applied to marketing decisions; stresses quantitative methods including samplings, scalings, experimental design, forecasting, and multivariate procedures through the use of class projects on actual market research problems. Prerequisite: BADM 520 or first year of MBA program or equivalent.

**BADM 531  Survey Methods in Mkt Res**  credit: 4 hours.
Analysis of survey methods in marketing with emphasis on sample design, data collection, and data processing; an advanced course in the methods required to design, implement, and evaluate a research project. Same as SOC 576.
BADM 534  **Marketing Theory and Systems**  credit: 2 hours.
Detailed review of approaches to marketing theory. Specific emphasis on understanding the development of marketing theory and current trends in marketing thought. By a comprehensive review of selected literature, the student will be prepared to interpret and conduct research in marketing. Prerequisite: Ph.D. standing in BADM or consent of instructor.

BADM 535  **Sampling Hum Popul and Soc Org**  credit: 4 hours.
Procedures for selecting samples from and estimating population parameters for human populations and social organizations; types of sample designs treated include simple random samples, stratified, and cluster samples together with random number and systematic selection techniques; and emphasis given to the study of various kinds of advanced sample designs for both area and institutional settings together with the problems involved in the application of analytical statistics to complicated sampling procedures. Each student is required to participate in a field project which involves the actual selection of a cluster sample from the local area. Same as PSYC 585 and SOC 577. Prerequisite: SOC 587 or consent of instructor.

BADM 537  **Advanced Topics in Marketing**  credit: 4 hours.
Seminar on topics associated with the development of marketing theory. Topics may vary from year to year, and include classics in marketing exchange, development, and thought as well as current research frontiers involving product usage, market definition, data base modeling, and pricing. May be repeated to a maximum of 8 hours. Students may take multiple topics under the course designation, but can only take each topic once for credit towards degree requirements. Prerequisite: Ph.D. standing in BADM or consent of instructor.

BADM 538  **Res Sem in Consumer Behavior**  credit: 4 hours.
Advanced doctoral level seminar which critically examines the relevance of behavioral and social constructs for generating consumer behavior theories. It specifically discusses the need for, and procedures with which to modify behavioral/social processes. Prerequisite: Ph.D. standing in BADM or consent of instructor.

BADM 539  **Math Models in Marketing**  credit: 4 hours.
Seminar in model building as a tool for research in marketing. Application of the mathematics of optimization, dynamics, linear algebra and games to marketing topics including consumer choice, retailing, price promotions, advertising, personal selling, positioning, new product diffusion. Research project using marketing models required. Prerequisite: Ph.D. standing in BADM or consent of instructor.

BADM 542  **Competitive Analysis**  credit: 4 hours.
Develops concepts and techniques critical for formulating competitive strategy in a variety of business environments. Focuses on analyzing the structure of industries, the evolution of this structure, the pattern of interaction among competitors, and the competitive position and advantage of firms in the industry. Prerequisite: First year of the MBA program or equivalent.

BADM 543  **Technology Strategy**  credit: 2 OR 4 hours.
Develops concepts and analytical frameworks for evaluating the role of technology in the competitive advantage of the firm. Focuses on the technological environment of the firm, the use of technology to secure competitive advantage, and the management of innovation. Emphasizes the products, processes, and people of technology and innovation management. Prerequisite: First year of the MBA program or equivalent.

BADM 544  **Strategic Management**  credit: 4 hours.
Policy construction and planning of policy implementation at the executive level; case studies of company-wide situations from the management point of view; and integration and application of material from previous courses. Credit is not given for both BADM 544 and BADM 339. Prerequisite: BADM 509, BADM 520, and BADM 567, FIN 520, or equivalent.

BADM 545  **Found of Strategy Research**  credit: 2 hours.
Seminars on topics in the development of strategic management theory. Topics include: Classics in Strategic Management (explores the historical development of the foundational literature of strategic management); and Theory Development and Assessment in Strategic Management (focuses on the process of conducting and critiquing research in the field). May be repeated in the same or separate terms to a maximum of 4 hours. Students may take multiple topics under the course designation, but can only take each topic once for credit towards degree requirements. Prerequisite: Ph.D. standing in BADM or consent of instructor.

BADM 546  **Strategy Content Research**  credit: 2 hours.
Seminar covering the foundations of strategy content and formulation research. Topics include: Economic Theories in Strategic Management (including strategic management applications of industrial organization economics); and Economic Approaches to Strategic Management Research (including transaction costs, resource-based and property rights research). May be repeated in the same or separate terms to a maximum of 4 hours. Students may take multiple topics under the course designation, but can only take each topic once for credit towards degree requirements. Prerequisite: Ph.D. standing in BADM or consent of instructor.

BADM 547  **Strategy Process Research**  credit: 2 hours.
Seminar on research into strategy formulation and implementation processes. Topics include: Behavioral Theories in Strategic Management (theoretical and empirical research on complex organizations and their environments); and Behavioral Approaches to
Strategic Management Research (behavioral research into strategy formulation and implementation processes). May be repeated in the same or separate terms to a maximum of 4 hours. Students may take multiple topics under the course designation, but can only take each topic once for credit towards degree requirements. Prerequisite: Ph.D. standing in BADM or consent of instructor.

**BADM 548** Corp & Comp Strategy Research  credit: 2 hours.
Research seminars on topics in firm-level and business-level strategy. Topics include: Corporate Strategy (explores issues associated with the scope of the firm, corporate governance and value creation), and Competitive Strategy (focuses on strategic positioning, timing, competitive advantage and sustainability). May be repeated in the same or separate terms to a maximum of 4 hours. Students may take multiple topics under the course designation, but can only take each topic once for credit towards degree requirements. Prerequisite: Ph.D. standing in BADM or consent of instructor.

**BADM 549** Current Strategy Research  credit: 2 hours.
Seminar on current theoretical and empirical research relating to emerging areas of knowledge in the strategic management field. Reflecting the emphasis of current research on strategic and organizational phenomena, topics vary from year to year. May be repeated in the same or separate terms to a maximum of 4 hours. Students may take multiple topics under the course designation, but can only take each topic once for credit towards degree requirements. Prerequisite: Ph.D. standing in BADM or consent of instructor.

**BADM 551** Managing Intellectual Property  credit: 2 hours.
How do firms compete with ideas? How do they create, exploit and vindicate intellectual property ("IP") assets and capabilities in competition with others at home and abroad? We will address these critical questions, and gain a better understanding of what IP is, how firms nurture its creation, protect and meter its use, and integrate it into the broader competitive strategy of the firm. We will also investigate different types of IP legal regimes around the world, and investigate how multinational firms manage these regime differences for competitive advantage globally. We will do this through review and discussion of published legal decisions, international agreements and business case studies designed to highlight practical challenges that managers face when deciding how best to protect, transfer and or exploit IP within and across markets. Students should come away from this course with practical management insights and techniques for dealing with IP issues and helping the firm compete with ideas more effectively.

**BADM 552** Legal Aspects of Mgt Decisions  credit: 4 hours.
The legal environment in which business decisions are made, including the legal system and the role of courts, government taxation and regulation of business, administrative law, antitrust law, labor law, and trends in the law affecting business policy.

**BADM 553** Ethical Dilemmas in Business  credit: 4 hours.
Examines business decision making and the role ethics plays in that process. Analysis of how managers behave and whether ethical choices are knowingly made or only realized thereafter. Prerequisite: First year of the MBA program or equivalent.

**BADM 554** Enterprise Database Management  credit: 4 hours.
Examines the design and management of enterprise-wide data base systems. Topics include: (1) information modeling and presentation; (2) computerized methods for organizing information; (3) object-oriented information representation; (4) web-based enterprise information systems; and (5) business application and management of enterprise data base systems. Credit is not given for this course and BADM 352. Prerequisite: Graduate student standing.

**BADM 555** Info Sys Development and Mgt  credit: 4 hours.
Addresses issues relevant to the development of large-scale information systems including systems concepts and thinking, systems development life cycle, objectives, methodology and deliverables in each phase, behavioral implications of systems development and integration information systems with business processes. Credit is not given for this course and BADM 353. Prerequisite: Graduate student standing.

**BADM 556** Electronic Commerce  credit: 4 hours.
Graduate seminar in Electronic Commerce (EC), focusing on the integration of IT and business models. Topics include: (1) business-to-consumer EC; (2) business-to-business EC; (3) enterprise information management; (4) infrastructure development; (5) knowledge management; and (6) EC strategy. Prerequisite: First year of the MBA program or equivalent.

**BADM 557** Dec Support and Knowledge Mgt  credit: 4 hours.
This graduate level course examines emerging information technologies, in particular based on the Internet and mobile applications, to support management decisions. This course combines the technical, business and managerial aspects of developing advanced electronic business systems. Credit is not given for this course and BADM 453.

**BADM 558** Software Prog Dev and Mgmt  credit: 4 hours.
Graduate level course. Covers software development principles and implementations. Course topics include: Object-oriented programming, Java, C, C++, C#, with Java as the main language of implementation. Prerequisite: Graduate student standing.

**BADM 559** Enterprise IT Governance  credit: 4 hours.
Addresses enterprise IT governance, with a focus on (1) IT governance strategy, including strategic mapping, IT portfolio management, and IT risks assessment; (2) IT control frameworks for organizing IT processes and defining management control objectives, and (9) Trustworthy information management.

**BADM 561  Found of IS/IT Research  credit: 4 hours.**
Doctoral seminar aimed at preparing students for conducting research in the IS/IT area. Topics covered include: IS/IT research methods, approaches, and applications. Different research perspectives are surveyed. Emphasizes the scholarly process and the development of IS/IT research programs for an academic career. Prerequisite: Ph.D. standing in BADM or consent of instructor.

**BADM 565  Design & Mgt of Service Sys  credit: 4 hours.**
Focuses on unique challenges arising in services because customers cannot be separated from service creation and delivery processes; emphasizes integration of operations, marketing, and human resources management; and includes topics such as design/ delivery of services, service quality/productivity, and strategic role of information technology in services. Prerequisite: First year of the MBA program or equivalent.

**BADM 566  Supply Chain Management  credit: 2 OR 4 hours.**
Focuses on how to manage flows of products and services from raw material sources to final customers and associate flows of information. Helps students to develop a system view of measuring channel performance, integrating cross-functional activities, and coordinating processes across organizations. Prerequisite: First year of the MBA program or equivalent.

**BADM 567  Process Management  credit: 2 OR 4 hours.**
Introductory course in decision-making problems in production; includes the theoretical foundations for production management as well as the applications of decision-making techniques to production problems in the firm; and considers production processes, plant layout, maintenance, scheduling, quality control, and production control in particular. Prerequisite: First year of the MBA program or equivalent.

**BADM 568  Planning and Control Systems  credit: 4 hours.**
In-depth treatment of concepts involved in designing and implementing planning and control systems within the context of a dynamic environment; particular emphasis on the systematic use of information to maintain the efficient flow of materials, utilization of people and technology, coordination with suppliers, and communication with customers. Prerequisite: First year of the MBA program or equivalent.

**BADM 569  Res Topics in Operations Mgt  credit: 4 hours.**
Current and classical literature in the area of Operations Management. The topics covered may vary from year to year and may include performance measures, inventory management, planning, scheduling, location, layout, product design, process design, and forecasting. May be repeated in the same or separate terms to a maximum of 12 hours. Prerequisite: Ph.D. standing in BADM or consent of instructor.

**BADM 572  Stat for Mgt Decision Making  credit: 4 hours.**
The application of classical and modern statistics for business decision making. The level of the course assumes some prior knowledge of basic statistics as well as facility with elementary calculus.

**BADM 573  Quant Analysis of Decisions  credit: 2 OR 4 hours.**
Introduction to operations research techniques; topics include the construction and solution of linear models under certainty, and the construction of probabilistic models, specifically queueing theory, Markov chains, and sequential decisions.

**BADM 574  Simulation and Risk Analysis  credit: 2 hours.**
This course provides quantitative tools for solution of management problems involving risk, competing objectives, and complex constraints. The course will provide hands-on experience with techniques for solving these problems, with a particular emphasis on models and methods that enable managers to proactively manage and mitigate risk, obtain insight, and support decision making. Models are illustrated with applications to operations management, finance, and marketing, with a particular emphasis on issues associated with project portfolio management. Hands-on modeling skills are developed using spreadsheet-based software tools. We will consider challenges that executives and organizations encounter when implementing these approaches, and demonstrate how mathematical models can improve on “seat of the pants” methods.

**BADM 575  Systems Modeling & Simulation  credit: 4 hours.**
Elements of computer simulations, including modeling deterministic and stochastic systems, generation of random numbers and variables, and probability and statistics related to modeling, validating, running, and of interpreting computer simulations. Same as CS 545. Prerequisite: CS 105 or CS 125 and STAT 400, or equivalent background in computer and statistical principles, or consent of the instructor.

**BADM 576  Business Forecasting Models  credit: 4 hours.**
Introduction to maximum likelihood estimating techniques; topics including the use and limitations of least squares, two-stage least squares, limited-information and full-information estimates; and consideration of problems with observational errors, multicollinearity,
and autocorrelation in time-series and cross-section structural estimation. A major portion of the course is devoted to the application of the econometric techniques in business forecasting and analysis. Prerequisite: BADM 573 or equivalent.

**BADM 577 Economics of Decision Making**  credit: 4 hours.
The operational analysis of the problems of individual decisions under uncertainty that arise in the practice of management.

**BADM 578 Stochastic Models in Mgmt Sci**  credit: 4 hours.
Application of Markov processes to describe, analyze, and design systems of interest in management science, including queues, inventory, production, brand loyalty, stock market, and other applications. Prerequisite: MATH 461 or STAT 400, or equivalent.

**BADM 579 Math Prog for Mgmt Science**  credit: 4 hours.
Mathematical programming models (linear, integer, quadratic, nonlinear, dynamic, and combinatorial) used to describe, analyze, and design systems such as production, transportation, scheduling, and planning. Prerequisite: MATH 415 or equivalent.

**BADM 582 Multinational Management**  credit: 4 hours.
Examines critical issues facing managers who work in multinational firms. Designed to develop students' skills for working in a global business environment. Topics include foreign market entry strategies, global management of the functional areas of business, and management and control of multinational firms in the global marketplace. Prerequisite: Graduate standing.

**BADM 583 Current Topics in Intl Bus**  credit: 4 hours.
Continuation of BADM 582. Examines topics related to management and integration of multinational firms not covered in BADM 582. Possible topics include foreign investment decisionmaking, global manufacturing and supply chain management, international joint ventures and strategic alliances, cross-border mergers, global R&D, and global strategic human resource management. May be repeated. Prerequisite: Graduate standing.

**BADM 584 Global Marketing**  credit: 4 hours.
Analyzes marketing strategy across national boundaries, the problems of marketing within foreign countries, and the coordination of global marketing programs. Includes problems faced by the exporter, licensor, joint venture, and multinational firm. The full range of market activities are discussed from a global perspective. Prerequisite: Graduate standing.

**BADM 586 Intl Comparative Management**  credit: 4 hours.
Compares and contrasts different regional/national business systems and organizational practices including those from both developed and developing countries. Designed to advance students' global management knowledge and cross-cultural skills for functioning effectively in a transnational economy. Includes an optional overseas study trip to visit local companies and subsidiaries of multinational firms. Prerequisite: Graduate standing.

**BADM 589 Project Management**  credit: 2 hours.
The objective of this course is to master the principles of efficient project planning and control - needs analysis, work breakdown, scheduling, resource allocation, risk management, and performance tracking and evaluation - within the timeframe and cost projections stated in the overview section. Concepts and techniques will be developed by navigating through a recent textbook in project management and through a popular project management software package. In addition, task teams of five members each will have the opportunity to hone skills through homework problem sets and a comprehensive project plan.

**BADM 590 Seminar in Business Admin**  credit: 0 TO 4 hours.
Special topics in the general area of business. Topics are selected by the instructor at the beginning of each term. Approved for letter and S/U grading.

**BADM 591 Proseminar in Business Admin**  credit: 0 TO 4 hours.
Lectures in topics of current interest not covered by regular course offerings. Subjects are announced in the Class Schedule. Approved for letter and S/U grading. Prerequisite: Consent of instructor or head of department.

**BADM 593 Research in Special Fields**  credit: 1 TO 8 hours.
Approved for both letter and S/U grading.

**BADM 594 Independent Study and Research**  credit: 2 OR 4 hours.
Directed reading and research. Approved for both letter and S/U grading.

**BADM 599 Dissertation Research**  credit: 0 TO 16 hours.
Required of all students writing doctoral dissertations in business administration; guidance in writing theses and seminar discussions of interim progress reports. Approved for S/U grading only.
Baltic Languages and Cultures

Slavic Languages and Literature
Head of Department: Harriet Murav
Department Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-0680
www.slavic.uiuc.edu/

BALT 401  **Elementary Estonian I**  credit: 3 hours.
Development of the four skills in the Estonian language: oral expression, listening comprehension, writing, and reading, as well as the development of cultural understanding. Approved for both letter and S/U grading. Taught in summer only.

BALT 402  **Elementary Estonian II**  credit: 3 hours.
Continuation of BALT 401. Further development of the four language skills: oral-aural practice and elements of grammar, reading, and writing. Approved for both letter and S/U grading. Taught in summer only. Prerequisite: BALT 401.

BALT 411  **Elementary Latvian I**  credit: 3 hours.
Development of the four skills in the Latvian language: oral expression, listing comprehension, writing, and reading, as well as the development of cultural understanding Approved for both letter and S/U grading. Taught in summer only.

BALT 412  **Elementary Latvian II**  credit: 3 hours.
Continuation of BALT 411. Further development of the four language skills: oral-aural practice and elements of grammar, reading, and writing. Approved for both letter and S/U grading. Taught in summer only. Prerequisite: BALT 411.

BALT 415  **Baltic History and Culture**  credit: 3 hours.
Course gives a broad introduction to the histories and cultures of the Estonians, Latvians, and Lithuanians. Literature, music, art, and film will be studied in their historical context. Particular attention is paid to folk traditions, the 'national awakenings' of the nineteenth century, and the triumphs and tragedies of the twentieth century. Some attention is also placed on contemporary movements in culture. Approved for both letter and S/U grading. Taught in summer only.

BALT 421  **Elementary Lithuanian I**  credit: 3 hours.
Development of the four skills in the Lithuanian language: oral expression, listening comprehension, writing, and reading, as well as the development of cultural understanding. Approved for both letter and S/U grading. Taught in summer only.

BALT 422  **Elementary Lithuanian II**  credit: 3 hours.
Continuation of BALT 421. Further development of the four language skills: oral-aural practice and elements of grammar, reading, and writing. Approved for both letter and S/U grading. Taught in summer only. Prerequisite: BALT 421.
Basque

Basque
Head of Department: Diane Musumeci
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3390
www.sip.uiuc.edu

BASQ 401  **Beginners' Basque**  credit: 3 hours.
Basic communication skills in Basque (listening, speaking, reading and writing). Introduction to basic information on Basque culture and history. Prerequisite: Four semesters or equivalent of Spanish, French or another Romance language.

BASQ 402  **Readings in Basque Studies**  credit: 3 hours.
Directed research providing individualized instruction on specific topics in Basque linguistics and culture. May be repeated to a maximum of 6 hours. Prerequisite: BASQ 401 or consent of instructor.
Biochemistry

Head of Department: Colin Wraight

Department Office: 419 Roger Adams Laboratory, 600 South Mathews Avenue, Urbana
Phone: 333-2013
www.life.uiuc.edu/biochem

BIOC 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

BIOC 406  Gene Expression  credit: 3 hours.
Same as MCB 406. See MCB 406.

BIOC 440  Physical Chemistry Principles  credit: 4 hours.
Same as CHEM 440. See CHEM 440.

BIOC 445  Current Topics in Biochemistry  credit: 3 hours.
Capstone course of the Biochemistry Specialized Curriculum, designed to expose undergraduate seniors to developing areas of research in biochemistry. Each year the course will cover 3 to 4 topics of high current research activity, each presented by one faculty member. Readings will be based on the primary lecture. 3 undergraduate hours. Prerequisite: Senior standing in the Biochemistry Specialized Curriculum; MCB 354 and MCB 406 or consent of instructor.

BIOC 446  Physical Biochemistry  credit: 3 hours.
Physical properties of biological macromolecules, with the emphasis on spectroscopic methods, including UV, visible and FTIR spectroscopies, magnetic resonance techniques as well as X-ray diffraction methods. Same as CHEM 472 and MCB 446. Prerequisite: It is strongly recommended to take CHEM 440 (section B) prior to this course. MCB 354 or MCB 450 or equivalent background in biochemistry is also recommended.

BIOC 455  Technqs Biochem & Biotech  credit: 4 hours.
Introduction to modern methods of experimentation with biochemical experimentation. Lectures and labs on the theory and practices underlying various methods and instrumentation. Includes protein purification and quantitative analyses, immunoassays, enzymology, peptide sequencing, lipid analysis, in vitro translation, carbohydrate analysis, and bioinformatics. Prerequisite: CHEM 232 or CHEM 236, or equivalent; credit in MCB 251 or equivalent, and BIOC 450 or MCB 354 or equivalent, or consent of instructor.

BIOC 460  Biochemistry Senior Seminar  credit: 3 hours.
Writing intensive course dealing with the technical literature, current issues, and current advances in Biochemistry. Graduate students may register, but priority will be given to undergraduate students. Prerequisite: Completion of the Campus Composition I general education requirement; MCB 354 and BIOC 455, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

BIOC 492  Senior Thesis  credit: 2 TO 6 hours.
Limited in general to seniors in biochemistry. BIOC 492 is recommended for all those who plan to do research and graduate study, and it is a prerequisite for graduation with distinction in biochemistry. Each student who desires to do thesis research must receive written permission from a member of the biochemistry faculty. Accordingly, prospective students are encouraged to contact the biochemistry staff in the term prior to registration in this course. Students must present a thesis to receive credit in this course. Registration of 10 hours over two terms is expected. No graduate credit. Prerequisite: MCB 354, MCB 406 and BIOC 455, or consent of instructor.

BIOC 590  Individual Topics  credit: 1 TO 16 hours.
Designed for students in biochemistry who wish to undertake individual studies of a non-Ph.D. thesis nature under the direction of a faculty member of the department. (Summer Session, 1 to 8 hours). Approved for both letter and S/U grading. Prerequisite: Consent of head of department.

BIOC 595  Biochemistry Seminar  credit: 0 TO 1 hours.
Students, faculty, and invited speakers present seminars and discussions on current research topics. Required of all Biochemistry Ph.D. students. May be repeated to a maximum of 12 hours. Approved for S/U grading only. Prerequisite: Graduate standing in Biochemistry.

BIOC 599  Thesis Research  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
### Bioengineering

Interim Head: Michael F. Insana  
Department Office: 3120 Digital Computer Lab, 1304 West Springfield Avenue  
Phone: 333-1867  
www.bioen.uiuc.edu

**BIOE 120**  **Introduction to Bioengineering**  credit: 1 hours.  
Lecture and discussion of recent trends in bioengineering; topics typically include the biological interaction with ultrasound and microwave radiation, modeling, instrumentation, biomaterials, biomechanics, biological heat and mass transfer, and medical imaging techniques.

**BIOE 199**  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.  
May be repeated.

**BIOE 201**  **Conservation Principles Bioeng**  credit: 3 hours.  
Introduction to material, energy, charge, and momentum balances in biological problems. Steady-state and transient conservation equations for mass, energy, charge, and momentum will be derived and applied to mathematically analyze physiological systems using basic mathematical principles, physical laws, stoichiometry, and thermodynamic properties. Prerequisite: CHEM 104, MCB 150, and PHYS 212.

**BIOE 202**  **Cell & Tissue Engineering Lab**  credit: 2 hours.  
A comprehensive hands-on understanding of the principles of cell biology that are inherent in tissue engineering design. Provides experience in safely and skillfully manipulating cells of the four tissue types and performing various quantitative analyses on products produced by cells that have differentiated. Lab reports written in the style accepted by scientific journals will be required. For Bioengineering majors with sophomore standing.

**BIOE 205**  **Circuits & Systems in Bioengrg**  credit: 4 hours.  
Introduction to electronic circuits and general linear systems with examples from biology and medicine. Principles of circuit analysis, transient analysis, steady-state analysis, semiconductor devices and op-amps, and network frequency response. Linear systems and mathematical models of systems, including differential equations, convolution. Fourier series and transforms, and power spectral density. Class examples and coursework apply general techniques to problems in biological signal analysis. Prerequisite: CS 101, MATH 285, and PHYS 212.

**BIOE 280**  **Biomedical Imaging**  credit: 3 hours.  
Same as ECE 280. See ECE 280.

**BIOE 297**  **Individual Study**  credit: 1 TO 4 hours.  
Special project or reading activity. May be repeated in the same or separate terms to a maximum of 12 hours. Prerequisite: Approved written application to department as specified by department or instructor.

**BIOE 298**  **Special Topics**  credit: 0 TO 4 hours.  
Subject offerings of new and developing areas of knowledge in bioengineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 8 hours.

**BIOE 300**  **Seminar**  credit: 0 hours.  
Survey lecture course intended to introduce a broad range of Bioengineering topics. Approved for S/U grading only. May be repeated.

**BIOE 302**  **Modeling Human Physiology**  credit: 3 hours.  
Builds on systems fundamentals to describe, quantify, and model human physiological systems. Examines components, relationships, and homeostatic controls of neural, musculoskeletal, respiratory, cardiovascular, endocrine, digestion, and renal-filtration systems. Mathematical modeling and Matlab simulation are used to further understanding of the systems and relate physiological consequences to changes in environment or component function. Prerequisite: CS 101, BIOE 205, MATH 285, and MCB 252.

**BIOE 397**  **Individual Study**  credit: 1 TO 4 hours.  
Special project or reading activity. Prerequisite: Approved written application to department as specified by department or instructor.

**BIOE 398**  **Special Topics**  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in bioengineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 8 hours.

**BIOE 406  Veterinary Ortho Biomechanics**  credit: 3 hours.
Same as VB 406. See VB 406.

**BIOE 414  Biomedical Instrumentation**  credit: 3 hours.
Introduction to engineering aspects of the detection, acquisition, processing, and display of signals from living systems; biomedical sensors for measurements of biopotentials, ions and gases in aqueous solution, force, displacement, blood pressure, blood flow, heart sounds, respiration, and temperature; therapeutic and prosthetic devices; medical imaging instrumentation. Same as ECE 414. Prerequisite: ECE 205 or ECE 210.

**BIOE 415  Biomedical Instrumentation Lab**  credit: 2 hours.
Laboratory to accompany BIOE 414. Introduction to use of sensors and medical instrumentation for static and dynamic biological inputs. Students measure actual biomedical signals. Same as ECE 415. Prerequisite: Credit or concurrent registration in BIOE 414.

**BIOE 419  Brain, Behavior & Info Process**  credit: 3 hours.
Same as MCB 419, BIOP 419, and NEUR 419. See MCB 419.

**BIOE 461  Cellular Biomechanics**  credit: 4 hours.
Same as TAM 461. See TAM 461.

**BIOE 466  Image and Neuroimage Analysis**  credit: 3 OR 4 hours.
Same as PSYC 466 and STAT 466. See PSYC 466.

**BIOE 467  Biophotonics**  credit: 3 hours.
Same as ECE 467. See ECE 467.

**BIOE 472  Techniques in Biomolecular Eng**  credit: 3 OR 4 hours.
Same as CHBE 472. See CHBE 472.

**BIOE 473  Biomaterials Laboratory**  credit: 3 hours.
Same as MSE 472. See MSE 472.

**BIOE 475  Modeling of Bio-Systems**  credit: 3 OR 4 hours.
Same as ECE 475. See ECE 475.

**BIOE 476  Tissue Engineering**  credit: 3 hours.
Principles of biology and materials science and their integration inherent in tissue engineering design. Prerequisite: Recommended: One year each of college-level chemistry, physics, mathematics, and materials science.

**BIOE 480  Magnetic Resonance Imaging**  credit: 3 OR 4 hours.
Same as ECE 480. See ECE 480.

**BIOE 493  Senior Research Project**  credit: 2 TO 4 hours.
Individual research project under the guidance of a faculty member. Intended for students planning to complete BIOE 499 (Senior Thesis) in the following semester. May be repeated to a maximum of 4 hours. Prerequisite: Consent of instructor.

**BIOE 497  Individual Study**  credit: 1 TO 4 hours.
Special project or reading activity. May be repeated up to 8 hours in a term to a maximum of 12 total hours. Prerequisite: Approved written application to department as specified by department or instructor.

**BIOE 498  Special Topics**  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in bioengineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 12 hours, but no more than 8 in any one term.

**BIOE 499  Senior Thesis**  credit: 2 hours.
A formal research project in Bioengineering. Preparation and oral presentation of a written thesis that reports the results of the project. Prerequisite: BIOE 493 and consent of instructor.

**BIOE 500  Graduate Seminar**  credit: 1 hours.
Survey lecture course intended to introduce a broad range of Bioengineering topics. Approved for S/U grading only. May be repeated to a maximum of 2 hours.

BIOE 501  Seminar Discussion  credit: 1 hours.
Familiarization with reading and discussing academic journals in Bioengineering. Approved for S/U grading only.

BIOE 502  Bioengineering Professionalism  credit: 1 hours.
Introduces ethical questions and conduct, procedures, and professional standards in the practice of bioengineering. Includes authorship and mentoring, use of animal and human subjects, conflict of interest, ethical behavior in scientific research, intellectual property, and approval processes for drugs and biomedical devices.

BIOE 504  Analytical Methods in Bioeng  credit: 4 hours.
Mathematical topics as they relate to modeling of physiological and bio-molecular processes and the instrumentation used to measure those processes. Reviews matrix methods, probability, linear systems, and integral transforms. Introduces singular value decomposition, Bayesian decision making, and linear system solutions to ordinary differential equations. Topics are applied to biosensor design and evaluation, tracer kinetic modeling, and filtering/curving fitting approaches to forward modeling problems. Prerequisite: MATH 285.

BIOE 505  Computational Bioengineering  credit: 4 hours.
Presents mathematical and statistical models together with their accompanying computational techniques that are central to many aspects of systems biology and bioengineering research. Topics include: theory of supervised and unsupervised learning; linear models; dimension reduction; Monte Carlo computation; analysis of gene expression data and genome sequence data; modeling of gene transcription network signaling pathways. Prerequisite: STAT 400.

BIOE 506  Molecular & Cellular Bioengrg  credit: 4 hours.
Analyzes cutting-edge engineering technologies applied to molecular and cellular biology research. Introduces methods by which the properties of genes, molecules, and cells can be monitored, measured, manipulated, and modeled to advance understanding of the complex biological system. Presents recombinant DNA technologies, RNA and protein technologies, genetic engineering approaches for fluorescence biosensors and live-cell imaging, signaling regulation and tissue engineering. Prerequisite: MCB 250.

BIOE 507  Advanced Bioinstrumentation  credit: 4 hours.
Instrumentation and underlying theory employed in bioengineering. Concepts in the design and operation of sensors, fundamentals of optics, basic control theory and systems, digital components, and fundamental principles of medical imaging techniques. Specific knowledge of one biomedical instrument/system will be emphasized including detailed mathematical analysis. Prerequisite: BIOE 504.

BIOE 597  Individual Study  credit: 1 TO 8 hours.
Special project or reading activity. For engineering and life science majors. May be repeated. Prerequisite: Approved written application to department as specified by department or instructor.

BIOE 598  Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in bioengineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 12 hours, but no more than 8 in any one term.

BIOE 599  Thesis Research  credit: 0 TO 16 hours.
Bioengineering graduate thesis research. Approved for S/U grading only. May be repeated.
Biology

Integrative Biology, School of
Director of School: Evan Delucia
School Office: 286 Morrill Hall, 505 South Goodwin Avenue, Urbana
Phone: 333-3044
www.life.uiuc.edu/sib

BIOL 599  Thesis Research  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
Biophysics

Biophysics and Computational Biology, Center for
Director of Center: Robert M. Clegg
Center Office: 156 Davenport Hall, 607 South Mathews, Urbana
Phone: 333-1630
www.life.uiuc.edu/biophysics/

BIOP 401  Introduction to Biophysics  credit: 3 hours.
Review of membrane and cell biophysics designed to introduce the theoretical and mathematical bases of bioelectricity, photobiology and biomolecular motors. Prerequisite: One year each of college-level mathematics and physics; one year each of college level biology and chemistry recommended.

BIOP 417  Modeling Neural Systems  credit: 4 hours.
Same as MCB 417 and NEUR 427. See MCB 417.

BIOP 419  Brain, Behavior & Info Process  credit: 3 hours.
Same as MCB 419, BIOE 419 and NEUR 419. See MCB 419.

BIOP 420  Molecular Biophysics  credit: 3 hours.
Examines structure and function of biological macromolecules and supramolecular assemblies; methods for three-dimensional structure determination. Specific topics include: diffraction methods, protein structure and the molecular basis of enzyme catalysis, antibody structure and function, virus structure and assembly; membrane proteins, microtubules and other supramolecular assemblies, nucleic acid structure, protein-nucleic acid interactions. Same as MCB 425. Prerequisite: MCB 354; CHEM 440, or equivalent; or consent of instructor.

BIOP 432  Photosynthesis  credit: 3 hours.
Comprehensive description of photosynthesis. Topics include: the photosynthetic membranes, light absorption, electron and proton transfer, photophosphorylation, water oxidation, RUBP carboxylase/oxygenase, photorespiration, whole plant photosynthesis, gas exchange and atmospheric interactions, and impacts of global environmental change. Same as CPSC 489, and IB 421. Prerequisite: IB 420, MCB 354, MCB 450, BIOP 401, or equivalent; or consent of instructor.

BIOP 470  Computational Chemical Biology  credit: 3 OR 4 hours.
Same as CHEM 470. See CHEM 470.

BIOP 540  Topics in Biophysical Chem  credit: 4 hours.
Same as CHEM 576 and MCB 556. See CHEM 576.

BIOP 550  Biomolecular Physics  credit: 4 hours.
Same as MCB 550 and PHYS 550. See PHYS 550.

BIOP 581  Lab Rotation I  credit: 2 hours.
Laboratory research methods; familiarization of first-year graduate students with experimental methods used in research in Biophysics and Computational Biology. Required of all first-year students majoring in Biophysics and Computational Biology. First five weeks of fall term. Prerequisite: First-year graduate status and consent of department; concurrent registration in BIOP 582 and BIOP 583.

BIOP 582  Lab Rotation II  credit: 2 hours.
Laboratory research methods; familiarization of first-year graduate students with experimental methods used in research in Biophysics and Computational Biology. Required of all first-year students in Biophysics and Computational Biology. Second five weeks of fall term. Prerequisite: First-year graduate status and consent of department; concurrent registration in BIOP 581 and BIOP 583.

BIOP 583  Lab Rotation III  credit: 2 hours.
Laboratory research methods; familiarization of first-year graduate students with experimental methods used in research in Biophysics and Computational Biology. Required of all first-year students majoring in Biophysics and Computational Biology. Meets last five weeks of the fall term. Prerequisite: First-year graduate status and consent of department; concurrent registration in BIOP 581 and BIOP 582.

BIOP 586  Special Topics in Biophysics  credit: 1 TO 4 hours.
Advanced course/tutorials on topics of interest in biophysics, such as electrophysiology, radiation biology, bioenergetics, protein structure, or the physics of muscular contraction. Prerequisite: Consent of instructor.

BIOP 590  Individual Topics  credit: 2 TO 10 hours.
For graduate students wishing to study individual problems or topics not assigned in other courses. Prerequisite: Consent of department.

**BIOP 595  Biophysics Seminars  credit: 1 TO 2 hours.**
Survey of literature in one area of biophysics, with special emphasis on student reports. Approved for both letter and S/U grading. Prerequisite: Graduate standing in Biophysics and Computational Biology.

**BIOP 599  Thesis Research  credit: 0 TO 16 hours.**
Research may be conducted in any area under investigation in a faculty laboratory, subject to the approval of the faculty member concerned and the department in which the research is to be done. Approved for S/U grading only.
Bamana

Linguistics
Head of Department: Elabbas Benmamoun
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3563
www.linguistics.uiuc.edu

BMNA 201  **Elementary Bamana I**  credit: 5 hours.
Introduction to Bamana (Bambara), a West African language spoken from Mauritania to Benin; emphasis on grammar, pronunciation, reading and conversation in standard Bamana. Participation in the language laboratory required. Same as AFST 201.

BMNA 202  **Elementary Bamana II**  credit: 5 hours.
Continuation of BMNA 201, with introduction of more advanced grammar; emphasis on more fluency in speaking, reading, and writing simple sentences in standard Bamana. Participation in the language laboratory required. Same as AFST 202. Prerequisite: BMNA 201.

BMNA 403  **Intermediate Bamana I**  credit: 4 hours.
Survey of more advanced grammar, with emphasis on increasing conversational fluency, compositional skills, study of written texts in standard Bamana, and discussion of grammatical variations. Same as AFST 403. Prerequisite: BMNA 202.

BMNA 404  **Intermediate Bamana II**  credit: 4 hours.
Continuation of BMNA 403; emphasis on ability to engage in reasonably fluent discourse in Bamana and comprehensive knowledge of formal grammar, and ability to read ordinary texts in standard Bamana. Same as AFST 404. Prerequisite: BMNA 403.

BMNA 405  **Advanced Bamana I**  credit: 3 hours.
Third year Bamana with emphasis on conversational fluency and on increased facility in reading, comprehension, writing in response to authentic Bamana texts such as documented in selected newspapers, magazines, and other Bamana-speaking communities' cultural materials. Same as AFST 431. Prerequisite: BMNA 404.

BMNA 406  **Advanced Bamana II**  credit: 3 hours.
Continuation of BMNA 405 with increased emphasis on conversational fluency and on increased facility in reading, comprehending authentic Bamana literary texts, including prose and cultural materials from Bamana-speaking communities in West Africa (i.e., Burkina Faso, Cote d'Ivoire, and Mali.) Same as AFST 432. Prerequisite: BMNA 405.
Bridge

Bridge Program
Director: Pamela Y. Greer
LAS Office: 270 Lincoln Hall, 702 South Wright, Urbana
Phone: 244-1588

BR 010  **Summer Bridge-Reading**  credit: 0.5 hours.
Summer Bridge - Reading.

BR 011  **Summer Bridge-Composition**  credit: 0.5 hours.
Summer Bridge - Composition.

BR 012  **Summer Bridge-Math**  credit: 0.5 hours.
Summer Bridge - Math.

BR 013  **Summer Bridge-Computer Skills**  credit: 0.5 hours.
Summer Bridge - Computer Skills.
Business and Technical Writing

English
Head of Department: Curtis Perry
Department Office: 208 English Building, 608 South Wright, Urbana
Phone: 333-2391
www.english.uiuc.edu

BTW 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

BTW 220  Desktop Publishing and Design  credit: 2 hours.
Design and preparation of documents using desktop publishing technology. Students will learn and apply principles governing page design, style sheets, document layout, effective graphics, managing the design process, and usability testing. Students will create a portfolio of design projects.

BTW 250  Principles Bus Comm  credit: 3 hours.
Teaches students to apply the principles of successful professional communication to workplace writing tasks. Students will also practice editing and supervising the writing of others. Assignments replicate typical business cases and situations, including a report that requires students to compile and interpret research. Credit is not given for both BTW 250 and either BTW 253, BTW 261, or BTW 263. Prerequisite: Junior standing and completion of campus Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

BTW 261  Principles Tech Comm  credit: 3 hours.
Teaches students to apply the principles of successful professional writing to a range of realistic cases in technical communication. Emphasizes flexible problem-solving skills and a clear style for communicating technical information to a range of readers. Assignments will include correspondence, instructions, proposals, and a technical report or similar project. Credit is not given for both BTW 261 and BTW 250, BTW 253 or, BTW 263. Prerequisite: Junior standing and completion of campus Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

BTW 263  Writing in the Disciplines  credit: 3 hours.
Teaches students to apply principles of professional communication to the writing tasks typical of specific disciplines or professions. Assignments will vary, depending on the focus of the course, but will include a substantial report or project. Credit is not given for both BTW 263 and BTW 250, BTW 253, or BTW 261. Prerequisite: Junior standing and completion of campus Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

BTW 271  Persuasive Writing  credit: 3 hours.
Students will study principles of persuasion as applied to writing and designing written communications for business and the professions. Included are ads, direct-mail campaigns, argumentative essays, proposals, and other types of writing designed to move readers to action. Prerequisite: Sophomore standing and completion of campus rhetoric requirement.

BTW 272  Report Writing  credit: 3 hours.
Personal direction in a report writing project which can be integrated with research in another course; study of report-writing principles and practices. Classes meet for the first month after which the student and the instructor arrange a conference schedule. Small group meetings are arranged for presentation of proposals, progress reports, and summary reports. Prerequisite: Completion of campus rhetoric requirement and sophomore standing.

BTW 275  Adv Bus and Prof Comm  credit: 3 hours.
Teaches students to analyze, execute, and manage complex professional writing tasks. Emphasizes practice in managing the writing process and supervising the writing of others. Prerequisite: BTW 253, BTW 261, or BTW 263.

BTW 277  Adv Tech Comm  credit: 3 hours.
Teaches students to analyze, execute, and manage complex technical writing tasks, with special emphasis on advanced technological solutions to communications problems. Prerequisite: BTW 253, BTW 261, or BTW 263.

BTW 290  Individual Study  credit: 0 TO 3 hours.
Independent research with a chosen tutor leading to the writing of a formal report or preparation of some other type of major presentation of information. Enroll in BTW office, 294 English Building. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours. Prerequisite: Consent of instructor.

BTW 402  **Descriptive English Grammar**  credit: 3 OR 4 hours.
Same as ENGL 402. See ENGL 402.

BTW 490  **Special Topics Prof Writing**  credit: 3 OR 4 hours.
Study of the forms, situations, and social practices that define writing in particular disciplines or professions. Each class will focus on a specific topic such as science writing, writing in the environmental movement, legal writing, writing in the social sciences, public policy in the popular media, and so on. Assignments will vary with the topic. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Junior standing.
Bulgarian

Slavic Languages and Literature
Head of Department: Harriet Murav
Department Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-0680
www.slavic.uiuc.edu/

BULG 481  **Structure of Modern Bulgarian**  credit: 3 hours.
Analysis of the sound system and grammar of the contemporary Bulgarian language. Prerequisite: RUSS 302 or equivalent.

BULG 482  **Readings in Bulgarian Lit**  credit: 3 OR 4 hours.
Reading, analysis, and discussion of selected excerpts from Bulgarian literature, scientific prose, and the press. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: BULG 481 or consent of instructor.
BUS 101  Business Prof Responsibility  credit: 2 hours.
Introduces College of Business freshmen to Professional Responsibility in Business. Begins by developing the concept of professional responsibility within a personal and interperson context. Students will discover the meaning of professional responsibility in their career and in professional relationships. Continues by expanding the concept of professional responsibility to an ethical balance of the profit motive and corporate responsibility within the global context.

BUS 120  Business Honors Seminar  credit: 2 hours.
Introduction to business and an overview of the role of the College of Business and the University of Illinois in providing opportunities for undergraduates to prepare to become business leaders. Introduction to the College of Business Honors Program, a leadership program for approximately 40 incoming freshmen in the College of Business. Students will begin to work as a team to use leadership in service to all undergraduates in the College of Business. Approved for both letter and S/U grading. Prerequisite: Membership in freshman class of College of Business Honors Program.

BUS 199  Undergraduate Open Seminar  credit: 0 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

BUS 299  BUS Internship  credit: 0 hours.
Accommodates students who must be registered for a course at the University while completing an internship, either because the internship is unpaid and the company requires registration, or because of visa requirements. Only internships in the College of Business will be considered. Approved for S/U grading only.

BUS 399  Business Study Abroad  credit: 0 TO 18 hours.
Upon prior written approval of the College of Business Office of Undergraduate Affairs, a student may earn up to 18 credit hours per term undertaking a study and/or research project in international business at accredited foreign institutions or approved overseas programs. Final determination of appropriate credit will be made upon completion of the work done abroad. While absent from the Urbana-Champaign campus, the student must continue to pay all fees required by the University of Illinois to retain continuity of enrollment and to allow the time spent away from this campus to count toward residency. Approved for both letter and S/U grading. Maximum of 18 hours per term and 36 hours total. Prerequisite: One academic year (or one semester in the case of transfer students) in residence at UIUC, good academic standing, completion of at least thirty semester hours toward the bachelor's degree, and prior approval of course work by the College of Business Office of Undergraduate Affairs. Some programs have additional requirements.
Center for Advanced Study

Advanced Study, Center for
Director: William T. Greenough
Department Address: 912 West Illinois, Urbana
Phone: 333-6729
www.cas.uiuc.edu

CAS 587  Advanced Study: Special Topics  credit: 4 hours.
Course is an upper-level graduate course in multi-disciplinary studies with topic material that will vary term to term. Interested graduate students should contact the instructors. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.
CATL 401  **Intensive Catalan Language**  credit: 3 hours.
Intensive introduction to the Catalan language, appropriate for students familiar with another Romance language; emphasizes acquisition of the four basic skills, listening, speaking, writing, and reading, in order to achieve competence in the language. Prerequisite: Basic reading knowledge of another Romance language is helpful but not absolutely necessary.

CATL 402  **Studies in Catalan Literature**  credit: 3 hours.
Studies selected aspects of Catalan literature; taught in Catalan. Topics will be selected from among the major chronological periods and genres of Catalan literature; such as 20th century novel, Ramon Llull and Ausias March. The intention is to offer the student an in-depth view instead of an introductory overview. May be repeated to a maximum of 6 hours if topics vary. Prerequisite: CATL 401 or equivalent.
Cell and Developmental Biology

Cell & Developmental Biology
Head of Department: Andrew S. Belmont
Department Office: B107 Chemical and Life Sciences Lab., 601 South Goodwin, Urbana
Phone: 333-6118
www.life.uiuc.edu/csb

CDB 590  **Individual Topics**  credit: 1 TO 16 hours.
Individual topics in research and/or reading for graduate students, to be conducted under the supervision of faculty members in cell and structural biology; designed to allow students to become more familiar with specialized fields of study prior to committing themselves to a specific area for their graduate degree. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

CDB 595  **Graduate Sem Cell Devel Biol**  credit: 1 hours.
Invited speakers, faculty, and student presentations and discussions on current research topics. May be repeated to a maximum of 8 hours. Approved for both letter and S/U grading. Prerequisite: MCB 400; or consent of instructor.

CDB 599  **Thesis Research**  credit: 1 TO 16 hours.
Research on the thesis and preparation of the thesis. Summer: 0 to 8 hours. May be repeated in the same or subsequent terms to a maximum of 16 hours. (Summer session may be repeated to a maximum of 8 hours). Approved for S/U grading only.
Civil and Environmental Engineering

Civil and Environmental Engineering
Head of Department: Robert H. Dodds, Jr.
Department Office: 1114 Newmark Civil Engineering Laboratory, 205 North Mathews Avenue, Urbana
Phone: 333-8038
cee.uiuc.edu

CEE 195  About Civil Engineering  credit: 0 hours.
Civil engineering orientation course including historical developments, education requirements, relation to science, professional practice, and specialties within the profession. Approved for S/U grading only.

CEE 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

CEE 201  Systems Engrg & Economics  credit: 3 hours.
Introduction to the formulation and solution of civil engineering problems. Major topics are: engineering economy, mathematical modeling, and optimization. Techniques, including classical optimization, linear and nonlinear programming, network theory, critical path methods, simulation, decision theory, and dynamic programming are applied to a variety of civil engineering problems. Credit is not given for both CEE 201 and either GE 330 or IE 310. Prerequisite: MATH 231; credit or concurrent registration in MATH 225.

CEE 202  Engineering Risk & Uncertainty  credit: 3 hours.
Identification and modeling of non-deterministic problems in civil engineering design and decision making. Development of stochastic concepts and simulation models, and their relevance to real design and decision problems in various areas of civil engineering. Credit is not given for both CEE 202 and either GE 331 or IE 300. Prerequisite: Recommended: credit or concurrent registration in MATH 241.

CEE 300  Behavior of Materials  credit: 4 hours.
Macroscopic mechanical behavior in terms of phenomena at the nanometer and micrometer levels for the three types of engineering materials (metals, ceramics, and polymers) with emphasis on specific materials used in civil engineering -- steel, rocks, clay, portland cement concrete, asphaltic concrete, and wood. Lecture-lab format. Same as TAM 324. Credit is not given for both CEE 300 and either ME 330 or MSE 280. Prerequisite: Completion of Composition I general education requirement; CHEM 104; TAM 251.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

CEE 310  Transportation Engineering  credit: 3 hours.
Introduction to the design, planning, operation, management, and maintenance of transportation systems; integrated multi-modal transportation systems (highways, air, rail, etc.); layout of highways, airports, and railroads with traffic flow models, capacity analysis, and safety. Design of facilities and systems with life cycle costing procedures and criteria for optimization. Prerequisite: TAM 251; credit or concurrent registration in CEE 202.

CEE 320  Construction Engineering  credit: 3 hours.
Introduction to the construction processes: contracting and bonding, planning and scheduling, estimating and project control, productivity models, and construction econometrics. Prerequisite: CEE 201; credit or concurrent registration in CS 101 and CEE 202.

CEE 330  Environmental Engineering  credit: 3 hours.
Sources, characteristics, transport, and effects of air and water contaminants; biological, chemical, and physical processes in water; atmospheric structure and composition; unit operations for air and water quality control; solid waste management; environmental quality standards. Prerequisite: CHEM 104.

CEE 350  Water Resources Engineering  credit: 3 hours.
Quantitative aspects of water in the earth's environment and its engineering implications, including design and analysis of systems directly concerned with use and control of water; quantitative introduction to hydrology, hydraulic engineering, and water resources planning. Prerequisite: CEE 202; credit or concurrent registration in TAM 335 and CEE 201.

CEE 360  Structural Engineering  credit: 3 hours.
Analysis, behavior, and design of trusses and framed structures under static loads; analysis topics include member forces in trusses, shear and moment diagrams, deflections, simple applications of the force method and slope-deflection; introduction to computer applications. Prerequisite: TAM 251.

CEE 380  Geotechnical Engineering  credit: 3 hours.
Introduction to geotechnical engineering. Classification of soils, compaction in the laboratory and in the field, soil exploration, boring and sampling, permeability of soils, one-dimensional settlement analyses, strength of soil, introduction to foundations. Prerequisite: TAM 251.

CEE 400  **Welding and Joining Processes**  credit: 0 TO 4 hours.
Physical principles of fusion welding; heat flow; thermal cycles; physical metallurgy and mechanical properties of welded joints; applications of welding to large structures; testing of welds; nondestructive testing; design, economics, and weld specifications; laboratory experiments in welding. Same as MSE 444. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 300 or MSE 206.

CEE 401  **Concrete Materials**  credit: 4 hours.
Examines the influence of constituent materials (cements, water, aggregates and admixtures) on the properties of fresh and hardened concrete, concrete mix design, handling and placement of concrete, and the behavior of concrete under various types of loading and environment. Laboratory exercises, which utilize standard concrete test methods, are an integral part of the course. A few field trips are held during scheduled laboratory sessions. Prerequisite: CEE 300.

CEE 405  **Asphalt Materials I**  credit: 3 OR 4 hours.
Properties and control testing of bituminous materials, aggregates for bituminous mixtures, and analysis and design of asphalt concrete and liquid asphalt cold mixtures; structural properties of bituminous mixes; surface treatment design; recycling of mixtures. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 310.

CEE 406  **Pavement Design I**  credit: 3 OR 4 hours.
Analysis, behavior, performance, and structural design of pavements for highways and airfields; topics include climate factors, rehabilitation, life cycle design economics, and traffic loadings. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 310.

CEE 407  **Airport Design**  credit: 3 OR 4 hours.
Basic principles of airport facilities design to include aircraft operational characteristics, noise, site selection, land use compatibility, operational area, ground access and egress, terminals, ground service areas, airport capacity, and special types of airports. 3 undergraduate hours. 3 or 4 graduate hours.

CEE 408  **Railroad Transportation Enggr**  credit: 3 OR 4 hours.
Principles and analysis of railroad transportation efficiency, economics, energy, and engineering; effect on production and markets. Introduction to railroad infrastructure; locomotive and rolling stock design, function, and operation. Computation of train speed, power, and acceleration requirements; introduction to railway traffic control and signaling. Quantitative analytical tools for rail-transportation decision-making and optimization. Field trip to observe railroad infrastructure, equipment and operations. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 408.

CEE 409  **Railroad Track Engineering**  credit: 3 OR 4 hours.
In-depth examination of railroad track engineering concepts including track component and system design, construction, evaluation, maintenance, load distribution, and wheel-rail interaction. Design and analysis tools for railroad track engineering and maintenance. Field trip to observe railroad track system and components. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 310.

CEE 410  **Railroad Signaling & Control**  credit: 3 OR 4 hours.
Railway traffic control and signaling systems; train performance and scheduling tools; analysis of temporal and spatial separation of trains for safety and efficiency; train movement authority and operating rules, track circuit and wireless train position monitoring technology; interlocking design; railroad capacity modeling tools; economic analysis of traffic control system design, optimization, and selection. Field trip to observe signal system infrastructure and railway traffic operations control center. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 408.

CEE 411  **Geometric Design of Roads**  credit: 4 hours.
Analysis of factors in developing a highway transportation facility; traffic estimates and assignment; problems of highway geometrics and design standards; planning and location principles; intersection design factors; street systems and terminal facilities; programming improvements; drainage design; structural design of surface; concepts of highway management and finance; highway maintenance planning. Prerequisite: CEE 310.

CEE 416  **Traffic Capacity Analysis**  credit: 3 OR 4 hours.
Fundamentals of traffic engineering; analysis of traffic stream characteristics; capacity of urban and rural highways; design and analysis of traffic signals and intersections; traffic control; traffic impact studies; traffic accidents. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 310.

CEE 417  **Urban Transportation Planning**  credit: 4 hours.
Same as UP 430. See UP 430.
CEE 420  Construction Productivity  credit: 3 OR 4 hours.
Introduction to the application of scientific principles to the measurement and forecasting of productivity in construction engineering. Conceptual and mathematical formulation of labor, equipment, and material factors affecting productivity. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 320.

CEE 421  Construction Planning  credit: 3 OR 4 hours.
Project definition; scheduling and control models; material, labor, and equipment allocation; optimal schedules; project organization; documentation and reporting systems; management and control. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 320.

CEE 422  Construction Cost Analysis  credit: 3 OR 4 hours.
Introduction to the application of scientific principles to costs and estimates of costs in construction engineering; concepts and statistical measurements of the factors involved in direct costs, general overhead costs, cost markups, and profits; the fundamentals of cost recording for construction cost accounts and cost controls. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 320.

CEE 430  Ecological Quality Engineering  credit: 2 hours.
Characteristics of rivers and lakes which affect the management of domestic and industrial wastewaters; includes assessment of chemical hazards, an introduction to surveillance and biomonitoring, and a review of regulations governing effluents. Prerequisite: CEE 330.

CEE 431  Biomonitroing  credit: 3 hours.
The theory and application of biomonitoring as a component of environmental management; reviews a range of techniques to analyze effluents and assess condition and trend in the environment, using biological and ecological systems; emphasizes biomonitoring program design, selection and analysis of data, and interpretation of biomonitoring results. Prerequisite: CEE 430.

CEE 432  Stream Ecology  credit: 3 hours.
Description of physical, chemical, and biological characteristics in streams and rivers including an integrated study of the environmental factors affecting the composition and distribution of biota; emphasizes the application of ecological principles in aquatic ecosystem protection and management. Same as IB 450. Prerequisite: CEE 430.

CEE 433  Environmental Systems I  credit: 3 hours.
Introduction to the concepts and applications of environmental systems analysis. Application of mathematical programming and modeling to the design, planning, and management of engineered environmental systems, regional environmental systems, and environmental policy. Economic analysis, including benefit-cost analysis and management strategies. Concepts of tradeoff, non-inferior sets, single- and multi-objective optimization. Practical application to case studies to convey an understanding of the complexity and data collection challenges of actual design practice. Prerequisite: CEE 201 or GE 330; CEE 330.

CEE 437  Water Quality Engineering  credit: 3 hours.
Fundamental theory underlying the unit processes utilized in the treatment of water for domestic and industrial usage, and in the treatment of domestic and industrial wastewaters. Prerequisite: CEE 330; credit or concurrent registration in TAM 335.

CEE 440  Solid and Hazardous Waste  credit: 3 hours.
Investigation of the regulatory and technical issues affecting solid and hazardous waste management, with an emphasis on the principles governing the transport, fate, and remediation of solid and hazardous waste in the subsurface, including advection, dispersion, sorption, interphase mass transfer, and transformation reactions. Prerequisite: CEE 330.

CEE 442  Env Eng Principles, Physical  credit: 3 hours.
Analysis of the physical principles which form the basis of many water and air quality-control operations; sedimentation, filtration, inertial separations, flocculation, mixing, and principles of reactor design. Prerequisite: CEE 437.

CEE 443  Env Eng Principles, Chemical  credit: 4 hours.
Application of principles of chemical equilibrium and chemical kinetics to air and water quality. Chemistry topics are thermodynamics, kinetics, acid/base chemistry, complexation, precipitation, dissolution, and oxidation/reduction. Many applications are also presented. Prerequisite: CEE 437.

CEE 444  Env Eng Principles, Biological  credit: 3 hours.
Application of principles of biochemistry and microbiology to air and water quality, wastes, and their engineering management; biological mediated changes in water and in domestic and industrial wastewater. Prerequisite: CEE 443.

CEE 445  Air Quality Modeling  credit: 3 hours.
Overview of practical and advanced approaches to air pollution modeling, including aspects of pollutant transport, transformation, and loss. Models considered include: Gaussian plume, chemical mass balance, chemical reaction, grid and trajectory. Evaluation of
models and the development of efficient control strategies are also discussed. Same as ATMS 425. Prerequisite: CEE 330 and credit or concurrent registration in TAM 335; or ATMS 302.

CEE 446  Air Quality Engineering  credit: 3 hours.
Description and application of chemical and physical principles related to air pollutants, aerosol mechanics, attenuation of light in the atmosphere, air quality regulation, generation of air pollutants, methods to remove gaseous and particulate pollutants from gas streams, and atmospheric dispersion. Prerequisite: CEE 330; credit or concurrent registration in TAM 335.

CEE 447  Atmospheric Chemistry  credit: 3 hours.
Current knowledge of the biochemical cycles of atmospheric trace gases, their interactions on global and regional scales, and their significance for the chemistry in the atmosphere. The important fundamental concepts that are central to understanding air pollutants, e.g., the formation of aerosols and the transformation and removal of species in the atmosphere, will be introduced. Same as ATMS 420 and ENVS 450. Prerequisite: CHEM 102; ATMS 201 or CEE 330.

CEE 448  Indoor Air Quality Engineering  credit: 4 hours.
Same as ABE 476. See ABE 476.

CEE 449  Environmental Engineering Lab  credit: 3 hours.
Exposure to the use of traditional analysis tools and techniques in analysis, control, and design of natural and engineered environmental systems including air, water, wastewater, solid and hazardous waste, and ecological systems. Lecture-lab format. Prerequisite: CEE 437 or CEE 446.

CEE 450  Surface Hydrology  credit: 3 hours.
Descriptive and quantitative hydrology dealing with the distribution, circulation, and storage of water on the earth's surface; principles of hydrologic processes and presents methods of analysis and their applications to engineering and environmental problems. Prerequisite: CEE 350.

CEE 451  Environmental Fluid Mechanics  credit: 3 hours.
Incompressible fluid mechanics with particular emphasis on topics in analysis and applications in civil engineering areas; primary topics include principles of continuity, momentum and energy, kinematics of flow and stream functions, potential flow, laminar motion, turbulence, and boundary-layer theory. Prerequisite: TAM 335.

CEE 452  Hydraulic Analysis and Design  credit: 3 hours.
Hydraulic analysis and design of engineering systems: closed conduits and pipe networks; hydraulic structures, including spillways, stilling basins, and embankment seepage; selection and installation of hydraulic machinery. Prerequisite: TAM 335.

CEE 453  Urban Hydrology and Hydraulics  credit: 4 hours.
Hydraulic analysis and design of urban, highway, airport, and small rural watershed drainage problems; discussion of overland and drainage channel flows; hydraulics of storm-drain systems and culverts; determination of design flow; runoff for highways, airports, and urban areas; design of drainage gutters, channels, sewer networks, and culverts. Prerequisite: CEE 350.

CEE 455  Erosion and Sediment Control  credit: 2 hours.
Same as ABE 455 and TSM 455. See ABE 455.

CEE 457  Groundwater  credit: 3 hours.
Physical properties of groundwater and aquifers, principles and fundamental equations of porous media flow and mass transport, well hydraulics and pumping test analysis, role of groundwater in the hydrologic cycle, groundwater quality and contamination. Prerequisite: CEE 350 and TAM 335.

CEE 460  Steel Structures I  credit: 3 hours.
Introduction to the design of metal structures; behavior of members and their connections; theoretical, experimental, and practical bases for proportioning members and their connections. 3 undergraduate hours. No graduate credit. Prerequisite: CEE 360.

CEE 461  Reinforced Concrete I  credit: 3 hours.
Study of the strength, behavior, and design of reinforced concrete members subjected to moments, shear, and axial forces; extensive discussion of the influence of the material properties on behavior. 3 undergraduate hours. No graduate credit. Prerequisite: CEE 360.

CEE 462  Steel Structures II  credit: 3 OR 4 hours.
Metal members under combined loads; connections, welded and bolted; moment-resistant connections; plate girders, conventional behavior, and tension field action. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 460.

CEE 463  Reinforced Concrete II  credit: 3 OR 4 hours.
Study of the strength, behavior, and design of indeterminate reinforced concrete structures, with primary emphasis on slab systems; emphasis on the strength of slabs and on the available methods of design of slabs spanning in two directions, with or without supporting beams. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 461.

CEE 465  Design of Structural Systems  credit: 3 OR 4 hours.
The whole structural design process including definition of functional requirements, selection of structural scheme, formulation of design criteria, preliminary and computer-aided proportioning, and analysis of response, cost, and value. 3 undergraduate hours. 4 graduate hours. Prerequisite: Credit in either CEE 460 or CEE 461 with concurrent registration in the other.

CEE 467  Masonry Structures  credit: 3 OR 4 hours.
Introduction to analysis, design, and construction of masonry structures. Mechanical properties of clay and concrete masonry units, mortar, and grout. Compressive, tensile, flexural, and shear behavior of masonry structural components. Strength and behavior of unreinforced bearing walls. Detailed design of reinforced masonry beams, columns, structural walls with and without openings, and complete lateral-force resisting building systems. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 461.

CEE 468  Prestressed Concrete  credit: 3 OR 4 hours.
Study of strength, behavior, and design of prestressed reinforced concrete members and structures, with primary emphasis on pretensioned, precast construction; emphasis on the necessary coordination between design and construction techniques in prestressing. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 461.

CEE 469  Wood Structures  credit: 3 OR 4 hours.
Mechanical properties of wood, stress grades, and working stresses; effects of strength-reducing characteristics, moisture content, and duration of loading and causes of wood deterioration; glued-laminated timber and plywood; behavior and design of connections, beams, and beam-columns; design of buildings and bridges; other structural applications: trusses, rigid frames, arches, and pole-type buildings; prismatic plates and hyperbolic paraboloids. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 460 or CEE 461.

CEE 470  Structural Analysis  credit: 4 hours.
Direct stiffness method of structural analysis; fundamentals and algorithms; numerical analysis of plane trusses, grids and frames; virtual work and energy principles; introduction to the finite element method for plane stress and plane strain. Credit is not given for both CEE 470 and ME 471. Prerequisite: CEE 360.

CEE 471  Structural Mechanics  credit: 3 OR 4 hours.
Beams under lateral load and thrust; beams on elastic foundations; virtual work and energy principles; principles of solid mechanics, stress and strain in three dimensions; static stability theory; torsion; computational methods. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: MATH 285 and TAM 251.

CEE 472  Structural Dynamics I  credit: 3 OR 4 hours.
Analysis of the dynamic response of structures and structural components to transient loads and foundation excitation; single-degree-of-freedom and multi-degree-of-freedom systems; response spectrum concepts; simple inelastic structural systems; introduction to systems with distributed mass and flexibility. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 360, MATH 285, and TAM 212.

CEE 480  Foundation Engineering  credit: 3 hours.
Analysis and design of foundations, bearing capacity and settlement of foundations; stability of excavations and slopes; ground movements due to construction; analysis and design of excavations, retaining walls, slopes, and underground structures in soil and rock. 3 undergraduate hours. No graduate credit. Prerequisite: CEE 380.

CEE 483  Soil Mechanics and Behavior  credit: 4 hours.
Composition and structure of soil; water flow and hydraulic properties; stress in soil; compressibility behavior and properties of soils; consolidation and settlement analysis; shear strength of soils; compaction and unsaturated soils; experimental measurements. Prerequisite: CEE 380.

CEE 484  Applied Soil Mechanics  credit: 4 hours.
Application of soil mechanics to earth pressures and retaining walls, stability of slopes, foundations for structures, excavations; construction considerations; instrumentation. Prerequisite: CEE 483.

CEE 490  Computer Methods  credit: 3 OR 4 hours.
Review of programming concepts; formulation and programming of numerical, data processing, and logical problems with applications from various branches of civil engineering; organization of programs and data; development and use of problem-oriented programming languages in civil engineering. Same as CSE 491. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 101.

CEE 491  Decision and Risk Analysis  credit: 3 OR 4 hours.
Development of modern statistical decision theory and risk analysis, and application of these concepts in civil engineering design and decision making; Bayesian statistical decision theory, decision tree, utility concepts, and multi-objective decision problems; modeling and analysis of uncertainties, practical risk evaluation, and formulation of risk-based design criteria, risk benefit trade-offs, and optimal decisions. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 202.

**CEE 495   Professional Practice**   credit: 0 hours.
Series of lectures by outstanding authorities on the practice of civil engineering and its relations to economics, sociology, and other fields of human endeavor. Approved for S/U grading only.

**CEE 497   Independent Study**   credit: 1 TO 16 hours.
Individual investigations or studies of any phase of civil engineering selected by the student and approved by the department. 1 to 4 undergraduate hours. 1 to 16 graduate hours. May be repeated. Prerequisite: Consent of instructor.

**CEE 498   Special Topics**   credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in civil and environmental engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

**CEE 501   Constr Mats Characterization**   credit: 4 hours.
Laboratory methods, such as mercury intrusion porosimetry, gas absorption, thermal analysis, scanning electron microscopy, and X-ray diffraction, used to characterize civil engineering materials. General topics covered for each methods are theoretical background, calculation methods, models, and underlying assumptions, as well as operation of the instrument. Prerequisite: CEE 401.

**CEE 502   Advanced Cement Chemistry**   credit: 4 hours.
Advanced topics in chemistry of portland cement, chemistry and microstructure of cements, chemical reactions that lead to hardening, chemistry and microstructure of hydrated cements, effects of chemical and mineral admixtures, and chemical issues involved in the engineering behavior of the cements. Prerequisite: CEE 401.

**CEE 506   Pavement Design II**   credit: 4 hours.
Development of models for and analysis of pavement systems; use of transfer functions relating pavement response to pavement performance; evaluation and application of current pavement design practices and procedures; analysis of the effects of maintenance activities on pavement performance; economic evaluation of highway and airport pavements. Prerequisite: CEE 406.

**CEE 508   Pavement Evaluation and Rehab**   credit: 4 hours.
Concepts and procedures for condition survey rating; evaluation by nondestructive testing (roughness, skid resistance, structural capacity); destructive testing, maintenance strategies, rehabilitation of pavement systems for highways and airfields. Prerequisite: CEE 406.

**CEE 509   Transportation Soils**   credit: 4 hours.
Occurrence and properties of surficial soils, soil classification systems, soil variability; subgrade evaluation procedures, repeated loading behavior of soils; soil compaction and field control; soil moisture, soil temperature, and frost action; soil trafficability and subgrade stability for transportation facility engineering. Prerequisite: CEE 483.

**CEE 512   Logistics Systems Analysis**   credit: 4 hours.
Planning, design and operations of complex logistics systems: logistics costs; production, transportation and distribution systems; lot-sizing; traveling salesman problem (TSP) and vehicle routing problem (VRP); transshipments; facility location problem; supply chain management and inventory control; order instability; analytical methods and practical solution techniques. Prerequisite: CEE 310 and IE 310.

**CEE 515   Traffic Flow Theory**   credit: 4 hours.
Fundamentals of traffic flow, traffic flow characteristics, statistical distributions of traffic flow parameter, traffic stream models, car following models, continuum follow models, shock wave analysis, queuing analysis, traffic flow models for intersections, network flow models and control, traffic simulation. Prerequisite: CEE 416 and knowledge of probability and statistics.

**CEE 516   Network Analysis of Systems**   credit: 4 hours.
Same as IE 512. See IE 512.

**CEE 524   Construction Law**   credit: 4 hours.
Introduction to the legal aspects of the construction process and the potential liability that engineers can incur through the design, and post-construction processes. Organization and operation of the American court system, contact formation, defenses, remedies, and typical areas of dispute, and design services contracts, torts, product liability, agency, business organizations, intellectual property, and risk managements. Includes a mock trial of a recent construction-related case with the class serving as plaintiffs and defendants. Prerequisite: CEE 420, CEE 421, and CEE 422.
CEE 525  **Construction Case Studies**  credit: 4 hours.
Case studies of bridges, tunnels, buildings, transportation systems, heavy industrial construction, waterways, and marine structures in the context of construction engineering and management. Research, a team-oriented term project, presentations, and discussions in studio-style format. Prerequisite: Two of CEE 420, CEE 421, and CEE 422.

CEE 527  **Constr Conflict Resolution**  credit: 4 hours.
Basic theories and applications of dispute avoidance and resolution techniques in the construction industry. Mechanisms to promote collaborative environments and resolve disputes in construction projects; the different steps in the Dispute Resolution Ladder and the main features of a conflict management plan; case studies of practical applications of disputes avoidance and resolution techniques in the construction industry throughout the world. Prerequisite: One of CEE 420, CEE 421, CEE 422.

CEE 528  **Construction Data Modeling**  credit: 4 hours.
Introduces state-of-the-art research and literature in the construction data modeling domain. Fundamental techniques of construction data modeling; existing construction data representation approaches and specifications for the architecture, engineering, and construction domain; building information models; capabilities and limitation of data process models and representation approaches and techniques. Prerequisite: Two of CEE 420, CEE 421, CEE 422.

CEE 534  **Surface Water Quality Modeling**  credit: 4 hours.
Mathematical modeling of the movement and fate of pollutants and other substances in streams, lakes, and other natural water bodies. Development of one-, two-, and three-dimensional differential conservation equations, one-, two-, and three-dimensional steady-state and transient solutions. Finite difference, finite element, and finite particle methods. Lagrangian and Eulerian formulations, diffusion and dispersion tensors, numerical dispersion, and solution stability. Kinetic relationships describing important physical, chemical, and biochemical water constituent transformation phenomena. Field or laboratory experiment in model calibration and verification. Same as CSE 564. Prerequisite: MATH 285, CEE 442, and CEE 451.

CEE 535  **Environmental Systems II**  credit: 4 hours.
Fundamental concepts of uncertainty, risk, and reliability applied to environmental and water resources decision making. Chance constraints, Markov and Monte Carlo modeling, geostatistics, unconditional and conditional simulation, genetic algorithms, neural networks, simulated annealing, and a review of relevant portions of basic probability and statistical theory. Many techniques are applied to a real-world environmental decision making problem initially developed in CEE 434. Prerequisite: CEE 202 and CEE 434.

CEE 536  **Multitribute Decision Making**  credit: 4 hours.
Same as GE 530. See GE 530.

CEE 537  **Water Quality Control Proc I**  credit: 4 hours.
Theory and basic design of processes used in water and wastewater treatment, including adsorption, ion exchange, chemical oxidation and reduction, disinfection, sedimentation, filtration, coagulation, flocculation, and chemical precipitation. Prerequisite: Credit or concurrent registration in CEE 442 and CEE 443.

CEE 538  **Water Quality Control Proc II**  credit: 4 hours.
Theory and its application for design and operation of processes used in water and wastewater treatment; emphasis is on biological treatment processes and related processes for gas transfer, sludge dewatering, sludge disposal, and solids separations. Prerequisite: CEE 442 and CEE 443; credit or concurrent registration in CEE 444.

CEE 540  **Remediation Design**  credit: 4 hours.
Evaluation and design of alternative treatment processes for hazardous waste sites contaminated with organic and/or metal wastes. Group design project due at the end of the term. Prerequisite: CEE 440.

CEE 545  **Aerosol Sampling and Analysis**  credit: 4 hours.
Principles of sampling for particles and gases in the field of air pollution; examines instrumental techniques relevant to the design of sampling systems used in process control, ambient air monitoring, and laboratory experiments; methods of sample analysis and their limitations. Same as ATMS 535, ENVS 545, and ME 516. Prerequisite: CEE 446 and MATH 285.

CEE 546  **Air Quality Control**  credit: 4 hours.
Application of principles describing the generation, separation, and removal of air contaminants from gas streams generated by stationary sources. Local field trips typically occur each term to see the application of the air quality control devices in the field. Same as ME 515. Prerequisite: CEE 442 and CEE 446.

CEE 550  **Hydroclimatology**  credit: 4 hours.
Application of deterministic and probabilistic concepts to simulate and analyze hydrologic systems; discussion of the theory and application of linear and nonlinear, lumped, and distributed systems techniques in modeling the various phases of the hydrologic cycle. Prerequisite: CEE 450.
CEE 551  Open-Channel Hydraulics  credit: 4 hours.
Advanced hydraulics of free surface flow in rivers and open channels; discussion of theory, analytical and numerical solution
techniques, and their applications to gradually and rapidly varied nonuniform flows, unsteady flow, and flow in open-channel networks.
Prerequisite: CEE 451.

CEE 552  River Basin Management  credit: 4 hours.
Introduction to the multidisciplinary knowledge (hydrology, economics, systems engineering, etc.) and methodological skills
(optimization, simulation, etc.) for river basin management. River basin characterization-natural and social features; water availability
assessment based on hydrology, infrastructure, and policy; environmental flow requirements; water demand management and
microeconomics theory; integrated river basin management modeling. Prerequisite: CEE 350 and CEE 434.

CEE 555  Mixing in Environmental Flows  credit: 4 hours.
Physical processes involved in transport of pollutants by water; turbulent diffusion and longitudinal dispersion in rivers, pipes, lakes, and
the ocean; diffusion in turbulent jets, buoyant jets, and plumes. Prerequisite: MATH 241 or MATH 380; MATH 285; TAM 335.

CEE 557  Groundwater Modeling  credit: 4 hours.
Theory and application of numerical methods, finite differences and finite element, for solving the equations of groundwater flow and
solute transport; transport of chemically reacting solutes; model calibration and verification. Same as CSE 565. Prerequisite: CEE 457
and MATH 285.

CEE 559  Sediment Transport  credit: 4 hours.
Physical processes of transportation and deposition of sediment particles in liquid bodies with particular emphasis on fluvial sediment
problems; sediment in desilting basins; reservoirs and delta formation; erosion; stable channel design; river morphology. Prerequisite:
CEE 551.

CEE 560  Steel Structures III  credit: 4 hours.
Theories of ultimate behavior of metal structural members with emphasis on buckling and stability of members and frames; theory of
torsion applied to beam torsion, lateral-torsional buckling, curved beams with emphasis on design criteria; post-buckling strength of
plates and post-buckling versus column behavior. Prerequisite: CEE 462.

CEE 561  Reinforced Concrete III  credit: 4 hours.
In-depth study of the behavior of reinforced concrete members, including the relationships between behavior and building code
requirements. Prerequisite: CEE 463.

CEE 563  Reinforced Concrete IV  credit: 4 hours.
Strength and behavior of assemblages of reinforced concrete members, including a study of the applicability of traditional elastic design
procedures to structures which exhibit inelastic behavior under the influence of both short and long term loadings. Prerequisite: CEE
561.

CEE 570  Finite Element Methods  credit: 4 hours.
Theory and application of the finite element method; stiffness matrices for triangular, quadrilateral, and isoparametric elements; two-
and three-dimensional elements; algorithms necessary for the assembly and solution; direct stress and plate bending problems for
static, nonlinear buckling and dynamic load conditions; displacement, hybrid, and mixed models together with their origin in variational
methods. Same as CSE 551. Prerequisite: CEE 471 or TAM 551.

CEE 571  Plates and Shells  credit: 4 hours.
Classical plate bending theory; emphasis on methods of solution including series expansions, variational procedures, and finite element
techniques applicable to plate-type structures commonly encountered in practice; consideration of inplane loads, large deflections,
buckling, and anisotropy. Prerequisite: CEE 471.

CEE 572  Earthquake Engineering  credit: 4 hours.
Source mechanisms, stress waves, and site response of earthquake shaking; effect on the built environment; nature of earthquake
actions on structures; fundamental structural response characteristics of stiffness, strength, and ductility; representation of the
earthquake input in static and dynamic structural analysis; modeling of steel and concrete structures under earthquake effects; outputs
for safety assessment; comprehensive source-to-design actions project. Prerequisite: CEE 472.

CEE 573  Structural Dynamics II  credit: 4 hours.
Advanced concepts in structural dynamics and fundamentals of experimental structural dynamics. Modern system theory; data
acquisition and analysis; digital signal processing; experimental model analysis theory and implementation; random vibration concepts;
system identification; structural health monitoring and damage detection; pseudo-dynamic testing and model-based simulation; smart
structures technology (e.g., smart sensors; passive, active, and semi-active control). Prerequisite: CEE 472.

CEE 574  Probabilistic Loads and Design  credit: 4 hours.
Application of probabilistic methods in describing and defining loads on structures with emphasis on the random fluctuation in time and space. Introduction to random vibration methods and applications to dynamic response of structures under wind and earthquake loads. Computer simulation of structural loads and responses. Probability-based safety criteria and review of current methods of selection of design loads and load combinations. Prerequisite: CEE 202 and CEE 472.

CEE 575  Fracture and Fatigue  credit: 4 hours.
Fatigue and fracture behavior of steel structures and connections; fatigue and fracture mechanics theory and experimental data; assessment of behavior and current design specification practice. Prerequisite: CEE 462.

CEE 576  Nonlinear Finite Elements  credit: 4 hours.
Nonlinear formulations in solid mechanics and nonlinear equation solving strategies; finite deformation (hyperelasticty) elastostatics and elastodynamics, semi-discrete weighted residual formulations, implicit and explicit time-stepping algorithms and stability analysis; theory of mixed finite element methods, strain-projection methods, and stabilized methods; mixed methods for nonlinear coupled-field problems. Prerequisite: CEE 471 or TAM 445; CEE 470 or ME 471.

CEE 580  Excavation and Support Systems  credit: 4 hours.
Classical and modern earth pressure theories and their experimental justification; pressures and bases for design of retaining walls, bracing of open cuts, anchored bulkheads, cofferdams, tunnels, and culverts. Prerequisite: Credit or concurrent registration in CEE 484.

CEE 581  Earth Dams  credit: 4 hours.
Fundamentals of problems of slope stability; seepage in composite sections and anisotropic materials; methods of stability analysis; mechanism of failure of natural and artificial slopes; compaction; field observations. Prerequisite: Credit or concurrent registration in CEE 484.

CEE 582  Consolidation of Clays  credit: 4 hours.
Elastic solutions relevant to soil mechanics; permeability; general application of Terzaghi's theory of one-dimensional consolidation; advances in consolidation theories; mechanism of volume change; delayed and secondary compressibility and creep; theory of three-dimensional consolidation and solutions; radial flow and design of sand drains; analysis and control of settlement. Prerequisite: CEE 483.

CEE 583  Shear Strength of Soils  credit: 4 hours.
Physico-chemical properties of soils; fabric and structure of soil; mechanism of shearing resistance; residual shear strength of overconsolidated clays and clay shales; long-term shear strength of overconsolidated clays; Hvorslev shear strength parameters; undrained shear strength of clays. Prerequisite: CEE 483.

CEE 584  Geotechnical Case Histories  credit: 4 hours.
Critical study of case histories of projects in geotechnical engineering; current practice in the design and construction of foundations, embankments, and waterfront structures. Prerequisite: CEE 484.

CEE 585  Deep Foundations  credit: 4 hours.
Ultimate capacities and load-deflection of piles and drilled shafts subjected to compressive loads, tensile loads, and lateral loads; effects of duration of load, soil-structure interaction; two- and three-dimensional analysis of pile groups with closely-spaced piles; effects of installation; inspection of deep foundations and full-scale field tests. Prerequisite: CEE 484.

CEE 586  Rock Mechanics and Behavior  credit: 4 hours.
Physical properties and classification of intact rock, theories of rock failure, state of stress in the earth’s crust, stresses and deformations around underground openings assuming elastic, plastic, and time-dependent behavior; effect of geologic discontinuities on rock strength; introduction to stability analyses in rock. Prerequisite: CEE 483, GEOL 550, and TAM 451.

CEE 587  Applied Rock Mechanics  credit: 4 hours.
Application of rock mechanics to engineering problems; shear strength of rock masses; dynamic and static stability of rock slopes; deformability of rock masses; design of pressure tunnel linings and dam foundations; controlled blasting and blasting vibrations; tunnel support; machine tunneling; design and construction of large underground openings; field instrumentation. Prerequisite: CEE 586.

CEE 588  Geotechnical Earthquake Engrg  credit: 4 hours.
Seismic hazard analysis, cyclic response of soils and rock; wave propagation through soil and local site effects; liquefaction and post liquefaction behavior, seismic soil-structure of foundations and underground structures, seismic design of retaining walls, underground structures and tunnels. Construction and machine vibrations. Blasting. Prerequisite: CEE 472 and CEE 483.

CEE 589  Computational Geomechanics  credit: 4 hours.
CEE 595  Seminar  credit: 0 TO 1 hours.
Discussion of current topics in civil and environmental engineering and related fields by staff, students, and visiting lecturers. Approved for S/U grading only. May be repeated.

CEE 597  Independent Study  credit: 1 TO 16 hours.
Individual investigations or studies of any phase of civil engineering selected by the student and approved by the adviser and the staff member who will supervise the investigation. May be repeated. Prerequisite: Consent of instructor.

CEE 598  Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in civil and environmental engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

CEE 599  Thesis Research  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
Chemical and Biomolecular Engineering

CHBE 101  Hidden World of Engineering  credit: 3 hours.
Tells the stories of everyday objects: bathtubs, pop cans and screws. These simple objects shape our lives, yet are engineering masterpieces. To unveil this hidden world the course uses a humanistic approach. Designed to appeal to all majors, it uses human stories - filled with failures and triumphs - to reveal the methods of engineers. The course enchants with tales of ancient steel making, today's pop cans, huge stone monuments, and salt. The course will change how a student looks at his or her world. Several sessions focus on women engineers and the environment.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

CHBE 121  CHBE Profession  credit: 1 hours.
Lectures and problems on the history and scope of chemical engineering endeavors; decisions and criteria for process development and plant design. Approved for S/U grading only. Prerequisite: CHEM 102 or CHEM 202.

CHBE 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
Approve for both standard and S/U grading. May be repeated.

CHBE 201  Cooperative Education Planning  credit: 0 hours.
Same as CHEM 291. See CHEM 291.

CHBE 202  Cooperative Education Practice  credit: 0 hours.
Same as CHEM 293. See CHEM 293.

CHBE 210  CHBE Internship  credit: 0 hours.
Full-time practice of chemical science in an off-campus industrial setting or research laboratory environment. Summary report required. May be repeated. Approved for S/U grading. Prerequisite: Completion of freshman year or equivalent, or consent of Director of Cooperative Education in Chemical and Biomolecular Engineering.

CHBE 221  Principles of CHE  credit: 3 hours.
Lectures and problems on material and energy balances. Prerequisite: CHEM 104 or CHEM 204; credit or concurrent registration in CS 101.

CHBE 297  Individual Study Sophomores  credit: 1 TO 3 hours.
Individual study of problems related to Chemical and Biomolecular Engineering. May be repeated to a maximum of 6 hours. Prerequisite: Sophomore standing and consent of instructor.

CHBE 321  Thermodynamics  credit: 4 hours.
Fundamental concepts and the laws of thermodynamics; the first and second law applications to phase equilibrium and chemical equilibrium and other applications in the Chemical and Biomolecular Engineering profession. Prerequisite: CHBE 221.

CHBE 397  Individual Study for Juniors  credit: 1 TO 3 hours.
Individual study of problems related to Chemical and Biomolecular Engineering. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing and consent of instructor.

CHBE 421  Momentum and Heat Transfer  credit: 4 hours.
Introduction to fluid statics and dynamics; dimensional analysis; design of flow systems; introduction to heat transfer; conduction, convection, and radiation. Prerequisite: CHBE 221 or consent of instructor.

CHBE 422  Mass Transfer Operations  credit: 4 hours.
Introduction to mass transfer processes and design methods for separation equipment. Prerequisite: CHBE 421 or consent of instructor.

CHBE 424  Chemical Reaction Engineering  credit: 3 hours.
Chemical kinetics, chemical reactor design, and the interrelationship between transport, thermodynamics, and chemical reaction in open and closed systems. course Information: Prerequisite: Credit or registration in CHBE 422.

CHBE 430  
**Unit Operations Laboratory**  
credit: 4 hours. 
Experiments and computation in fluid mechanics, heat transfer, mass transfer, and chemical reaction engineering. Exercises in effective Chemical and Biomolecular Engineering communications. Prerequisite: CHBE 422; credit or concurrent registration in CHBE 424; senior standing in Chemical and Biomolecular Engineering.

This course satisfies the General Education Criteria for a: 
UIUC: Advanced Composition

CHBE 431  
**Process Design**  
credit: 4 hours. 
Capstone design course where students apply principles from previous courses to the design of complete chemical process systems. Topics include: techniques used in the synthesis and analysis of chemical processes, process simulation and optimization, effective communication in a chemical process engineering environment. Prerequisite: CHBE 422; credit or concurrent registration in CHBE 424.

This course satisfies the General Education Criteria for a: 
UIUC: Advanced Composition

CHBE 440  
**Process Control and Dynamics**  
credit: 3 hours. 
Techniques used in the analysis of process dynamics and in the design of process control systems; includes Laplace transforms, stability analysis, and frequency response methods. Laboratory emphasizes on-line data acquisition and control. Prerequisite: CHBE 421 and senior standing in Chemical and Biomolecular Engineering; MATH 285; CS 101.

CHBE 451  
**Transport Phenomena**  
credit: 3 hours. 
Unifying treatment of physical rate processes with particular emphasis on the formulation and solution of typical boundary value problems associated with heat, mass, and momentum transport. Prerequisite: CHBE 421; MATH 285.

CHBE 452  
**Chemical Kinetics & Catalysis**  
credit: 3 hours. 
Problems in chemical kinetics; techniques for the prediction and measurement of rates of reactions; and homogeneous and heterogeneous catalysis chain reactions. Prerequisite: CHEM 442 or CHBE 321.

CHBE 453  
**Electrochemical Engineering**  
credit: 2 OR 3 hours. 
Fundamentals of analysis, design, and optimization of electrochemical systems. Prerequisite: Senior standing in physical science or engineering.

CHBE 454  
**CHBE Projects**  
credit: 2 hours. 
Laboratory; development of an individual project. Prerequisite: Senior standing in Chemical and Biomolecular Engineering.

CHBE 456  
**Polymer Science & Engineering**  
credit: 3 hours. 
Fundamentals of polymer science and engineering: polymerization mechanisms, kinetics, and processes; physical chemistry and characterization of polymers; polymer rheology, mechanical properties, and processing. Credit is not given for both CHBE 456 and MSE 450, or MSE 451. Prerequisite: CHBE 321; credit or concurrent registration in CHBE 421; CHEM 444.

CHBE 457  
**Microelectronics Processing**  
credit: 3 hours. 
Introductory survey of chemical processing principles applied to microelectronic fabrication. Key concepts originate from chemical kinetics; thermodynamics; mass and energy balances; transport of mass, momentum and heat; and process synthesis and integration. Prerequisite: Junior or senior standing in Chemical and Biomolecular Engineering, Electrical and Computer Engineering, or Materials Science and Computer Engineering.

CHBE 471  
**Biochemical Engineering**  
credit: 3 TO 4 hours. 
Applications of chemical engineering principles to biological processes. Topics include enzyme mechanisms and kinetics, bioreactor design, cellular growth and metabolism, fermentation, and bioseparations. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior, senior, or graduate standing, or consent of instructor.

CHBE 472  
**Techniques in Biomolecular Eng**  
credit: 3 OR 4 hours. 
Study of the engineering principles that underlie many of the powerful tools in biotechnology, and addresses how scientific discoveries and engineering approaches are being used in current industrial applications. Topics addressed include: physical principles that govern self-organization and repair in biological systems; the tools that have been developed to characterize, manipulate, and quantify biomolecules; and the use of analytical tools and genetic manipulation in modern bioengineering and biotechnology applications. Same as BIOE 472. 3 undergraduate hours. 4 graduate hours. Prerequisite: CHEM 202, CHEM 203, CHEM 204 or equivalent; MATH 220 or MATH 221; PHYS 211, PHYS 214 or equivalent; MCB 450.

CHBE 473  
**Biomolecular Engineering**  
credit: 3 TO 4 hours.
Fundamental principles of biomolecular engineering and its applications in pharmaceutical, agriculture, chemical and food industries. Topics include gene discovery, rational design, directed evolution, pathway engineering, and functional genomics and proteomics. 3 undergraduate hours. 4 graduate hours.

**CHBE 474  Metabolic Engineering**  credit: 3 OR 4 hours.
Introduction to the principles and methodology of metabolic engineering. Topics include experimental and mathematical techniques for the quantitative description, modeling, control, and design of metabolic pathways. 3 undergraduate hours. 4 graduate hours. Prerequisite: MATH 225 and MATH 285 or consent of instructor.

**CHBE 494  Special Topics**  credit: 1 TO 3 hours.
Study of topics in chemical engineering; content varies from term to term. Typical topics include optimization, chemical kinetics, phase equilibrium, biochemical engineering, kinetic theory, and transport properties. May be repeated. Prerequisite: Senior standing in Chemical and Biomolecular Engineering or consent of instructor.

**CHBE 497  Individual Study for Seniors**  credit: 1 TO 3 hours.
Individual study of problems related to Chemical and Biomolecular Engineering. 3 undergraduate hours. No graduate credit. May be repeated to a maximum of 6 hours. Prerequisite: Senior standing and consent of instructor.

**CHBE 499  Senior Thesis**  credit: 1 TO 6 hours.
Limited in general to seniors in the curriculum in chemical and biomolecular engineering. Any others must have the consent of the head of the department. Each student taking the course must register in a minimum of 5 hours either in one term or divided over two terms. A maximum registration of 10 hours in two terms is permitted. In order to receive credit, a thesis must be presented by each student registered in CHBE 499. No graduate credit.

**CHBE 521  Applied Mathematics in CHBE**  credit: 3 OR 4 hours.
Development of mathematical models and a survey of modern mathematical methods currently used in the solution of chemical and biomolecular engineering problems; topics include the application of vectors and matrices, partial differential equations, numerical analysis, and methods of optimization in Chemical and Biomolecular Engineering. Prerequisite: Consent of instructor.

**CHBE 522  Fluid Dynamics**  credit: 4 hours.
Basic concepts in fluid dynamics with special emphasis on topics of interest to chemical and biomolecular engineers; derivation of the Navier-Stokes equations; solutions for creeping flow, for perfect fluids, and for boundary layers; non-Newtonian fluids; and turbulence. Prerequisite: Consent of instructor.

**CHBE 523  Heat and Mass Transfer**  credit: 3 OR 4 hours.
Principles of transfer operations developed in terms of physical rate processes; boundary layer heat and mass transfer, eddy diffusion, phase changes, and separation processes. Prerequisite: Consent of instructor.

**CHBE 551  Chemical Kinetics & Catalysis**  credit: 4 hours.
Rates and mechanisms of chemical reactions, treatment of data, steady state and unsteady behavior predictions of mechanisms, prediction of rate constants and activation barriers. Introduction to catalysis. Catalysis by solvents, metals, organometallics, acids, enzymes, semiconductors. Same as CHEM 582. Prerequisite: An undergraduate course in chemical kinetics.

**CHBE 553  Surface Chemistry**  credit: 4 hours.
Introduction to the behavior of molecules adsorbed on solid surfaces; the structure of surfaces and adsorbate layers. The bonding of molecules to surfaces; adsorbate phase transitions; trapping and sticking of molecules on surfaces. An introduction to surface reactions; kinetics of surface reactions. A review of principles of chemical reactivity; reactivity trends on surfaces; prediction of rates and mechanisms of reactions on metals, semiconductors, and insulators. Same as CHEM 586. Prerequisite: CHEM 444.

**CHBE 565  CHBE Seminar**  credit: 1 hours.
Required of all graduate students whose major is Chemical and Biomolecular Engineering. Approved for both letter and S/U grading. Prerequisite: CHBE 422.

**CHBE 571  Bioinformatics**  credit: 4 hours.
Same as ANSC 543, MCB 571, and STAT 530. Prerequisite: MATH 225; MATH 241 and MATH 461; or consent of instructor.

**CHBE 572  Metabolic Systems Engineering**  credit: 4 hours.
Prerequisite: MATH 225; MATH 241, and 285; or consent of instructor.

**CHBE 580  Lab Techs in Bioinformatics**  credit: 2 hours.
Prerequisite: MCB 150 and MCB 151; or consent of instructor.

**CHBE 593  Individual Study**  credit: 0 TO 4 hours.
Study under the supervision of a staff member in areas not covered in course offerings. Approved for both letter and S/U grading. Prerequisite: Consent of the staff member under whom the study is to be made.

CHBE 594  Special Topics  credit: 1 TO 4 hours.
Various advanced topics; generally taken during the second year of graduate study. Typical topics include turbulence, hydrodynamic instability, process dynamics, interfacial phenomena, reactor design, cellular bioengineering, properties of matter at high pressure, and phase transitions. May be repeated. Prerequisite: Consent of instructor.

CHBE 597  Special Problems  credit: 2 TO 16 hours.
Individual work on problem-oriented projects not included in theses. This could be research, engineering design, or professional work in chemical and biomolecular engineering which has educational values. The work must be done under the supervision of a staff member with the approval of the department head.

CHBE 598  Research Seminar  credit: 0 TO 4 hours.
Discussion of recent developments of importance to different areas of chemical and biomolecular engineering research. The course is divided into a number of sections, and subject matter differs from section to section and from time to time. Approved for S/U grading only. May be repeated. Prerequisite: Consent of instructor.

CHBE 599  Thesis Research  credit: 0 TO 16 hours.
Candidates for the master's degree who elect research are required to write a thesis. A thesis is always required for the Doctor of Philosophy. Not all candidates for thesis work necessarily are accepted. Any student whose major is in another department must receive permission from the head of the Department of Chemical and Biomolecular Engineering to register in this course. Approved for S/U grading only.
CHEM 101  **Introductory Chemistry**  credit: 3 hours.
Introduction to the basic concepts and language of chemistry; lectures, discussions, and lab. Prepаратory chemistry course for students who require additional background before enrolling in CHEM 102. This course has been approved for graduation credit for all students in the College of LAS. Students in other colleges should check with their college office. Prerequisite: 2.5 years of high school mathematics, or credit or concurrent registration in MATH 012.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

CHEM 102  **General Chemistry I**  credit: 3 hours.
For students who have some prior knowledge of chemistry. Principles governing atomic structure, bonding, states of matter, stoichiometry, and chemical equilibrium; descriptive chemistry of the elements and coordination compounds. Students may not receive credit for both CHEM 102 and CHEM 202. Prerequisite: Credit in or exemption from MATH 012; one year of high school chemistry or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

CHEM 103  **General Chemistry Lab I**  credit: 1 hours.
Laboratory studies to accompany CHEM 102. Prerequisite: Credit or concurrent registration in CHEM 102 is required.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

CHEM 104  **General Chemistry II**  credit: 3 hours.
Lecture and discussions. Section A, B and C (Biological Version): Chemistry of organic and biochemical systems, chemical energetics and equilibrium, chemical kinetics, and reaction mechanisms. Section D (Engineering Version): Chemistry of materials, including organic and biological substances, chemical energetics and equilibrium, chemical kinetics, and solids and crystals. Students may not receive credit for both CHEM 104 and CHEM 204. Prerequisite: CHEM 102 or CHEM 202 or advanced placement credit for one semester of college-level chemistry.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

CHEM 105  **General Chemistry Lab II**  credit: 1 hours.
Laboratory studies to accompany CHEM 104. Prerequisite: CHEM 102 and CHEM 103; credit or concurrent registration in CHEM 104 is required.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

CHEM 108  **Chemistry, Everyday Phenomena**  credit: 3 hours.
Laboratory-based work in which students will evaluate products (such as antacids), synthesize materials (such as soap), and gain a better understanding of forensic chemistry. Credit in CHEM 108 does not count toward Chemistry requirements for students in the Specialized Curriculum in Chemistry, the Science and Letters Chemistry major, the Chemistry Teaching Option, or the Chemistry minor; however the course may be taken by students in any of these groups for general education hours. Prerequisite: Credit or concurrent registration in MATH 012 or MATH 016.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

CHEM 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

CHEM 202  **Accelerated Chemistry I**  credit: 3 hours.
Lectures and discussions. Beginning chemistry course for students in the chemical sciences and others with strong high school chemistry and mathematics preparation. Chemical calculations, structure, bonding and equilibrium. Students may not receive credit for both CHEM 102 and CHEM 202. Prerequisite: Admission by U of I placement test or consent of adviser; credit or concurrent registration in MATH 220 or MATH 221; concurrent registration in CHEM 203.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

CHEM 203  Accelerated Chemistry Lab I  credit: 2 hours.
Companion laboratory course to CHEM 202. Comprehensive skills-oriented approach to learning laboratory technique and safety. Students may receive no more than two credit hours for both this course and CHEM 103. Prerequisite: Concurrent registration or credit in CHEM 202 or consent of instructor.

CHEM 204  Accelerated Chemistry II  credit: 3 hours.
Continuation of CHEM 202. Lectures and discussions. Emphasizes chemical thermodynamics, equilibrium, chemical kinetics, and coordination chemistry. Prerequisite: CHEM 202 and/or CHEM 203 and concurrent registration in CHEM 205, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

CHEM 205  Accelerated Chemistry Lab II  credit: 2 hours.
Laboratory and discussion. Includes experiments in qualitative analysis, inorganic synthesis, and kinetics as well as an individual project. Students may not receive credit for both CHEM 205 and CHEM 223. Prerequisite: Concurrent registration in CHEM 204 or consent of department.

CHEM 222  Quantitative Analysis Lecture  credit: 2 hours.
Fundamentals of quantitative analysis, chemical equilibrium and kinetics. This lecture course is intended to accompany CHEM 223. Students with credit in CHEM 222 can receive credit for CHEM 203. Prerequisite: CHEM 104 and CHEM 105 or equivalent.

CHEM 223  Quantitative Analysis Lab  credit: 1 hours.
Laboratory course covers the fundamentals of quantitative analysis, equilibrium and kinetics. Students may not receive credit for both CHEM 223 and CHEM 205. Prerequisite: Credit or concurrent registration in CHEM 222.

CHEM 232  Elementary Organic Chemistry I  credit: 3 hours.
Presents elementary structural and synthetic chemistry with emphasis on applications of this material to closely related areas. For students in agricultural, nutritional and biological sciences, as well as premedical, predental, and preveterinary programs. One-term survey course; may be followed by CHEM 332. Students may not receive credit for both CHEM 232 and CHEM 236. Prerequisite: CHEM 104 and CHEM 105, or CHEM 204.

CHEM 233  Elementary Organic Chem Lab I  credit: 2 hours.
Basic laboratory techniques in organic chemistry are presented with emphasis on experiments of interest to closely related areas. For students in agricultural science, dairy technology, food technology, nutrition, dietetics, premedical, predental, and preveterinary programs. Students may not receive credit for both CHEM 233 and CHEM 237. Prerequisite: CHEM 104 or CHEM 204 through CHEM 223.

CHEM 236  Fundamental Organic Chem I  credit: 4 hours.
Fundamental structural, synthetic, and mechanistic organic chemistry is presented. For students whose major is chemistry or for those in the specialized curricula in chemistry or chemical engineering. The first term of a two-term integrated sequence (to be followed by CHEM 436). This lecture course is intended to accompany CHEM 237. Students may not receive credit for both CHEM 236 and CHEM 232. Prerequisite: CHEM 204 or CHEM 222 through CHEM 223.

CHEM 237  Structure and Synthesis  credit: 2 hours.
Laboratory course introduces synthesis and the basic techniques for the separation, isolation and purification of organic and inorganic compounds. Students may not receive credit for both CHEM 237 and CHEM 233. Prerequisite: Credit or concurrent registration in CHEM 236.

CHEM 291  Cooperative Education Planning  credit: 0 hours.
On-campus planning and discussion of cooperative work-study education programs in industry and government. Each chemistry or chemical engineering student participating in the cooperative education program must register for CHEM 291/CHBE 201 or CHBE 202 each term (CHBE 201 if on-campus, CHBE 202 if off-campus). Same as CHBE 201. Approved for S/U grading only. Prerequisite: Acceptance into the School of Chemical Sciences Cooperative Education Program.

CHEM 293  Cooperative Education Practice  credit: 0 hours.
Off-campus cooperative practice of chemistry or chemical engineering in industrial or governmental facilities. Each chemistry or chemical engineering student participating in cooperative education must register for CHEM 293 for each off-campus term. Same as CHBE 202. Approved for S/U grading only. Prerequisite: Acceptance into the School of Chemical Sciences Cooperative Education Program.

CHEM 295  Chemistry Internship  credit: 0 hours.
Full-time practice of chemical science in an off-campus industrial setting or research laboratory environment. Summary report required. May be repeated. Approved for S/U grading only. Prerequisite: Completion of freshman year or equivalent, or consent of Director of Cooperative Education in Chemistry.

CHEM 312  Inorganic Chemistry  credit: 3 hours.
Basic chemical bonding in molecules, introduction to symmetry, chemistry of the main group elements, coordination chemistry of the transition elements, organometallic chemistry, solid state chemistry, bioinorganic chemistry, chemistry of the lanthanide and actinide elements. Prerequisite: CHEM 232 or CHEM 236.

CHEM 315  Instrumental Chem Systems Lab  credit: 2 hours.
Laboratory course emphasizes the application of modern instrumental techniques for characterizing the kinetic behavior and equilibrium properties of chemical systems. Prerequisite: Either CHEM 237 or both CHEM 223 and CHEM 233.

CHEM 317  Inorganic Chemistry Lab  credit: 3 hours.
Emphasizes modern techniques for the synthesis, purification, and characterization of inorganic and organometallic compounds. There are three components to the course: lectures on laboratory methodology and reporting, laboratory experiments, and report writing. The final third of the course is dedicated to special individualized projects. Prerequisite: CHEM 315, or credit or concurrent registration in CHEM 312, or equivalent; completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
   UIUC: Advanced Composition

CHEM 332  Elementary Organic Chem II  credit: 3 hours.
Second course; lectures covering topics in organic chemistry with special applications to the life sciences. This course should not be taken by students who have completed CHEM 236. Students may not receive credit for both CHEM 332 and CHEM 436. Prerequisite: CHEM 232 and CHEM 233.

CHEM 360  Chemistry of the Environment  credit: 3 hours.
Study of the chemistry of the atmosphere, the chemistry of soil and minerals in the Earth's crust, chemistry of natural waters, agricultural chemicals and organic pollutants, and topics related to energy use. Prerequisite: One year of general chemistry (CHEM 102-105 or CHEM 202-205) and one semester of organic chemistry (CHEM 232 or CHEM 236). The organic chemistry class may be taken concurrently with CHEM 360.

CHEM 420  Instrumental Characterization  credit: 2 hours.
Lecture course covers the fundamentals of instrumental characterization including: nuclear magnetic resonance spectroscopy, potentiometry, voltammetry, atomic and molecular spectroscopy, mass spectrometry, activation analysis, electron and x-ray spectroscopy, and gas and liquid chromatography. Prerequisite: CHEM 440; or credit or concurrent registration in CHEM 442; or consent of the instructor.

CHEM 423  Electronic Circuits I  credit: 0 TO 5 hours.
Same as PHYS 404. See PHYS 404.

CHEM 436  Fundamental Organic Chem II  credit: 3 hours.
Course is the second term of a two-term integrated sequence and should be taken the term following enrollment in CHEM 236. Students may not receive credit for both CHEM 436 and CHEM 332. Prerequisite: CHEM 236 and CHEM 237; students who have completed CHEM 232 and CHEM 233 may be enrolled with consent of instructor.

CHEM 437  Organic Chemistry Lab  credit: 3 hours.
Laboratory experiments in organic chemistry with emphasis on synthesis. Prerequisite: CHEM 233 or CHEM 237 and credit or concurrent registration in CHEM 332 or CHEM 436.

CHEM 438  Advanced Organic Chemistry  credit: 3 hours.
Third course, lectures. Topics in structure, synthesis and reactions of organic chemistry. Prerequisite: CHEM 332 or CHEM 436.

CHEM 440  Physical Chemistry Principles  credit: 4 hours.
One-term course in physical chemistry emphasizing topics most important to students in the biological and agricultural sciences. Not open to students in the specialized curricula in chemistry and chemical engineering. Laboratory experience in this area provided by
CHEM 315 to be taken preferably after CHEM 440. Same as BIOC 440. Prerequisite: CHEM 222 and CHEM 232, or equivalent; PHYS 102; and MATH 241 or equivalent calculus including partial derivatives.

CHEM 442  **Physical Chemistry I**  credit: 4 hours.
Lectures and problems focusing on microscopic properties. CHEM 442 and CHEM 444 constitute a year-long study of chemical principles covering topics such as quantum chemistry, atomic and molecular structure and spectra, statistical thermodynamics, properties and thermodynamics of materials in gases, solids, and liquids, and chemical kinetics and equilibria. Credit is not given for both CHEM 442 and PHYS 427. Prerequisite: CHEM 204 or CHEM 222; MATH 225 or MATH 415, and a minimal knowledge of differential equations, or equivalent; and PHYS 211, PHYS 212, and PHYS 214 or equivalent.

CHEM 444  **Physical Chemistry II**  credit: 4 hours.
Continuation of CHEM 442, focusing on bulk properties. Credit is not given for both CHEM 444 and PHYS 427. Prerequisite: CHEM 442.

CHEM 445  **Physical Principles Lab I**  credit: 2 hours.
Laboratory course features experiments concerning the fundamental physical nature of chemical phenomena. Typical experiments include magnetic resonance and thermochemistry. Prerequisite: CHEM 315, and credit or concurrent registration in CHEM 444; or consent of instructor.

CHEM 447  **Physical Principles Lab II**  credit: 2 hours.
Laboratory course features advanced experiments concerning the fundamental physical nature of chemical phenomena. This course is a continuation of CHEM 445. Typical experiments include dielectric constants of liquids and low-energy electron diffraction from surfaces. Prerequisite: CHEM 445 or consent of instructor.

CHEM 450  **Astrochemistry**  credit: 4 hours.
Covers the foundations of astrochemistry, a young field at the intersection between chemistry and astronomy. Topics to be discussed include the interstellar medium, atomic and molecular physics, interstellar chemistry, molecular astronomy, and unresolved enigmas in the field. Same as ASTR 450. Prerequisite: CHEM 442 and CHEM 444, or PHYS 427 and PHYS 486, or equivalent experience in quantum mechanics, thermodynamics, and statistical mechanics.

CHEM 451  **Astrochemistry Laboratory**  credit: 3 OR 4 hours.
An active, hands-on introduction to observational astrochemistry, laboratory astrochemistry and theoretical astrochemistry. Activities will include astronomical observations of interstellar molecules at the Observatory, spectroscopy of molecules in the laboratory, quantum chemical calculations and simulations of molecular spectra, and modeling of interstellar chemistry. Same as ASTR 451. Prerequisite: CHEM 450.

CHEM 460  **Green Chemistry**  credit: 3 OR 4 hours.
This course seeks to reduce the environmental consequences of the chemical industry. It includes modifying engineering practices, the development of new catalytic processes, modification of existing chemical processes, and bioremediation. 3 undergraduate hours. 4 graduate hours. Prerequisite: CHEM 312, CHEM 332, CHEM 360, or consent of instructor.

CHEM 470  **Computational Chemical Biology**  credit: 3 OR 4 hours.
Hands-on introduction to the simulation of biological molecules and bioinformatics. Topics included the principles of molecular modeling, molecular dynamics and monte carlo simulations, structure prediction in the context of structural and functional genomics, and the assembly of integrated biological systems. Course counts towards the CSE option. Same as BIOP 470. Prerequisite: One semester of undergraduate biology and organic chemistry and statistical thermodynamics or consent of instructor. Recommended: proficiency in Matlab and CS 101 or equivalent.

CHEM 472  **Physical Biochemistry**  credit: 3 hours.
Same as MCB 446 and BIOC 446. See BIOC 446.

CHEM 480  **Polymer Chemistry**  credit: 3 OR 4 hours.
Same as MSE 457. See MSE 457.

CHEM 482  **Polymer Physical Chemistry**  credit: 3 OR 4 hours.
Same as MSE 458. See MSE 458.

CHEM 483  **Solid State Structural Anlys**  credit: 4 hours.
Lectures and laboratory on various aspects of x-ray diffraction studies of solids; topics include the properties of crystals, symmetry, diffraction techniques, data collection methods, and the determination and refinement of crystal structures. Prerequisite: CHEM 442 or consent of instructor.

CHEM 484  **Thermodynamics of Materials**  credit: 4 hours.
CHEM 488  **Surfaces and Colloids**  credit: 3 OR 4 hours.

Same as MSE 480. See MSE 480.

CHEM 492  **Special Topics in Chemistry**  credit: 1 TO 3 hours.

Open to advanced undergraduates and graduate students. Deals with subjects not ordinarily covered by regularly scheduled courses. Prerequisite: Credit or concurrent registration in any 400-level course in chemistry.

CHEM 494  **Lab Safety Fundamentals**  credit: 1 hours.

Same as MSE 492. See MSE 492.

CHEM 495  **Teaching Secondary Chemistry**  credit: 4 hours.

Intended for undergraduates working toward certification to teach high school chemistry and graduate students working towards a Master's degree in the Teaching of Chemistry. Course aims to provide future teachers with hands-on experience in conducting laboratory experiments, demonstrations, and teaching strategies. Course does not count toward the eleven advanced hours in chemistry required in the specialized curriculum, nor does it apply to coursework required for the Ph.D. in Chemistry. Prerequisite: Undergraduate background in general chemistry and credit or concurrent enrollment in CI 403.

CHEM 499  **Senior Thesis**  credit: 2 TO 6 hours.

Research with thesis, under the direction of a senior staff member in chemistry. Normally the student takes two terms of CHEM 499 in the senior year. CHEM 499 is recommended for all those who plan to do research and graduate study, and it or BIOC 492 is a prerequisite for graduation with distinction in chemistry. In the term preceding their initial enrollment, those interested in taking the course should consult with their advisers and with the graduate adviser for the area of interest in which they plan to work. A maximum of 10 hours may be counted toward graduation and a thesis must be presented for credit to be received. No graduate credit.

CHEM 512  **Advanced Inorganic Chemistry**  credit: 4 hours.

Descriptive chemistry of the main group and transition elements, reactions and reaction mechanisms of inorganic systems, and electronic structure of inorganic molecules and solids. Prerequisite: CHEM 312 or approval of instructor.

CHEM 515  **Inorganic Chemistry Seminar**  credit: 1 hours.

Required of all graduate students whose major is in inorganic chemistry.

CHEM 516  **Physical Inorganic Chemistry**  credit: 4 hours.

Includes group theory and use of physical methods to provide information about the geometry, electronic structures, and reactivity of inorganic compounds in solution; emphasizes NMR and ESR. Prerequisite: CHEM 444.

CHEM 517  **Advanced Inorganic Chem Lab**  credit: 1 TO 3 hours.

Specialized laboratory techniques; more difficult inorganic syntheses. Prerequisite: Credit or concurrent registration in one of the lecture courses in inorganic chemistry in the 500 series.

CHEM 518  **Topics in Inorganic Chemistry**  credit: 2 TO 4 hours.

Advanced course dealing with a subject not ordinarily covered by regularly scheduled courses, such as organometallic chemistry, advanced ligand field theory and molecular orbital theory of inorganic compounds, kinetics and mechanisms of inorganic reactions, etc. May be repeated. Prerequisite: CHEM 516 or consent of instructor.

CHEM 520  **Advanced Analytical Chemistry**  credit: 3 hours.

Treatment of the basic issues of importance in modern analytical chemistry. Topics include basic chemical and measurement concepts, measurement instrumentation and techniques, and principles, tools, and applications in spectroscopy, electrochemistry, separations, sensors, mass spectroscopy and surface characterization. Prerequisite: CHEM 315, CHEM 420, and CHEM 444.

CHEM 521  **Advanced Analytical Chem Lab**  credit: 1 hours.

Graduate-level laboratory course in chemical analysis meant to be taken concurrently with CHEM 520. Experiments in atomic and molecular spectroscopy, electrochemistry, and molecular separations cover areas relevant to modern chemical analysis with similar emphasis on sample manipulation, instrumentation and data analysis. Prerequisite: CHEM 315, CHEM 420, CHEM 442, and CHEM 444, or preparation in chemistry and physics equivalent to a major in the natural sciences or engineering at the bachelor's degree level.

CHEM 522  **Experimental Spectroscopy**  credit: 4 hours.

Principles and applications of spectroscopic measurements and instrumentation. Atomic and molecular absorption, emission, fluorescence, and scattering, emphasizing physical interpretation of experimental data. Prerequisite: General physics and chemistry equivalent to a major in physical sciences for a bachelor's degree.

CHEM 524  **Electrochemical Methods**  credit: 4 hours.

CHEM 525  Analytical Chemistry Seminar  credit: 1 hours.
Required of all graduate students whose major is analytical chemistry.

CHEM 526  Topics in Analytical Chemistry  credit: 2 hours.
Recent advances in measurement science and the application of analytical chemistry to other sciences; designed to acquaint students with techniques and applications not covered in other courses. May be repeated. Prerequisite: Consent of instructor.

CHEM 530  Structure and Spectroscopy  credit: 4 hours.
Advanced survey of organic chemistry with emphasis on structure and spectroscopy. Prerequisite: CHEM 332 or CHEM 436.

CHEM 532  Physical Organic Chemistry  credit: 4 hours.
Advanced survey of organic chemistry with emphasis on reaction mechanisms and concepts of physical organic chemistry. Prerequisite: CHEM 332 or CHEM 436 and one year of physical chemistry.

CHEM 534  Advanced Organic Synthesis  credit: 4 hours.
Advanced survey of organic chemistry with emphasis on synthesis. Prerequisite: CHEM 332 or CHEM 436.

CHEM 535  Organic Chemistry Seminar  credit: 2 hours.
Current literature in organic chemistry. Prerequisite: Consent of instructor.

CHEM 536  Organic Chemistry Research  credit: 1 hours.
Lecture course on research techniques in organic chemistry. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

CHEM 538  Topics in Organic Chemistry  credit: 2 TO 4 hours.
Advanced course dealing with a subject not ordinarily covered by regularly scheduled courses, such as natural product synthesis and biosynthesis, organic photochemistry, chemistry of special families of organic compounds, etc. May be repeated. Prerequisite: CHEM 532 and CHEM 534, one of which may be taken concurrently.

CHEM 540  Quantum Mechanics  credit: 4 hours.
The sequence, CHEM 540 and CHEM 542, is designed to give seniors and graduate students a unified treatment of physical chemistry on an advanced level; topics include the electronic structure and spectra of atoms, principles of wave mechanics, experimental and theoretical aspects of the chemical bond in diatomic and polyatomic molecules, statistical thermodynamics, and chemical kinetics. Prerequisite: CHEM 444 or equivalent.

CHEM 542  Quantum Mech and Spectroscopy  credit: 4 hours.
Continuation of CHEM 540. Prerequisite: CHEM 540.

CHEM 544  Statistical Thermodynamics  credit: 4 hours.
Fundamentals of classical thermodynamics with emphasis on equilibrium and stability criteria; an introduction to equilibrium statistical mechanics with discussion of several ensembles and applications to ideal systems of interest to chemists; and introduction to nonequilibrium thermodynamics. Prerequisite: CHEM 442 and CHEM 444, or equivalent.

CHEM 545  Physical Chemistry Seminar  credit: 1 OR 2 hours.
Required of all graduate students whose major is physical chemistry. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

CHEM 546  Advanced Statistical Mechanics  credit: 4 hours.
Fundamentals of equilibrium statistical mechanics with selected applications to interacting classical fluids: dense gases, solutions, liquids, plasmas, and ionic solutions; introduction to nonequilibrium statistical mechanics and linear response theory. Prerequisite: CHEM 540 and CHEM 544, or equivalent, or consent of instructor.

CHEM 548  Molecular Electronic Structure  credit: 4 hours.
Theoretical basis of the electronic structure of atoms and molecules; molecular orbital concepts and self-consistent field theory; angular momentum and the full rotation group; electron correlation effects; and applications to electronic spectroscopy of organic molecules, detailed descriptions of chemical reactions, and molecular properties. Prerequisite: CHEM 540.

CHEM 550  Advanced Quantum Dynamics  credit: 4 hours.
The quantum mechanical description of time-dependent processes, including discussions of the time-dependent Schrödinger equation, approximations, interaction of matter with radiation, wave packets, elastic and inelastic scattering, and relaxation phenomena. 

Prerequisite: Concurrent registration in CHEM 540 or consent of instructor.

**CHEM 554  Topics in Physical Chemistry**  credit: 2 OR 4 hours.

Advanced course dealing with a subject not ordinarily covered by regularly scheduled courses, such as molecular spectroscopy, statistical mechanics, radiation and hot-atom chemistry, molecular quantum mechanics, radio-frequency spectroscopy, advanced experimental methods, kinetics of irreversible processes and cooperative phenomena, etc. May be repeated. Prerequisite: Consent of instructor.

**CHEM 570  Special Topics Chem Biol**  credit: 2 hours.

Advanced tutorials on special topics in Chemical Biology, including biomolecular synthesis and folding, biospectroscopy techniques, and computational biology. Emphasizes the development of presentation skills. Approved for both letter and S/U grading. Prerequisite: Enrollment in the Chemistry Graduate Program or consent of instructor.

**CHEM 572  Enzyme Reaction Mechanisms**  credit: 3 OR 4 hours.

Introduction to the catalytic strategies used by enzymes for accelerating chemical reactions using a combination of kinetics, enzymology, and structural information. Application of gene databases to infer evolutionary relationships among catalytic mechanisms. Same as MCB 553. Prerequisite: Two semesters of undergraduate organic chemistry (CHEM 232 or CHEM 236 and CHEM 332 or CHEM 436) or consent of instructor.

**CHEM 573  Isotopically Labeled Compounds**  credit: 0 TO 4 hours.

Variable credit course consisting of 2 parts: First half is a practical study of the most commonly used radioisotopes, including procedures for their safe handling; Last half of course covers the synthesis and analysis of isotopically labeled compounds using both radioisotopes and stable isotopes. Course credit is 2 hours (for the first half only) or 4 hours (for the entire course). Prerequisite: CHEM 436.

**CHEM 574  Genomics, Proteomics, Bioinfo**  credit: 3 OR 4 hours.

Survey of contemporary methods, applications, and implications of postgenomic biology, including genome sequencing, global RNA analysis, and proteomics. Same as MCB 554. Prerequisite: One year of undergraduate organic chemistry and one semester of biochemistry, or consent of instructor.

**CHEM 575  Chemical Biology Seminar**  credit: 1 hours.

Required of all graduate students whose major is Chemical Biology. Prerequisite: Consent of instructor.

**CHEM 576  Topics in Biophysical Chem**  credit: 4 hours.

Topics of importance in research in biophysical chemistry are discussed with emphasis on physical background and current applications; topics may be chosen from among the following: NMR and ESR spectra of biological macromolecules; x-ray diffraction studies of macromolecules; kinetics and statistical mechanics of helix coil transitions; physical approaches to the refolding and assembly of multi-subunit proteins; fluorescence spectroscopic studies on macromolecules; and light scattering from macromolecules in solution. Same as BIOP 540 and MCB 556. Prerequisite: CHEM 444 or equivalent, or CHEM 472.

**CHEM 578  Combinatorial Chemistry**  credit: 4 hours.

All aspects of combinatorial chemistry, the synthesis of multiple compounds in a rapid fashion, will be covered. Examples of combinatorial biology will also be discussed. Prerequisite: Chemistry graduate students or two semesters of undergraduate organic chemistry.

**CHEM 582  Chemical Kinetics & Catalysis**  credit: 4 hours.

Same as CHBE 551. See CHBE 551.

**CHEM 584  Introduction to Materials Chem**  credit: 4 hours.

Processing of ceramics, metals, polymers, and semiconductors, both traditional and advanced, and their mechanical, electrical, magnetic, optical and thermal properties.

**CHEM 585  Materials Chemistry Seminar**  credit: 1 hours.

Required of all Chemistry graduate students whose major area is Materials Chemistry.

**CHEM 586  Surface Chemistry**  credit: 4 hours.

Same as CHBE 553. See CHBE 553.

**CHEM 588  Physical Methods Mat Chem**  credit: 4 hours.
Physical Methods for Materials Chemistry. Includes physical techniques for characterization in Materials Chemistry, including thermal analysis, electron microscopy, microprobe analysis and electron spectroscopies, adsorption and surface area measurements, and X-ray powder diffraction.

CHEM 590  **Special Topics in Chemistry**  credit: 1 TO 4 hours.
Designed for students majoring or minoring in chemistry who wish to undertake individual studies of a non-research nature under the direction of a faculty member of the department. Approved for both letter and S/U grading. Prerequisite: Consent of instructor and written approval of department head. Staff for the course is the same as for CHEM 599.

CHEM 599  **Thesis Research**  credit: 0 TO 16 hours.
Candidates for the master's degree who elect research are required to present a thesis. A thesis is always required of students working toward the degree of Doctor of Philosophy. Not all candidates for thesis work necessarily are accepted. Any student whose major is in a department other than chemistry or chemical engineering must receive permission from the head of the Department of Chemistry to register in this course. Approved for S/U grading only.
Chinese

East Asian Languages and Cultures
Head of Department: Karen Kelsky
Department Office: 2090 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 244-1432
www.ealc.uiuc.edu

CHIN 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

CHIN 201  Elementary Chinese I  credit: 5 hours.
Introduction to Mandarin Chinese, including basic skills in speaking, reading, and writing. Not open to students with a background in Chinese language.

CHIN 202  Elementary Chinese II  credit: 5 hours.
Continuation of CHIN 201. Prerequisite: CHIN 201.

CHIN 203  Intermediate Chinese I  credit: 5 hours.
First term of second year of the Chinese language, including drill for more advanced conversational fluency; introduction to a greater variety of styles and levels of discourse and usage; and increasing study of the written language and more formal grammar. Prerequisite: CHIN 202 or equivalent.

CHIN 204  Intermediate Chinese II  credit: 5 hours.
Continuation of CHIN 203. Concentration on ability to engage in fluent discourse, on comprehensive grammatical knowledge, and on ability to read ordinary simple text in Chinese. Prerequisite: CHIN 203 or equivalent.

CHIN 221  Elementary Spoken Mandarin I  credit: 4 hours.
For non-majors who want to develop a basic competence in spoken Mandarin Chinese. Emphasizes the development of pronunciation, vocabulary and grammar skills with a concurrent emphasis on mastery of Pinyin phonetic orthography. Credit is not given for both this course and CHIN 201 or CHIN 202.

CHIN 222  Elementary Spoken Mandarin II  credit: 4 hours.
Continuation of CHIN 221. Emphasizes development of pronunciation, vocabulary and grammar skills, with a concurrent emphasis on mastery of Pinyin phonetic orthography. Credit is not given for both this course and CHIN 201 or CHIN 202. Prerequisite: CHIN 221.

CHIN 241  Chinese Reading and Writing  credit: 4 hours.
Students with a basic background in spoken Mandarin will help develop their ability to read and write Chinese characters. This course fulfills the language requirement for those programs with a two-term sequence. Successful completion of CHIN 241 and CHIN 242 fulfills the Liberal Arts and Science foreign language requirement. Credit is not given for both this course and CHIN 201 or CHIN 202. Prerequisite: CHIN 222, or speaking proficiency as determined by placement test.

CHIN 242  Chinese Reading and Writing  credit: 4 hours.
Continuation of CHIN 241. This course fulfills the foreign language requirement for those programs with a three- or four-term requirement. Credit is not given for both this course and CHIN 203 or CHIN 204. Prerequisite: CHIN 241, or proficiency as determined by placement test.

CHIN 305  Advanced Chinese I  credit: 5 hours.
An advanced-level course that emphasizes rapid reading, vocabulary acquisition, and newspaper reading. Prerequisite: CHIN 204 or CHIN 242.

CHIN 306  Advanced Chinese II  credit: 5 hours.
Continuation of CHIN 305. This course fulfills the language requirement for the undergraduate major in Chinese. Prerequisite: CHIN 305.

CHIN 407  Intro to Classical Chinese  credit: 3 OR 4 hours.
Introduction to the classical literary language, style, and structural patterns as reflected in the Confucian classics and other literary, philosophical, and historical texts. 3 undergraduate hours. 4 graduate hours. Prerequisite: CHIN 202 or equivalent.

CHIN 408  Readings in Literary Chinese  credit: 3 OR 4 hours.
Readings in texts selected from the Confucian classics and other literary, philosophical, and historical texts. Attention is given to linguistic patterns and philosophical concepts and to problems of translation. 3 undergraduate hours. 4 graduate hours. Prerequisite: CHIN 407 or equivalent.

CHIN 409  Social Science Rdgs Chinese  credit: 3 OR 4 hours.
Reading and translation of selected Chinese texts in the social sciences with emphasis on specialized terminology and prose style. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 9 undergraduate hours, or 12 graduate hours. Prerequisite: Three years of modern Chinese.

CHIN 440  Fourth-Year Chinese I  credit: 3 OR 4 hours.
The focus of this course is on reading and discussing modern and pre-modern Chinese literary selections in Chinese. Students continue to develop dictionary, literary and writing skills begun at the advanced (305-306) levels. 3 undergraduate hours. 4 graduate hours. Prerequisite: CHIN 306 or equivalent.

CHIN 441  Fourth-Year Chinese II  credit: 3 OR 4 hours.
Continuation of CHIN 440. 3 undergraduate hours. 4 graduate hours. Prerequisite: CHIN 440 or equivalent.

CHIN 471  Intro Second Lang Learn Tchg  credit: 4 hours.
Same as FR 471, GER 469, HUM 471, JAPN 471, LAT 471, RUSS 471, and SPAN 471. See SPAN 471.

CHIN 475  Intro to Comm Lang Tchg  credit: 4 hours.
Same as FR 475, GER 475, JAPN 475, LAT 475, RUSS 475, and SPAN 475. See SPAN 475.

CHIN 477  Chin Orth & Grm for Lng Tchg  credit: 3 hours.
Chinese Orthography & Grammar for Language Teaching. Teaching Mandarin Chinese in an English speaking environment. Covers the Chinese writing and sound systems, vocabulary, grammar, dialects and review available teaching materials. 3 undergraduate hours. Prerequisite: CHIN 441 or equivalent.

CHIN 478  Topics Secondary Lang Tchg  credit: 4 hours.
Same as FR 478, GER 478, JAPN 478, LAT 478, RUSS 478, and SPAN 478. See SPAN 478.

CHIN 490  Readings in Chinese Lit  credit: 3 OR 4 hours.
Guided readings in Chinese literature in the vernacular with regular individual conferences and a paper. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Reading knowledge of Chinese and consent of instructor.

CHIN 499  Study Abroad  credit: 0 TO 18 hours.
Lectures, seminars, and practical work in Chinese language, literature, and civilization and in other academic areas appropriate to the student's course of study. 0 to 16 undergraduate hours; 0 graduate hours. May be repeated to a maximum of 32 hours per academic year. Prerequisite: Junior standing and a GPA of 2.5.
Community Health

Kinesiology & Community Health
Head: Wojtek Chodzko-Zajko
Department Office: 127 Huff Hall, 1206 South Fourth, Champaign
Phone: 333-2307
www.kch.uiuc.edu

CHLH 100  Contemporary Health  credit: 3 hours.
Examines concepts of health and health promotion in contemporary society with emphasis on a healthy lifestyle for individuals and groups. Topics include self care, health insurance, exercise, nutrition and weight control, sexuality, contraception, tobacco, alcohol, cardiovascular health, infectious diseases, and cancer.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

CHLH 101  Introduction to Public Health  credit: 3 hours.
Introduction to the nation's public health system; includes an overview of the basic concepts and core functions of public health practice, the scope of applications, and the variety of service organizations (both public and private) that shape public health.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

CHLH 111  Intro Kines & Community Health  credit: 1 hours.
Serves as an introduction to the Kinesiology and Community Health Department and provides an overview of the Kinesiology and Community Health curricula, areas of study, and opportunities available for careers in the field. Approved for both letter and S/U grading. Credit will not be given for both CHLH 111 and KIN 125.

CHLH 140  Health Advocate I  credit: 2 hours.
An overview of current college student health issues and concerns, knowledge of the University of Illinois health care delivery system and an understanding of medical self care; develops skills in communication and referral techniques enabling students to be advocates for members of their living units. Approved for both letter and S/U grading.

CHLH 141  Health Advocate II  credit: 1 hours.
Provides the opportunity to utilize knowledge of college health issues and concerns, and communication skills in coordinating health promotion programming for members of their living units. May be repeated to a maximum of 3 hours. Approved for both letter and S/U grading. Prerequisite: CHLH 140.

CHLH 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated up to a maximum of 10 hours.

CHLH 200  Mental Health  credit: 2 hours.
Introduction to the science of mental health and illness including personality development, the genesis and manifestations of mental illness, and the maintenance of mental health; taught with an emphasis on the preventive and medical aspects of mental health.

CHLH 201  Health Informatics  credit: 2 hours.
Summarizes utilization of computer technology in key health care functions and introduces students to principles and evaluation of electronically supported health information. Students are required to complete a series of web site assessments with health information and compose and post their own health information web page.

CHLH 206  Human Sexuality  credit: 2 hours.
Emphasizes the behavioral aspects of human sexuality. Topics include: birth control; prenatal care, pregnancy and childbirth; sex roles; premarital sex; lifestyles; marriage and divorce.

CHLH 210  Community Health Organizations  credit: 2 hours.
Overview of institutions and agencies which provide health information, education, services, and care. Includes historical foundations, constituencies, organizational goals and structure, funding and expenditures, modes of service delivery, political and ethical issues.

CHLH 243  Drug Use and Abuse  credit: 2 hours.
Introduction to the biological, psychological, pharmacological, and legal aspects of drug use and abuse; surveys community and university resources concerned with drug use and abuse; emphasizes personal and social actions for responsible drug use.
CHLH 244  **Health Statistics**  credit: 3 hours.
Introduction to biostatistics. Students learn concepts necessary to understand statistical inference as applied to health issues.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

CHLH 245  **Disability and Popular Culture**  credit: 3 hours.
Overview of the major issues confronting health care systems from a macro perspective. Identification and analysis of the functions, major participants and trends in health care systems in the United States and abroad. Attention is directed at current and emerging issues having implications for health care systems in industrialized nations.

CHLH 250  **Health Care Systems**  credit: 3 hours.
Overview of the major issues confronting health care systems from a macro perspective. Identification and analysis of the functions, major participants and trends in health care systems in the United States and abroad. Attention on current and emerging issues having implications for health care systems in industrialized nations.

CHLH 260  **Introduction to Medical Ethics**  credit: 3 hours.
Course stresses normative bioethics: decisions about what is ethical behavior in a variety of real and practical issues. Analysis of medical ethical cases at the individual, community and wider national and international levels will be addressed. Approved for both letter and S/U grading.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

CHLH 274  **Introduction to Epidemiology**  credit: 3 hours.
Basic concepts and methods of epidemiology; patterns of disease occurrence; applications of epidemiology to health education, health services administration and planning, health policy, and environmental health.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

CHLH 304  **Foundations of Health Behavior**  credit: 4 hours.
Examination of the application of the social and behavioral sciences to health and health behavior. Psychological, social psychological, and sociological approaches to health behavior are analyzed. Topics covered include development of health attitudes and behaviors, perceptions of health and illness, methods of changing health behavior and patient-provider interaction. Prerequisite: CHLH 100, or consent of instructor; completion of the campus Composition I requirement.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences
UIUC: Advanced Composition

CHLH 314  **Introduction to Aging**  credit: 3 hours.
A multidisciplinary introduction to the study of aging; the social, psychological and physiological context of changing roles in later life; public and private policies that affect older people and their familis. Same as HDFS 314, RST 314, PSYC 314, and REHB 314.

CHLH 330  **Disability in American Society**  credit: 3 hours.
Same as REHB 330. See REHB 330.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

CHLH 336  **Tomorrow's Environment**  credit: 3 hours.
Same as CPSC 336 and ENVS 336. See CPSC 336.

CHLH 340  **Health Promotion Practicum**  credit: 3 hours.
Preparation and presentation of lifestyle workshops to campus community groups. Practica selected from one or more of the following topics: chemical education, sexuality, stress management or campus acquaintance rape education (CARE). Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing or consent of instructor.

CHLH 380  **Orientation to Internship**  credit: 1 hours.
Provides students with information concerning placement in internship. Topics include internship requirements; student responsibilities; preparation of resumes and cover letters; selecting an organization or site; interviewing; issues of professional development. Approved for both letter and S/U grading. Prerequisite: Junior standing.

CHLH 390  **Honors**  credit: 2 hours.
CHLH 393  **Special Projects**  credit: 2 OR 3 hours.
Special projects in research and independent investigation in any phase of health, kinesiology, recreation, and related areas selected by the students. May be repeated to a maximum of 12 hours.

CHLH 404  **Gerontology**  credit: 3 OR 4 hours.
Interdisciplinary approach to the study of aging and the aged from developmental, behavioral, and social perspectives. Same as HDFS 404. Prerequisite: Senior standing.

CHLH 407  **Disability, Culture & Society**  credit: 3 OR 4 hours.
Examines the cultural and social contexts of disability, their consequences for the experience and management of disability, and implications for cultural competence in disability-related research and practice. Same as ANTH 404, KIN 407, and REHB 407.

CHLH 409  **Women's Health**  credit: 3 hours.
Examines the culture of women in relationship to their health. Study is devoted to selected health care issues, developmental and physiological changes in the life cycle, health problems that affect women, and the maintenance of health. Same as GWS 409. Prerequisite: CHLH 100 or equivalent; or consent of instructor.

CHLH 410  **Public Health Practice**  credit: 4 hours.
Theory and practice of public health promotion as they relate to educational approaches in solving community health problems. Prerequisite: CHLH 210 or consent of instructor.

CHLH 421  **Health Data Analysis**  credit: 3 OR 4 hours.
Introduces health data analysis, sources and uses of health data, collection techniques and classification procedures, commonly used health indices, techniques of rate adjustment, graphic presentation of data as they relate to the planning, conducting, and evaluating of community health programs. Prerequisite: Quantitative Reasoning I course or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

CHLH 429  **Research Techniques**  credit: 4 hours.
Study of the ethics of research, research literature, research designs, and health measurement techniques utilized in the public health sciences. Emphasizes developing skills in analyzing research and assessment of health behaviors, and problem identification and research design for individual student research projects. Prerequisite: CHLH 590, or SOC 485, or EPSY 480; or equivalent.

CHLH 439  **Health Applications of GIS**  credit: 3 hours.
Same as GEOG 439 and PATH 439. See PATH 439.

CHLH 448  **Exercise & Health Psychology**  credit: 3 OR 4 hours.
Same as KIN 448. See KIN 448.

CHLH 455  **Health Services Financing**  credit: 3 hours.
Examines major topics and emerging trends in health financing, including sources of revenue, public and private financing organizations, reimbursement and sources of revenue to health providers, and capital financing in the health care industry. Prerequisite: Junior standing.

CHLH 456  **Organization of Health Care**  credit: 2 TO 4 hours.
Examines types and performance of health care organizations (e.g., doctors' offices, clinics, hospitals, and nursing homes), networks of health services, evaluation of health care, and social policy issues relating to organizations in the U. S. health care system. Same as SOC 476.

CHLH 457  **Health Planning**  credit: 3 hours.
Survey of the history and objectives of health planning as related to medical care delivery in the United States; methods of health, institutional and community planning; planning and marketing concepts and methods; analysis of consumer behavior, public policies, and private competitive forces. Same as SOCW 457. Prerequisite: CHLH 250 and junior standing.

CHLH 458  **Health Administration**  credit: 3 hours.
Examines management principles relative to health care institutions emphasizing goal setting, decision making, system analysis, organizational structure, conflict resolution, and leadership theories. Prerequisite: Senior or graduate standing, or consent of instructor.

CHLH 461  **Environmental Toxicology**  credit: 3 hours.
Same as CPSC 435, ENV 431, and IB 485. See IB 485.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHLH 469</td>
<td>Environmental Health</td>
<td>3 OR 4</td>
<td>Appreciation of the concepts and mechanisms used to prevent or control environmental conditions that may lead to infectious or other environmentally induced diseases. Presents topics from a public health perspective that include air pollution, water supply management, waste management, radiation protection, food hygiene, occupational health and disaster management. Same as ENVS 469. Prerequisite: CHLH 274 or equivalent.</td>
</tr>
<tr>
<td>CHLH 474</td>
<td>Principles of Epidemiology</td>
<td>4</td>
<td>Investigation of descriptive epidemiologic techniques (comparisons of disease rates in different populations) and analytic study designs (case-control and cohort studies and randomized trials). Applications to and examples from infectious and chronic diseases are presented. Group exercises involving the investigation of epidemiologic problems and application of analytic epidemiologic techniques are performed. Same as ENVS 474 and PATH 474. Prerequisite: One statistics course.</td>
</tr>
<tr>
<td>CHLH 485</td>
<td>Community Health Internship</td>
<td>8</td>
<td>Supervised field experience in official, voluntary and professional health agencies; designed to provide students with work experience in actual field situations. Students work in University approved health agencies for a minimum of 320 undergraduate hours. Approved for both letter and S/U grading. Prerequisite: Senior standing in Community Health.</td>
</tr>
<tr>
<td>CHLH 494</td>
<td>Special Topics</td>
<td>2 TO 4</td>
<td>Lecture-discussion course in topics of current interest; see Schedule for specific subjects. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.</td>
</tr>
<tr>
<td>CHLH 501</td>
<td>Issues in Health Education</td>
<td>4</td>
<td>Analyzes current developments, trends, and controversies in health education with emphasis on developing student competencies for intervention planning, implementation and analyses; and examines issues affecting the health educator in various work settings, including patient care, public health, school health, and higher.</td>
</tr>
<tr>
<td>CHLH 510</td>
<td>Public Health Dev</td>
<td>4</td>
<td>Advanced study of the principles, practice and current issues of public health at the local, state, national and international levels, including the relationships between public health departments, voluntary health agencies, and other community organizations.</td>
</tr>
<tr>
<td>CHLH 516</td>
<td>Epidemiology Infectious Dis</td>
<td>3</td>
<td>Same as PATH 516. See PATH 516.</td>
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<tr>
<td>CHLH 517</td>
<td>Principle/Method Epidemiology</td>
<td>4</td>
<td>Same as PATH 517. See PATH 517.</td>
</tr>
<tr>
<td>CHLH 527</td>
<td>Statistics in Epidemiology</td>
<td>4</td>
<td>Description and application of quantitative issues and statistical techniques prominent in the analysis of classification data arising from epidemiologic cohort or case-control aetiologic studies; studies of preventive public health; and therapeutic clinical interventions. Practice using available computing software for implementation is stressed. Same as ENVS 527 and PATH 525. Prerequisite: CHLH 474 and minimum of two statistics courses covering multiple regression and correlation.</td>
</tr>
<tr>
<td>CHLH 529</td>
<td>Evaluation of Health Policies</td>
<td>4</td>
<td>Overview of the theoretical and public policy foundations of program evaluation, qualitative and quantitative methods of program evaluation (including needs assessment, program monitoring, and outcome evaluation), and applications in the public health and social welfare sectors. Extensive work outside of class on evaluation project required. Prerequisite: CHLH 429 or equivalent graduate research methods course recommended.</td>
</tr>
<tr>
<td>CHLH 540</td>
<td>Health Behavior: Theory</td>
<td>4</td>
<td>Analysis of social science theories and perspectives that comprise the foundation of health education theory and practice. Includes development of a conceptual frame of reference for understanding, predicting, and facilitating change in health behaviors. Prerequisite: Graduate standing.</td>
</tr>
<tr>
<td>CHLH 550</td>
<td>Health Policy: United States</td>
<td>4</td>
<td>Comprehensive analysis of the policy process in health care in the United States; systematic and critical review of health policy development, implementation, and evaluation; impact of government at all levels and the role of providers, industry, labor, and consumer in health policy. Prerequisite: Admission to graduate program in community health or the MBA Administration Program; CHLH 429; or consent of instructor.</td>
</tr>
<tr>
<td>CHLH 560</td>
<td>Spatial Epidemiology</td>
<td>4</td>
<td>Same as GEOG 560 and PATH 560. See PATH 560.</td>
</tr>
<tr>
<td>CHLH 571</td>
<td>Epidemiology and the Media</td>
<td>1 OR 2</td>
<td></td>
</tr>
</tbody>
</table>
Same as PATH 671. See PATH 671.

**CHLH 574  Seminar in Epidemiology**  credit: 4 hours.
Discussion of advanced topics in epidemiologic methods and research. Prepares students for thesis or dissertation research through study of selected literature and the completion of a research paper. Prerequisite: CHLH 474 or equivalent.

**CHLH 578  Applied Epidemiology**  credit: 4 hours.
Advanced epidemiologic analysis of disease problems. Covers research designs including cohort, case-control, and intervention trials; methods of analysis including multivariate adjustment for confounding and description of effect modification; and application of statistical computer software with emphasis on chronic diseases. Same as VP 520. Prerequisite: CHLH 474, VP 517, or equivalent and advanced course work in statistics through multivariate analysis.

**CHLH 585  Community Health Internship**  credit: 4 hours.
Observation, study, and practical work in student's area of specialization under supervision in professional field situations; student works for a minimum of 12 weeks in a University-approved agency or site. Prerequisite: CHLH 429, CHLH 474 and CHLH 510; or graduate standing in community health; or consent of the department.

**CHLH 590  Biostatistics**  credit: 4 hours.
Same as PATH 524. See PATH 524.

**CHLH 591  Seminar for Advanced Students**  credit: 2 hours.
Critical evaluation of theories and research studies in community health, emphasizing research methods and experimental design and analysis; and student presentations of thesis literature reviews and research procedures. May be repeated to a maximum of 4 hours. Prerequisite: Master's thesis.

**CHLH 593  Special Projects**  credit: 2 TO 4 hours.
Independent research on special projects. May be repeated to a maximum of 8 hours. Prerequisite: EPSY 480, KIN 501, and CHLH 540 or equivalent.

**CHLH 594  Special Topics**  credit: 2 OR 4 hours.
Lectures on topics of current interest.

**CHLH 599  Thesis Research**  credit: 0 TO 16 hours.
Preparation of theses in community health. May be repeated to a maximum of 16 hours. Approved for S/U grading only.
Campus Honors Program Courses

Campus Honors Program
Director: Bruce F. Michelson
Program Office: 1205 W. Oregon, Urbana
Phone: 244-0922
www.honors.uiuc.edu

CHP 395  Interdisciplinary Seminar credit: 3 hours.
Seminar on interdisciplinary topics in the natural sciences, social sciences, humanities, and arts. Open to Chancellor's Scholars and other honors students. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing in the Campus Honors Program.

CHP 396  Interdisciplinary Seminar ACP credit: 3 hours.
Course is identical to CHP 395 except for the additional writing component. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing in or permission of the Campus Honors Program. Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition
Curriculum and Instruction

CI 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

CI 260  **Serving Child in Schools/Comm**  credit: 2 hours.
This community engagement course is designed for students interested in working with children (defined as birth through high school), careers serving children, and/or parenthood. The focus for this course is tutoring and mentoring children (elementary through high school). A minimum of two hours per week of approved community service related to children is a requirement of the course. Placements with schools will be made through the course instructor. Class content focuses on relating to children, motivating and engaging children in learning, community institutions and agencies serving children, and social issues affecting the lives of American children today.

CI 335  **Content Area App of Educ Tech**  credit: 1 hours.
Course will explore a wide range of educational technologies, investigating in detail those that can be effectively integrated into the full range of content areas in education. Course will cover the use of distributed information servers, multi-media collaborative network applications and other advanced instructional technologies to support learning and teaching. Approved for letter grade. Prerequisite: EPS 201, EPSY 236 or equivalent; admission to Elementary or Secondary Teacher Education Program.

CI 381  **Arts, Exper, & Knowledge-Impli**  credit: 3 hours.
Course will provide introduction to aesthetic theories, in particular romantic, modern and post-modern theories of art. We will examine concepts like cognition and affect and their role in the arts, in experience, and in education. In discussions of the implications of aesthetic theories to education, we will draw on case-studies using qualitative research methodology to portray curriculum. Requirement will include weekly readings, the writing of papers and reflective journals, and visits to the Krannert Art Museum and Krannert Performance Center, where we will apply theory to our personal and shared experiences of art.

CI 395  **Independent Study**  credit: 2 OR 3 hours.
Permits study of problems not considered in other courses; for students who excel in self-direction and intellectual curiosity. Approved for both letter and S/U grading. Prerequisite: Junior or senior standing; minimum GPA of 3.5; completion of Advanced Composition requirement, and consent of adviser and staff member supervising the work.

CI 401  **Intro Tchg in a Diverse Societ**  credit: 3 hours.
Orients the student to ways in which English, Mathematics, Science, or Social Studies is learned in middle school and senior high school settings. Integrates an introduction to the use of technology as both a tool and a context for teaching and learning. As participants in a series of learning activities, students will reflect on the teaching and learning of English, Mathematics, Science, or Social Studies from an inquiry oriented perspective. Coursework is integrated with a middle or high school field experience to connect theory with practice in an examination of research and current trends in English, Mathematics, Science, or Social Studies education. Prerequisite: EPS 301, EPSY 201 or equivalent, concurrent enrollment in EOL 440, and admission to the Secondary Teacher Education Program.

CI 402  **Tchg Diverse Middle Grade Stu**  credit: 3 hours.
Examines the curriculum and philosophy of teaching students in the middle grades. Students will focus on a number of related topics including teaching a diverse middle school student population, including all students in instruction, using technology for teaching middle school English, Mathematics, Science, and Social Studies and alternative means of assessing students’ learning. Seminar content will be integrated with coursework in adolescent development, and special education in middle school settings. Coursework is integrated with a middle grade field experience. Requires concurrent enrollment in EPSY 430 and SPED 205. Prerequisite: CI 401.

CI 403  **Tchg Diverse High School Stu**  credit: 3 hours.
Examines the curriculum and philosophy of teaching students in high school grades. Students will focus on a number of related topics including teaching a diverse student population, including all students in instruction, using technology for teaching high school English, Mathematics, Science, and Social Studies and alternative means of assessing students’ learning. Seminar content will be integrated with coursework in instructional technology, assessment, and special education with high school students. Coursework is integrated with a high school field experience. Requires concurrent enrollment in EPSY 485 and SPED 405. Prerequisite: CI 402.

CI 404  **Tchg and Assessing Sec Sch Stu**  credit: 4 hours.
Emphasizes the practical application of theory and recommended practices for developing curriculum, teaching, and assessing learning in the middle and senior high school years. Requires concurrent enrollment in EDPR 442. Prerequisite: CI 403.

CI 405  Intro Tchg Elem Age Children  credit: 2 hours.
Exames the contexts of elementary education in the public schools. Includes content on teaching as a profession and community/family contexts of education. Coursework is integrated with field experiences with elementary children. Prerequisite: EPS 201; EPSY 236; admission to the Elementary Teacher Education Program.

CI 406  Thry Prac in Elem Schl Tch I  credit: 4 hours.
Course examines teaching in the elementary grades. Students will focus on a number of related topics, including classroom management, instructional design, personal and professional attributes of effective teachers, and multicultural perspectives. Coursework is integrated with field assignments in public elementary schools. Prerequisite: CI 405; admission to the Elementary Teacher Education Program.

CI 407  Thry Prac in Elem Schl Tchg II  credit: 2 hours.
Course continues the examination of teaching in the elementary grades, begun in CI 405 and CI 406. In addition to continuing the study of some topics introduced in the previous courses, students will focus on the following topics as they complete student teaching: designing instruction for classes including special needs students, managing technology in the classroom, and working with parents. Requires concurrent enrollment in EDPR 432. Prerequisite: CI 406; admission to the Elementary Teacher Education Program.

CI 408  Sem in Secondary Teaching I  credit: 2 hours.
CI 408 is the first in a two-course sequence that supports participants in the Secondary Alternative Certification Program during their first-year full-time teaching internship. The course fosters critical reflection and professional growth by providing a forum for problem-posing and problem-solving on issues typically faced by novice teachers. Prerequisite: Enrollment in the Alternative Certification Program in Secondary Science and Mathematics Teaching.

CI 409  Sem in Secondary Teaching II  credit: 2 hours.
CI 409 is the second in a two-course sequence that supports participants in the Secondary Alternative Certification Program during their first-year full-time teaching internship. The course fosters critical reflection and professional growth by providing a forum for problem-posing and problem-solving on issues typically faced by novice teachers. Prerequisite: CI 408.

CI 410  Middle School Instruction  credit: 2 hours.
Students will develop an understanding of general middle school instructional theory and practices, with a focus on teaching in their content area(s) of concentration. Emphasis is on middle school instruction based on the current standards of the National Middle School Association.

CI 415  Lang Varieties,Cult,& Learning  credit: 3 hours.
For students in the elementary certification program. Introduces students to issues related to first- and second-language development, cultural diversity, and language variation. Addresses the above issues in terms of teaching and learning and serves as a base for subsequent courses that will extend these issues in the content areas. Prerequisite: Students must be admitted to the Elementary Education Program prior to taking this course.

CI 420  Found of Early Childhood Educ  credit: 5 hours.
Study of the role of the early childhood teacher in designing, organizing, and implementing educational programs for children in preschools, kindergartens, and the first three grades of the elementary school; includes the history, philosophy, and theory of early childhood education; includes morning school practicum providing at least 90 hours of early field experience. Prerequisite: Admission to the Early Childhood Teacher Education Program; EPSY 236; EPSY 301; CI 468.

CI 421  Prin & Prac in Early Childhood  credit: 3 hours.
Studies the principles and practices of using play as an educational tool in early childhood education; reviews historical, philosophical, and psychological foundations of nursery-kindergarten methods; assesses techniques relating play to various aspects of instruction; surveys materials and equipment; and presents methods of classroom evaluation. Concurrent enrollment in EDPR 420 and EDPR 438; credit or concurrent registration in EDPR 250, section EC. Prerequisite: CI 420; admission to the Early Childhood Teacher Education Program. 3 undergraduate hours.

CI 422  Families, Communities, Schools  credit: 3 hours.
Principles and practices of building partnerships and collaboration among families, community agencies, and schools in a diverse society for early childhood professionals; covers strategies for building understanding, trust, and effective communication with all children and their families including those who have special needs, have cultural and linguistic differences, come from non-traditional family configurations, and who face poverty, health problems, and/or family dysfunction. Prerequisite: Admission to the Early Childhood Teacher Education Program.

CI 430  Teaching Children Mathematics  credit: 3 hours.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI 431</td>
<td>Tchg Elementary Mathematics</td>
<td>4</td>
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<tr>
<td>CI 432</td>
<td>Invest Approach Elem Math Inst</td>
<td>2</td>
</tr>
<tr>
<td>CI 433</td>
<td>Found of Bilingual Educ</td>
<td>2-4</td>
</tr>
<tr>
<td>CI 434</td>
<td>Teaching Secondary Math</td>
<td>3</td>
</tr>
<tr>
<td>CI 435</td>
<td>Computer-Assisted Instruction</td>
<td>4</td>
</tr>
<tr>
<td>CI 436</td>
<td>Computer and Mathematics Educ</td>
<td>4</td>
</tr>
<tr>
<td>CI 437</td>
<td>Tchg Elementary Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>CI 438</td>
<td>Social Stud Early Childhood Ed</td>
<td>2</td>
</tr>
<tr>
<td>CI 439</td>
<td>Culture in the Classroom</td>
<td>2-4</td>
</tr>
<tr>
<td>CI 440</td>
<td>Iss Prac in Address Diversity</td>
<td>1</td>
</tr>
</tbody>
</table>

Examines children's learning of mathematics and meaningful instructional methods, representations and materials. Emphasis given to number and operations (including both whole and rational numbers), number theory and statistics/probability. Includes laboratory experience with supervised problem solving. Credit is not given for both CI 430 and CI 431. Prerequisite: MATH 103; admission to the Elementary Teacher Education Program.

Course will model and examine an investigative approach to elementary mathematics instruction, which is purposeful, inquiry-based, and meaningful mathematics instruction, and which is integrated across math topics and with other content areas. Prerequisite: CI 431; admission to the Elementary Teacher Education Program.

This is a required course for students seeking a mathematics endorsement at the middle school level while earning or holding teacher certification in another subject area. It is also required for students completing the campus Teacher Education Minor in Mathematics for grades 9-12 and the Teacher Education Minor in Mathematics for grades 6-8. This methods course covers: a) The NCTM and Illinois Learning Standards for Mathematics, b) "Best practice" in mathematics pedagogy, c) Assessment in the mathematics classroom, d) technology in mathematics classrooms, and e) the design of unit and lesson plans in mathematics. Students will design and deliver lessons as part of their course work. Prerequisite: CI 431; admission to the Elementary Teacher Education Program.

Examines the role of the computer as an instructional tool in the secondary school mathematics classroom; reviews curricular materials and develops sample classroom projects in computer mathematics; analyzes computational problems and develops algorithms for their solution; and includes iteration, Monte Carlo methods, and simulation. Prerequisite: CS 101 or consent of instructor.

Examines the principles, place and practice of science and mathematics education in early childhood education and in the lives of young children; stresses the functional nature of science and mathematics and their inter-relatedness; presents methods, techniques, experiences, and materials of value in teaching mathematics and science in early childhood education; and the role of the classroom teacher. Opportunity for experience in field and laboratory work. Requires concurrent enrollment in EDPR 432. Prerequisite: CI 420, general education requirements in mathematics (MATH 103 or equivalent), 2 years of college science, admission to the Early Childhood Teacher Education Program.

Examines children's learning of mathematics and meaningful instructional methods, representations and materials. Emphasis given to number and operations (including both whole and rational numbers), number theory and statistics/probability. Includes laboratory experience with supervised problem solving. Credit is not given for both CI 430 and CI 431. Prerequisite: MATH 103; admission to the Elementary Teacher Education Program.

Examines the organization, scope, and sequence of the mathematics program and the functional nature of mathematics; methods, techniques, experiences, and materials of value in teaching mathematics, and the role of the classroom teacher. Includes laboratory experience, with supervised problem solving. Credit is not given for both CI 430 and CI 431. Prerequisite: MATH 103; admission to the Special Education Program.

Course examines multiple perspectives on and pedagogical responses to the historical diversity that has characterized United States education since its beginning. Course places particular emphasis on cultural issues, including the social construction and implication of race in contemporary society. Identity issues play a significant role as students examine the intersections of their biographies with those children in classrooms, especially in relation to classroom practices and the belief systems embodied in them. Developing concepts
of racism (personal, cultural, and institutional) as well as of class and gender, are pivotal in response to agendas of privilege, equity, and justice. Culturally relevant practices are examined, as well as those developed in regard to differences in “ability” or in response to language and dialect differences. Prerequisite: CI 448; admission to the Elementary Teacher Education Program.

CI 448  **Tchg Elem Social Studies**  credit: 3 hours.
Course examines the nature and role of social studies in elementary schools, both in terms of the formal curriculum and of the impact of the school as a social system on children's social learning. Examines multiple approaches to what should be experienced and learned in social studies as well as the nature of social inquiry. Various instructional methods emphasizing direct experiences as well as reading are emphasized. Local, state, and national trends in curriculum and evaluation are addressed. Students engage in social inquiry, as well as develop, implement, and evaluate an action research project focusing in depth on a particular practice of social education. Prerequisite: Admission to the Elementary Teacher Education Program.

CI 449  **Issues in Latina/o Educ**  credit: 2 TO 4 hours.
Critiques and explores various theoretical frameworks used to explain Latina/Latino academic achievement. Examines curricular and instructional issues by investigating how different school systems have implemented schooling for Latina/Latino students. Develops critical understanding of the role of education within the Latina/Latino community. Same as LLS 449. 3 undergraduate hours. 2 or 4 graduate hours.

CI 450  **Tchg Elem Science I**  credit: 2 hours.
Course is the first in a two-course sequence that examines science content, learning theory, and the teaching of science in the elementary school. Introductory course includes an introduction to children's learning in science and science content for elementary age children. Prerequisite: Admission to the Elementary Teacher Education Program.

CI 451  **Tchg Elem Science II**  credit: 2 hours.
Course is the second in a two-course sequence that examines elementary science content, learning theory, and the teaching of science in the elementary school. Course includes an examination of the nature of science, as well as methods and materials for teaching science and assessing science learning. Prerequisite: CI 450; admission to the Elementary Teacher Education Program.

CI 465  **Lang Literacy in EC Educ I**  credit: 3 hours.
Basic principles, techniques, and materials for the emergent literacy classroom. Emphasizes linguistic and cultural factors in culturally diverse settings. Concurrent enrollment in CI 420. Prerequisite: EPSY 236; admission to the Early Childhood Teacher Education Program.

CI 466  **Lang Literacy in EC Educ II**  credit: 2 hours.
Emphasizes developmentally appropriate practices for the teaching of reading and writing in grades K-2. Requires concurrent enrollment in EDPR 432. Prerequisite: CI 465.

CI 467  **Princ Tchg Lit to Child Youth**  credit: 3 hours.
Examines literature written for children and youth and the uses of literature in the school curriculum. Students may not receive credit for both CI 467 and LIS 403. Prerequisite: One college course in literature; admission to the Elementary Teacher Education Program.

CI 468  **Children's Lit for EC Edu**  credit: 2 hours.
Examines literature written for children ages birth-eight years, extensive reading and analysis of literature in all genres and formats; evaluations of literature in relation to cognitive and linguistic development, emergent literacy, linguistic and cultural diversity, and family and school literacy; reviews and applies theories about the functions of literature. Prerequisite: One college course in literature; admission to the Early Childhood Teacher Education Program.

CI 471  **Princ Prac Foster Indep Rdg**  credit: 2 TO 4 hours.
Comprehension and reading to learn in the content fields; appropriate for elementary and middle school teachers, K-8. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: CI 475, course in beginning reading, or consent of instructor.

CI 472  **Tchg Reading in Grades 4-12**  credit: 2 OR 4 hours.
Examines current literacy practices beyond the primary grades including factors related to reading comprehension, vocabulary development, fluency, and motivation. Includes issues related to diversity and ESL related to teaching reading. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: EPSY 201; junior standing or consent of instructor.

CI 473  **Literacy in Content Areas**  credit: 1 hours.
Provides secondary and K-12 level education majors with principles and practices of effective language and literacy instruction in their content areas, consistent with the Core Language Arts and Content Standards of the Illinois State Board of Education. Prerequisite: Admission to a teacher education program.

CI 475  **Teach Elem Rdg & Lang Arts I**  credit: 4 hours.
First of a two-course sequence that examines the basic theories, issues, methods, and materials for a developmental K-8 language arts program. Emphasizes the need to integrate the four language arts (reading, writing, speaking, and listening) as tools for learning across the curriculum. Addresses cultural diversity in language arts instruction, with emphasis on linguistic diversity. Prerequisite: CI 467; admission to the Elementary Teacher Education Program.

CI 476  **Teach Elem Rdg & Lang Arts II**  credit: 3 hours.
Second of a two-course sequence that examines the basic theories, issues, methods, and materials for a developmental K-8 language arts program. It continues to emphasize the need to integrate the four language arts (reading, writing, speaking, and listening) as tools for learning across the curriculum. This second course, however, places a relatively greater emphasis on writing than on reading speaking, and listening. Continues to address cultural diversity in language arts instruction, with emphasis on linguistic diversity. Prerequisite: CI 467 and CI 475; admission to the Elementary Teacher Education Program.

CI 484  **Learning Technologies**  credit: 4 hours.
Same as HRE 472. See HRE 472.

CI 499  **Issues and Development in Educ**  credit: 2 TO 4 hours.
Seminar course on topics not treated by regularly scheduled courses; requests for initiation may be made by students or faculty member. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours. Prerequisite: Junior standing.

CI 500  **Elem School Classroom Programs**  credit: 4 hours.
Explores organizational centers for determining selection and sequence of educative experiences in the elementary school classroom; emphasizes the role of the teacher in curriculum construction.

CI 501  **Fundamentals of Curr Develop**  credit: 4 hours.
Examines a variety of definitions of curriculum developments; readings reflect current theories and research related to substantive issues in the field: how learning is influenced by stated goals of education, cultural background of the learners, structure of the school setting, competencies of teachers, psychological characteristics of the learners, and means of measuring student achievement.

CI 507  **Prob Trends in Spec Fields**  credit: 4 hours.
Intensive examination of problems and trends in the subject fields. May be repeated to a maximum of 8 hours.

CI 509  **Curriculum Research**  credit: 4 hours.
Reviews the principal methodologies used in research on curriculum problems; emphasizes subject-analytical, large-scale survey, experimental, case methods, and clinical studies; emphasizes the conceptual and practical problems in such research.

CI 517  **Bilingual and ESL Assessment**  credit: 4 hours.
Explores the role of assessment in the education of culturally and linguistically diverse students in K-12 classrooms. The current state of assessment in the United States will be analyzed as well as how assessments are used for the identification and placement of bilingual and ESL students. An overview of standardized forms of assessment at the state, district and school level will be provided. Students will also learn how to administer, score and evaluate language proficiency assessment. Same as LLS 517. Prerequisite: CI 433 or consent of instructor.

CI 518  **Evaluation of Edu Programs**  credit: 4 hours.
Origins, assumptions, applications, and development of approaches to educational program evaluation in practice over the past twenty years; unobtrusive measures and noneducation evaluation systems; and practice in collecting evaluative data. Same as EPSY 572. Prerequisite: EPSY 480, one year of work with children or youth in an institutional setting, or consent of instructor.

CI 519  **Methods of Child Study**  credit: 4 hours.
Studies ways in which teachers can evaluate child behavior and development with an emphasis on classroom application; instruction and practice in the use and interpretation of observations, anecdotal records, rating scales, interviews, achievement tests, intelligence tests, questionnaires, and sociometric and projective techniques. Prerequisite: EPSY 404 or consent of instructor.

CI 520  **Programs in Early Child Edu**  credit: 4 hours.
Advanced course intended primarily for teachers and supervisors of younger children, ages three to eight; reviews and analyzes research findings, experimentation, and current trends in curriculum organization, procedures, and materials essential to developing classroom programs for children.

CI 521  **Curr Prob Trends in EC Edu**  credit: 4 hours.
Includes principles underlying education practices in day care centers, preschool/nursery and kindergarten settings derived from theory and research in developmental psychology, social psychology, anthropology, and other related disciplines.

CI 522  **Arts in EC: Curr in Context**  credit: 4 hours.
Role of dance, drama, music, literature, and the visual arts in early childhood education, focusing on production/performance, appreciation, history, and aesthetics. Interrelationships among curriculum, notions of child development, cultural contexts, and unique traditions of different arts disciplines. Current art education practices in the United States and other countries. Requires attendance at performances and visits to an art museum. Prerequisite: Graduate status.

CI 530  Trends and Issues in Math Edu  credit: 4 hours.
Addresses theories of learning, research studies, curriculum development projects, and other factors that have influenced elementary mathematics programs; also considers problems and issues in contemporary programs. Prerequisite: CI 500 or CI 520 or consent of instructor.

CI 531  Development of Math Programs  credit: 4 hours.
Focuses on procedures for developing curricula in the major content areas of mathematics and considers alternative instructional procedures. Prerequisite: CI 430 or consent of instructor.

CI 532  Prof Development in Math Ed  credit: 4 hours.
Considers research perspectives, policies and practices associated with the professional development of mathematics teachers. Specifically, students will examine what policymakers recommend for effective professional development, what research findings seem to suggest, how schools do professional development for successful mathematics teaching, and the implications of policy and real world practices for equality of opportunity for mathematics learning.

CI 540  Current Issues in Sci Edu  credit: 4 hours.
Advanced seminar in science education for teachers, consultants, and administrators. Identifies major problems and issues; analyzes current trends and research; and develops a philosophical framework related to science education. Prerequisite: Teacher education course in science and two years of college science; or consent of instructor.

CI 542  Science Ed & Phil of Science  credit: 4 hours.
Surveys issues in philosophy of science that are central to science education through an exploration of the works of twentieth century philosophers of science who were most influential in shaping thinking about science in the science education community. Relevant readings from science and history of science are also explored. Prerequisite: College level coursework in a science discipline or consent of instructor.

CI 550  Methods of Educational Inquiry  credit: 4 hours.
Critical consideration of research concepts and methods used in contemporary educational inquiry. Same as EPSY 573 and SPED 550.

CI 551  Res on Tchg: Issues & Methods  credit: 4 hours.
This course is designed for doctoral and advanced master's students interested in research on classroom teaching. Research methods that have been used to study classroom teaching are reviewed so that students will become familiar with the research paradigms and the conceptual, technical, and political issues related to those paradigms. Students will conduct a critical analysis of research on teaching in an area of interest. Prerequisite: Admission to a doctoral program or consent of instructor.

CI 560  Trends & Issues Language Arts  credit: 4 hours.
Advanced seminar in literacy for teachers, researchers, and specialists. Focuses on trends and issues in elementary and middle school language arts. Current theories, relevant research and practical applications are considered in relation to reading, writing, listening, and speaking.

CI 561  Theory Prac in Child Comp  credit: 4 hours.
Focuses on theory and practice of children's written composition from preschool through middle school. Includes development of understanding of texts, pedagogy, motivation and classroom practices that facilitate writing. Students learn about their own writing, participate in peer writing conferences, and produce research or curricular projects for use in classrooms. Prerequisite: CI 475 and CI 476, or course in writing, or consent of instructor.

CI 562  Ling and the School Curr  credit: 4 hours.
Analyzes linguistics for the school curriculum including dialect diversities, new theories of grammar, lexicography, and variations in oral and written forms of language; gives attention to discourse analysis and ethnography of communication. Prerequisite: Admission to a doctoral program or consent of instructor.

CI 563  Writing Studies I  credit: 4 hours.
Same as ENGL 505. See ENGL 505.

CI 564  Writing Studies II  credit: 4 hours.
Same as ENGL 506. See ENGL 506.

CI 565  Topics Research and Writing  credit: 4 hours.
CI 566  **Topics Writ Pedagogy & Design**  credit: 4 hours.
Same as ENGL 582. See ENGL 582.

CI 567  **Child Lit in the School Curr**  credit: 4 hours.
Investigates trends and issues related to teaching literature in the school; focuses attention upon the organization and planning of a balanced literature curriculum (fictional and informational). Prerequisite: CI 467 or LIS 404; and a college course in English literature or consent of instructor.

CI 568  **Cont Classics in Child Lit**  credit: 4 hours.
Critically examines children's books that have received major national and international awards and prizes and the requirements for that distinction; gives particular attention to the most recent publications so honored and their implications for use in the classroom. Prerequisite: CI 467 or CI 567, or LIS 404; and ENGL 106, or equivalent; or consent of instructor.

CI 569  **Topics Discourse and Writing**  credit: 4 hours.
Same as ENGL 584. See ENGL 584.

CI 570  **Issues & Trends in Reading**  credit: 4 hours.
The timing of beginning reading, the influence of certain linguistic findings on methodology and terminology in instructional materials, and the influence of research on methodology are addressed in a way that provides a historical perspective for evaluating the merit of emerging issues and trends. Prerequisite: CI 475 and CI 476 or equivalent, or consent of instructor.

CI 572  **Organ & Super School Rdg Prog**  credit: 4 hours.
Studies procedures for planning, improving, and evaluating reading programs on a system-wide basis. Open only to those persons who are preparing to supervise reading programs or with approval of graduate adviser. Prerequisite: CI 575.

CI 573  **Early/Elem Rdg Inst**  credit: 4 hours.
Planning and evaluating reading instruction and materials in nursery school through Grade Three. Prerequisite: CI 475 or CI 471, or equivalent; or consent of instructor.

CI 575  **Assess/Diag Reading Problems**  credit: 4 hours.
Nature, causes, and diagnosis of reading difficulties; translation of diagnostic information into instructional practice. Prerequisite: CI 475 or CI 471, or equivalent.

CI 576  **Assessment-Based Reading Instr**  credit: 4 hours.
Supervised experiences; special attention to evaluative and interpretative techniques in cases of severe reading disabilities based on the analysis of specific reading needs. May be repeated to a maximum of 8 hours. Prerequisite: CI 575.

CI 577  **Clinical Practicum in Reading**  credit: 4 hours.
Diagnostic procedures and individual instruction with small groups of children who have reading difficulties. Prerequisite: CI 575 and CI 576.

CI 578  **Bilit Dev of Young Children**  credit: 4 hours.
Helps students understand the language and literacy development of young bilinguals. Students will develop an understanding of the issues in biliteracy research, explore the diversity of research topics and perspectives in biliteracy research, and learn to think and write critically about research on early biliteracy development.

CI 580  **Qual Rsch in Lang & Lit Educ**  credit: 4 hours.
Focuses on the goals and nature of qualitative, observational study of life in educational settings, with an emphasis on oral and written languages. Adopts interpretive and critical perspectives on research and includes key readings on the ethnography of oral and written communication in schools, given a socioculturally and linguistically diverse society. All students will conduct a small scale study in an education site. Prerequisite: At least one semester of graduate course work.

CI 581  **Aesthetics and Curriculum**  credit: 4 hours.
Provides a synthesis of theoretical and autobiographical perspectives on aesthetic issues and their ramifications for the development and the critique of arts curricula. Drawing on art as an important source of knowledge and communication, the course reviews ideas from aesthetics and arts education (e.g., music, poetry, literature, visual arts, theater and dance education). Identifies principles common to all art forms but manifested differently in each of them to develop tools and skills for the design of, evaluation of, and research on arts curricula. Same as DANC 581. Prerequisite: Graduate standing, and background with one of the arts, or consent of instructor.

CI 582  **Rdg and Wrtg Across the Curr**  credit: 4 hours.
Designed for elementary and middle school educators, this course focuses on theory and practice related to both intradisciplinary integration (across the language arts) and interdisciplinary integration (across the content areas). Specific methods and strategies for fostering effective integrated literacy instruction are explored. Prerequisite: CI 475 and CI 476, or equivalent methods course in reading and language arts.

CI 584   **Theories in SLA**  credit: 4 hours.
Same as EALC 584, EIL 584, EPSY 563, FR 584, GER 584, ITAL 584, LING 584, PORT 584, SLS 584, and SPAN 584. See SPAN 584.

CI 585   **Informational Children's Lit**  credit: 4 hours.
Intended for elementary and middle school teachers, this course is an introduction to informational, or nonfiction children's literature. Students will explore the importance of including informational literature in the curriculum, how to select informational children's literature, and methods for teaching with informational text and for helping children learn from informational text. Prerequisite: CI 467, or equivalent children's literature course; CI 475 and CI 476, or equivalent methods course in reading and language arts.

CI 590   **Sem for Adv Stu of Education**  credit: 0 TO 8 hours.
Approved for both letter and S/U grading. Prerequisite: Admission to doctoral study.

CI 591   **Field Study & Thesis Seminar**  credit: 4 TO 8 hours.
Assists doctoral candidates in planning field studies and thesis problems. Students are expected to present their studies at each of four stages: (1) the inception, delimitation, tentative design stage; (2) the proposed design stage; (3) the revised design stage; and (4) the final design stage. Students are expected to analyze critically all presentations. Prerequisite: Admission to doctoral study.

CI 595   **Independent Study**  credit: 2 OR 4 hours.
Offers opportunity and challenge of self-directive, independent study; develops the individual's ability as an independent student, and enables the student to pursue needed study in a field in which appropriate courses are not being offered during a given term. May be repeated to a maximum of 8 hours with approval. Prerequisite: Approval of study outline by adviser and the department chairperson prior to enrollment.

CI 599   **Thesis Research**  credit: 0 TO 16 hours.
Individual direction of research and thesis writing. Approved for S/U grading only. May be repeated.
Committee on Inst Cooperation

Graduate College
Dean of College: Debasish Dutta
College Office: 204 Coble Hall, 801 South Wright Street, Champaign
Phone: 333-0035
www.grad.uiuc.edu

CIC 390  CIC 390 Intercampus Reg  credit: 0 TO 18 hours.
CIC 500  CIC Traveling Scholar  credit: 0 TO 20 hours.
CIC 501  CIC Common Courses & Inst  credit: 0 TO 20 hours.
Cinema Studies

Cinema Studies, Unit for
Interim Director: Richard Leskosky
Office Address: 4080 Foreign Language Building, 707 South Mathews, Urbana
Phone: 333-3356
www.uiuc.edu/unit/cinema

CINE 104  Intro to Film  credit: 3 hours.
Same as ENGL 104. See ENGL 104.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CINE 117  Shakespeare on Film  credit: 3 hours.
Same as ENGL 117. See ENGL 117.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CINE 193  Undergraduate Seminar  credit: 1 TO 3 hours.
Topics vary. Consult Class Schedule section note or the Unit for Cinema Studies. Specific sections are approved for S/U grading only. Check the Class Schedule for a list of these sections. May be repeated to a maximum of 6 hours if topics vary.

CINE 211  Intro to African-American Film  credit: 3 hours.
Examination of the history, theory, and aesthetics of African-American filmmaking from the silent era to the present. Films are analyzed within their sociocultural contexts, with particular attention to how constructions of race, identity, and community interact with class, gender, and sexuality; and the link between film and other forms of Black expressive culture. The impact of African-American film on popular culture, links to the African Diaspora, and relations with other communities of color will also be discussed. Same as AFRO 211.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

CINE 247  Animation  credit: 3 hours.
History and theory of animation in the cinema and other media. Prerequisite: One college-level Cinema Studies course or consent of instructor.

CINE 261  Survey of World Cinema I  credit: 3 hours.
Survey of the development of equipment, techniques, and themes of the cinema from its origins through the coming of sound; lectures, discussions, and showings of selected films.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CINE 262  Survey of World Cinema II  credit: 3 hours.
Survey of the development of equipment, techniques, and themes of the cinema from the coming of sound to the present; lectures, discussions, and showings of selected films.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CINE 266  Intro to East Asian Cinema  credit: 3 hours.
An introduction to the cinemas of China (PRC, Hong Kong, Taiwan), Japan and South Korea from the point of view of shared themes, aesthetics and cultural concerns. Concentrating on theatrical fiction films from across the region, the course will focus on such issues as nationhood, family, the role of women, responses to colonialism, post-colonialism, national trauma and responses to modernization among other concerns. In addition, the course will examine the artistic traditions that give these cinemas their cultural aesthetic particularities. Same as EALC 266.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

CINE 273  American Cinema Since 1950  credit: 3 hours.
Same as ENGL 273. See ENGL 273.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CINE 275</td>
<td>American Indians and Film</td>
<td>3</td>
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<td></td>
<td>Same as AIS 275 and ENGL 275. See AIS 275.</td>
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<tr>
<td>CINE 300</td>
<td>Topics in Film and History</td>
<td>3</td>
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<td></td>
<td>Same as HIST 300.</td>
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<tr>
<td>CINE 361</td>
<td>Film Theory and Criticism</td>
<td>3</td>
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<td></td>
<td>Study of major aesthetic and critical theories about film; study of theory and practice of film criticism. Prerequisite: One cinema studies course at the 200- or 300-level and one college course in literature, or consent of instructor.</td>
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<tr>
<td>CINE 365</td>
<td>Asian American Media and Film</td>
<td>3</td>
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<td></td>
<td>Same as AAS 365 and MS 365. See AAS 365.</td>
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<td>CINE 373</td>
<td>Special Topics in Film Studies</td>
<td>3</td>
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<tr>
<td>CINE 381</td>
<td>Black Women and Film</td>
<td>3</td>
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<tr>
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<td>Same as AFRO 381.</td>
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<tr>
<td>CINE 385</td>
<td>The Jewish Experience in Film</td>
<td>3</td>
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<td></td>
<td>Selected topics focusing on various aspects of Judaism and Jewish culture as it has been portrayed in world cinema along with an examination of the contributions of selected Jewish artists to the cinema. Prerequisite: One college course in literature or cinema studies.</td>
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<tr>
<td>CINE 395</td>
<td>Special Cinema Studies Topics</td>
<td>3</td>
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<tr>
<td></td>
<td>Topics of critical and historical issues in cinema and related screen media; topics vary and typically include genres, historical movements, and thematic studies. May be repeated to a maximum of 6 hours if topics vary. Prerequisite: One college-level Cinema Studies course or consent of instructor.</td>
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<tr>
<td>CINE 401</td>
<td>Philosophy and Film</td>
<td>4</td>
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<tr>
<td></td>
<td>Same as PHIL 401.</td>
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<tr>
<td>CINE 419</td>
<td>Russian &amp; East European Film</td>
<td>3 OR 4</td>
</tr>
<tr>
<td></td>
<td>Same as MS 419 and SLAV 419. See SLAV 419.</td>
<td></td>
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<tr>
<td>CINE 466</td>
<td>Japanese Cinema</td>
<td>3 OR 4</td>
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<tr>
<td></td>
<td>Examines the influence of Japan's traditional aesthetics on its cinema and surveys its major film movements, genres, and directors. Same as EALC 466. 3 undergraduate hours. 4 graduate hours. Prerequisite: Two college level courses in cinema studies or East Asian Languages and Cultures.</td>
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<tr>
<td>CINE 470</td>
<td>Topics in Italian Cinema</td>
<td>3 OR 4</td>
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<tr>
<td></td>
<td>Same as ITAL 470.</td>
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<tr>
<td>CINE 488</td>
<td>French &amp; Comparative Cinema I</td>
<td>4</td>
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<tr>
<td></td>
<td>Same as CWL 488, FR 488, and HUM 488. See FR 488.</td>
<td></td>
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<tr>
<td>CINE 489</td>
<td>French &amp; Comparative Cinema II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Same as CWL 489, FR 489, and HUM 489. See FR 489.</td>
<td></td>
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<tr>
<td>CINE 490</td>
<td>The Films of Ingmar Bergman</td>
<td>3</td>
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<tr>
<td></td>
<td>Same as SCAN 490.</td>
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<tr>
<td>CINE 491</td>
<td>Senior Thesis</td>
<td>3</td>
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<tr>
<td></td>
<td>Individual research for majors in Cinema Studies leading to the completion of a thesis. 3 undergraduate hours. May be repeated to a maximum of 6 hours. Prerequisite: Senior standing, a declared Cinema Studies option in the Interdisciplinary Studies major, and consent of advisor.</td>
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</tr>
<tr>
<td>CINE 492</td>
<td>New Scandinavian Cinema</td>
<td>3</td>
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<tr>
<td></td>
<td>Same as SCAN 492.</td>
<td></td>
</tr>
<tr>
<td>CINE 493</td>
<td>German Cinema I</td>
<td>3</td>
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<tr>
<td></td>
<td>Same as GER 493.</td>
<td></td>
</tr>
</tbody>
</table>
CINE 494  **German Cinema II**  credit: 3 hours.
Same as GER 494. See GER 494.

CINE 495  **Advanced Cinema Studies Topics**  credit: 3 OR 4 hours.
Intensive study of critical and historical issues in cinema and related screen media; topics vary and typically include national and ethnic cinemas, directors, genres, historical movements, and thematic studies. 3 undergraduate or 4 graduate hours. May be repeated in the same or separate semesters as topics vary to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Two college-level Cinema Studies courses or consent of instructor.

CINE 498  **Special Topics Senior**  credit: 3 hours.
Seminar and tutorial in selected Cinema Studies topics. 3 undergraduate hours. May be repeated in the same or subsequent semesters to a maximum of 6 hours. Prerequisite: Senior standing and consent of the Cinema Studies advisor.

CINE 503  **Historiography of Cinema**  credit: 4 hours.
Seminar on historical perspectives on cinema as an institution, a body of signifying practices, a product to be consumed, a phenomenon of modernity, and a cultural artifact and on cinema in relation to other screen media. Same as CWL 503 and ENGL 503.

CINE 504  **Theories of Cinema**  credit: 4 hours.
Seminar on influential theories and accompanying debates about the textual/extra-textual mechanisms and cultural/political impact of cinema and related screen media. Same as CWL 504 and ENGL 504.
Classical Civilization

Classics
Head: David Sansone
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-1008
www.classics.uiuc.edu

CLCV 100  Vocab Building-GRK & LAT Roots  credit: 2 hours.
Vocabulary building assistance for students through an analysis of Greek and Latin roots, prefixes, and suffixes found in English.

CLCV 102  Medical Terms-GRK & LAT Roots  credit: 3 hours.
Introduction to the study of the Greek and Latin roots of contemporary medical terminology and to the linguistic patterns governing their combination and usage.

CLCV 111  Mythology of Greece and Rome  credit: 2 hours.
Study of the major myths of Greece and Rome and their impact upon later art, music, and literature. Credit is not given for both CLCV 111 and CLCV 115.

CLCV 114  Introduction to Greek Culture  credit: 3 hours.
Studies the social and cultural life in Greece during the classical period.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CLCV 115  Mythology of Greece and Rome  credit: 3 hours.
Studies the major myths of Greece and Rome and their impact upon later art, music, and literature. Shares two hours of lecture with CLCV 111; additional hour of lecture-discussion for a closer analysis of topics. Credit is not given for both CLCV 115 and CLCV 111.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CLCV 116  The Roman Achievement  credit: 3 hours.
Introduces Roman civilization through the study of the social and cultural life of ancient Rome.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

CLCV 120  The Classical Tradition  credit: 3 hours.
Survey of the Greco-Roman tradition from late antiquity to the present. Examination of pagan culture in medieval Christianity and Islam, the literary tradition of the Troy tale, the rediscovery of Greek texts and the Florentine Renaissance, classical allusions in Shakespeare and Milton, the political foundation of the U.S. constitution, and the persistence of the classical tradition in contemporary American popular culture.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CLCV 131  Classical Archaeology, Greece  credit: 3 hours.
Introduction to the archaeology of ancient Greece and the Aegean world.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

CLCV 132  Class Archaeology, Rome-Italy  credit: 3 hours.
Introduction to the archaeology of Italy and Rome to the fall of the Roman Empire.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

CLCV 160  **Ancient Greek & Roman Religion**  credit: 3 hours.
Study of Greek and Roman Paganism and the rise of Christianity within that context. Readings are confined to ancient sources in English translation. Same as RLST 160.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

CLCV 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

CLCV 206  **Classical Allusions in Cinema**  credit: 3 hours.
Examination of hundreds of contemporary films containing allusions to Greco-Roman antiquity. From the Matrix to Napoleon Dynamite, today's films often mention an ancient character, story or art object. These motifs are conscious and often essential to the theme of the film. We examine this interesting phenomenon by discussing film segments in class, reading about the history of the classical tradition in popular culture, and finally, forming into groups and examining specific types of films. Same as CWL 206. Prerequisite: CLCV 111 or CLCV 115 or consent of instructor.

CLCV 217  **Greek Art**  credit: 3 hours.
Same as ARTH 215. See ARTH 215.

CLCV 218  **Roman Art**  credit: 3 hours.
Same as ARTH 216. See ARTH 216.

CLCV 220  **Origins of Western Literature**  credit: 3 hours.
Origins and development of selected major genres in Western literature, emphasizing the relationship between classical representatives and their modern successors. Same as CWL 220.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CLCV 221  **The Heroic Tradition**  credit: 3 hours.
Study of ancient epics and their relation to the social consciousness of their period; introductory and background lectures; and readings in the epic tradition of antiquity and its successors. Same as CWL 263. Prerequisite: Sophomore standing or consent of instructor.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CLCV 222  **The Tragic Spirit**  credit: 3 hours.
Readings in the tragic drama of Greece and Rome; a systematic study of the contents and development of this classical literary/dramatic genre. Same as CWL 264. Prerequisite: Sophomore standing or consent of instructor.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CLCV 223  **Myth,History,Fiction,Tradition**  credit: 3 hours.
A unique examination of several legendary figures from Greco-Roman antiquity. Employing the disciplines of mythology, historiography, and the study of popular culture, the student develops a synchronic, multi-millennial understanding of such men and women as Achilles, Medea, Alexander the Great, and Oedipus at by studying primary ancient, medieval, Renaissance, and modern sources from such diverse perspectives as those of epic, lyric, and dramatic poetry, scientific and romantic biography, political propaganda, painting, popular fiction, and documentary television, as well as feature film.
This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

CLCV 225  **Greco-Roman Demo, Econ, Cult**  credit: 3 hours.
Greco-Roman Democracies, Economic Policies, and Cultures: Examines the ancient city-states of Athens and Rome; the creation, development and demise of their democratic governments, the relationship between their democracies and militarized empires as well as their economics and fiscal policies; and how these influenced or were represented by their cultural products - including literature,
architecture, sculpture, and coinage. Examines the influence of Greco-Roman culture and political institutions on late-medieval and neo-Roman Renaissance city-states, as well as on the foundation of the United States.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

CLCV 231 Development of Ancient Cities credit: 3 hours.
Monuments and archaeological remains illustrating the development of the Greek and Roman city (polis). Same as ARTH 217. Prerequisite: Sophomore standing or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

CLCV 232 Ancient Greek Sanctuaries credit: 3 hours.
Survey of the archaeological remains of ancient Greek sanctuaries and their importance to ancient society and religion. Same as ARTH 218, and RLST 232. Prerequisite: Sophomore standing or consent of instructor.

CLCV 240 Sex & Gender in Antiquity credit: 3 hours.
Understanding of the place of women in ancient societies can be gained through the examination of the ways in which the ancients conceptualized sex and gender. The myths, religion, art and literature of Egypt, Greece, Rome and the Near East contain a wide array of representations of men and women, of their emotions, as well as of their social, legal and political status and relations. Same as CWL 262 and GWS 240.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CLCV 291 Freshman Honors Tutorial credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars and Associates. May be repeated one time. Prerequisite: Consent of departmental honors advisor.

CLCV 323 The Comic Imagination credit: 3 hours.
Study of Greek and Roman comedies in their historical context, with attention to formal elements, stylistic features, aspects of performance and central themes and ideas. Same as CWL 322. Prerequisite: Sophomore standing or consent of the instructor.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CLCV 363 Introduction to Oral Tradition credit: 3 hours.
Introduction to the study of oral traditions. By looking comparatively at work stemming from various traditions found around the world, students will attempt to become better readers of these works originally intended for appreciation through a mainly oral mode of transmission. In order to aid in this process, reference will be made to several different methodologies for interpreting oral and oral-derived works, but the focus will be on the primary texts themselves. Same as CWL 363 and ENGL 362.

CLCV 415 Classical Rhetorics credit: 3 OR 4 hours.
Same as CMN 415 and MDVL 415. See CMN 415.

CLCV 418 Etruscan and Italic Art credit: 3 OR 4 hours.
Same as ARTH 418. See ARTH 418.

CLCV 443 The Archaeology of Greece credit: 3 hours.
Monuments, material remains, and sculpture and other arts illustrating the development of Greek civilization to 323 B.C. Same as ARTH 415. Prerequisite: A course in ancient history, art, or language, or consent of instructor.

CLCV 444 The Archaeology of Italy credit: 3 hours.
Monuments, material remains, and sculpture and other arts illustrating the development of Greco-Roman and other ancient Italian civilizations to 330 A.D. Same as ARTH 416. Prerequisite: A course in ancient history, art, or language, or consent of instructor.

CLCV 445 Class Archaeology Field Work credit: 1 TO 4 hours.
Participation in archaeological excavation: methods of stratigraphic excavation and material analysis are discussed and practiced in actual working conditions. Will be offered during spring, summer or fall terms, as faculty activities allow. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLCV 463</td>
<td>Approaches to Oral Tradition</td>
<td>3</td>
<td>Exploration of theoretical approaches and methodologies of analysis used in the study of oral traditions. Discussion of concepts such as the ethnography of speaking, receptionalism, and ethnopoetics with the purpose of applying them to oral and oral-derived texts from various traditions from around the world. Same as CWL 466 and ENGL 463. Prerequisite: CLCV 363 or consent of instructor.</td>
</tr>
<tr>
<td>CLCV 482</td>
<td>Computer Foreign Lang Tchg</td>
<td>4</td>
<td>Same as EIL 482, FR 482, GER 482, HUM 482, ITAL 482, LING 486, PORT 482, SLAV 482, and SPAN 482. See HUM 482.</td>
</tr>
<tr>
<td>CLCV 490</td>
<td>Topics in Classical Literature</td>
<td>3 OR 4</td>
<td>Study of selected topics in Greek and Latin literature in translation; content is variable. Same as CWL 490. May be repeated. Prerequisite: A 200-level classical civilization course or consent of instructor.</td>
</tr>
<tr>
<td>CLCV 491</td>
<td>Topics Classic Arch &amp; Civ</td>
<td>1 TO 4</td>
<td>Study of selected topics; variable content. May be repeated. Prerequisite: Consent of instructor.</td>
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<tr>
<td>CLCV 492</td>
<td>Senior Thesis</td>
<td>2 TO 4</td>
<td>Thesis and honors; for candidates for departmental distinction in classical civilization and for other seniors. 2 to 4 undergraduate hours. No graduate credit. Prerequisite: Senior standing and consent of Classics Honors Program.</td>
</tr>
<tr>
<td>CLCV 498</td>
<td>Senior Survey</td>
<td>2 TO 4</td>
<td>For candidates for departmental distinction in the classics major. 2 to 4 undergraduate hours. No graduate credit. Prerequisite: Senior standing and consent of Classics Honors Program.</td>
</tr>
<tr>
<td>CLCV 515</td>
<td>Seminar in Ancient Art</td>
<td>4</td>
<td>Same as ARTH 515. See ARTH 515.</td>
</tr>
<tr>
<td>CLCV 520</td>
<td>Seminar in Class Archaeology</td>
<td>4</td>
<td>Problems in classical archaeology. Various topics in all fields of classical archeology such as ancient topography, agricultural practices, ancient industries and crafts, and trade patterns as documented by pottery, will be offered in separate terms. Same as ARTH 520. May be repeated to a maximum of 12 hours. Prerequisite: Graduate standing in Classics, Art History, Anthropology, Architecture, or History, or consent of instructor.</td>
</tr>
<tr>
<td>CLCV 550</td>
<td>Intro to Teaching of Classics</td>
<td>4</td>
<td>An introduction, designed for Classics Teaching Assistants, to teaching ancient Greek, Latin, and Classical Civilization courses. Prerequisite: Appointment as a Teaching Assistant in Classics or consent of instructor.</td>
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</table>
Communication

Head of Department: Dale E. Brashers
Department Office: 244 Lincoln Hall, 702 South Wright, Urbana
Phone: 333-2683
www.communication.illinois.edu/

CMN 101  **Public Speaking**  credit: 3 hours.
Preparation and presentation of short informative and persuasive speeches; emphasis on the selection and organization of material, methods of securing interest and attention, and the elements of delivery. Credit is not given for both CMN 101 and either CMN 111 or CMN 112.

CMN 102  **Intro to Comm Theory & Res**  credit: 4 hours.
Survey of the questions probed, the methods employed, and the current status of knowledge in the study of communication.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

CMN 111  **Oral & Written Comm I**  credit: 3 hours.
Principles and practice in communication; stress on fundamentals of critical thinking in writing and speaking. The Campus rhetoric requirement is fulfilled by this course in conjunction with CMN 112. Credit is not given for both CMN 111 and CMN 112, and other courses that fulfill the Composition I requirement (i.e., RHET 100; RHET 101 and RHET 102; RHET 103 and RHET 104; RHET 105; RHET 108; ESL 114 and ESL 115). Credit is also not given for both CMN 111 and CMN 112 and CMN 101. CMN 111 - CMN 112 may not be taken by students who have completed the University's Composition I requirement.
This course satisfies the General Education Criteria for a:
UIUC: Freshman Composition I

CMN 112  **Oral & Written Comm II**  credit: 3 hours.
Continuation of Oral & Written Comm I; stress on deliberation and fundamentals of communication and public argument through speaking and writing. The campus rhetoric requirement is fulfilled by this course in conjunction with CMN 111. Credit is not given for both CMN 111 - CMN 112 and other courses that fulfill the Composition I requirement (i.e., RHET 100; RHET 101 and RHET 102; RHET 103 and RHET 104; RHET 105; RHET 108; ESL 114 and ESL 115). Credit is also not given for both CMN 111 - CMN 112 and CMN 101. CMN 111 - CMN 112 may not be taken by students who have completed the University's Composition I requirement. Prerequisite: CMN 111.
This course satisfies the General Education Criteria for a:
UIUC: Freshman Composition I

CMN 113  **Small Group Communication**  credit: 3 hours.
Study of leadership, group process, and interpersonal relations in the small group, conference, and the public forum; emphasis on practice in leading and participation in various types of public discussion and conference, with materials drawn from current public questions.

CMN 115  **Interviewing**  credit: 3 hours.
Describes theory and research on interviews in interpersonal and organizational settings; emphasis on practice in conducting and participating in different types of interviews, with materials drawn from various interview settings (e.g., employment, evaluation, medical, and so on).

CMN 120  **Adv Public Speaking**  credit: 3 hours.
Advanced principles of speech preparation and presentation; special problems and types of speeches; and considerable practice in composition and delivery of speech. Prerequisite: CMN 101 or equivalent.

CMN 191  **Freshman Honors Tutorial**  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to Chancellors Scholars, Cohn Scholars and James Scholars. May be repeated one time. Prerequisite: Consent of departmental honors advisor.

CMN 199  **Undergraduate Open Seminar**  credit: 0 TO 5 hours.
May be repeated to a maximum of 6 hours.

CMN 204  **Internship in Teaching Comm**  credit: 3 hours.
Supervised experience in assisting in the teaching of an undergraduate course in communication; practice in preparing and presenting brief lectures, conducting activities within class, and assisting students outside of class. Prerequisite: Junior standing, 3.0 grade-point average, 3.5 grade-point average in Communication, recommendation from an instructor, and approval of application.

CMN 207 Analysis of Screen Genre  credit: 3 hours.
General introduction to the theory and analysis of film and television genre; detailed study of one or two representative types of genres (genres vary from term to term). Considers aesthetic, ideological, cultural, and historical views of genre. Students are required to view a limited number of films and television programs outside of class.

CMN 208 Rhetoric of Film  credit: 3 hours.
Examines the nature and communicative functions of the ideological content of narrative cinema, with emphasis on the Hollywood film; considers ideological dimensions of film as communication, explicit and implicit ideological dimensions of the Hollywood social problem film, relationship of genre and ideology, and the ideology of the institution of cinema.

CMN 211 Business Communication  credit: 3 hours.
Focus on relevant theory and research on communication strategies and skills vital to diverse business contexts. Topics will include communication in civic engagement and in multinational corporations, cross-cultural communication, ethics, telecommuting, virtual work teams, and effective writing. Study, preparation, and presentation of the chief types of business speeches and other forms of communication; special attention to conferences, sales talks, interviews, and job applications are included. Prerequisite: CMN 101.

CMN 212 Intro to Organizational Comm  credit: 3 hours.
Considers major theories, research questions, and approaches to organizational communication.

CMN 213 Persuasion and the Arts  credit: 3 hours.
Introduction to the study of narrative films, theatre, fiction, and poetry as vehicles of indirect and overt persuasion.

CMN 220 Communicating Public Policy  credit: 3 hours.
Study of the nature of policy-oriented communication; analysis and formulation of positions on issues of professional, personal, or public interest; design and presentation of public policy messages addressed to varying tasks and audiences, with special emphasis on advanced writing skills. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

CMN 230 Intro to Interpersonal Comm  credit: 3 hours.
Study of communication theory and its application to interpersonal relations; extensive discussion of problems of conflict and misunderstanding in personal affairs to facilitate the development of knowledge, insights, and skills in the processes of face-to-face interaction.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

CMN 231 Communication and Conflict  credit: 3 hours.
Examines how people experience and manage conflict within both private and public settings. Units focus on conflict in interpersonal, small group, and organizational contexts.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

CMN 232 Intro to Intercultural Comm  credit: 3 hours.
Introduction to the study of intercultural communication in a variety of contexts, including domestic and international; examines theory and research to explain what happens when people from different cultural and linguistic backgrounds interact. Requires students to think critically about the ways in which "taken-for-granted" way of thinking, acting, and interacting are culturally specific.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

CMN 251 Public Information Management  credit: 3 hours.
Study of communication problems and practices involved in the management of public information. Considers functions, contexts, and evaluation of public information efforts.

CMN 260 Intro to Health Communication  credit: 3 hours.
Introduces theory and research on communication in health and illness contexts. Explores how messages from media, interpersonal, and organizational sources affect health beliefs and behaviors.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences
UIUC: Western Compartv Cult

CMN 275 Media, Money and Power credit: 4 hours.
Describes the political economy of the media in the U.S. Acquaints students with a core understanding of how the media system operates, and with what effects, in a capitalist society. Examines the role of advertising, public relations, corporate concentration, and government regulation upon news reporting, entertainment, culture, and participatory democracy. Also examines issues such as the Internet, globalization, and public broadcasting.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

CMN 277 Media of Public Discourse credit: 4 hours.
Survey of the history, structure, forms, and social effects of the American mass media.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

CMN 280 Comm Technology & Society credit: 3 hours.
Introduction to theory and research on both old and new communication technologies; focus will be on (a) how these technological systems develop and are used, and (b) what implications of these systems have for culture and society.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

CMN 310 The Rhetorical Tradition credit: 3 hours.
Survey of major trends in the development of rhetorical theory from Homer to the present.

CMN 310 Comm Controversy Public Policy credit: 3 hours.
Examines how public policy shapes American life, by providing an advanced exploration of the controversies, discourses and effects of public policy. Provides in-depth analysis of the definitions and histories of public policy and the tensions between public and private spheres that shape it. Explores the American landscape, energy courses and environment, food systems, and political process, with a focus on industry and government turn-style lobbying rules and reform. Develops a fundamental understanding of public versus private spheres; analyzes and critiques how public policy shapes American historical and cultural landscapes; increases skillfulness in oral and written analysis of controversies, institutions, political and economic power brokers, and social norms. Prerequisite: CMN 220 or consent of instructor.

CMN 311 Persuasive Speaking credit: 3 hours.
Study of the processes of motivation as applied to speeches intended to influence group opinion and action; practice in the preparation and delivery of short persuasive speeches. Prerequisite: CMN 101.

CMN 323 Argumentation credit: 3 hours.
Study of the theory of argument, e.g., evidence, reasoning, and construction of briefs; practice in formal and informal forms of debate and public discourse on current public questions. Prerequisite: CMN 101.

CMN 325 Politics and the Media credit: 3 hours.
Same as MS 322 and PS 312. See PS 312.

CMN 326 Mass Media and the Audience credit: 3 hours.
Presents information on how to conceptualize audiences, mass media use, and reception of media messages. Also examines the character of the audience experience, uses and gratifications of mass media, social cognition, and studies of audiences as interpretive communities.

CMN 336 Family Communication credit: 3 hours.
Examines the nature and functions of communication in various family configurations (e.g. nuclear families, single-parent families, stepfamilies); discusses both problematic interaction patterns and links between family interaction and strong families.

CMN 354 Freedom of Speech credit: 3 hours.
Examination of the nature and variety of responses to value questions concerning communication; includes a survey of the evolution of and current controversies in freedom of speech.

CMN 390 Individual Study credit: 1 TO 3 hours.
Individual investigation of special problems. May be repeated to a maximum of 6 hours. Prerequisite: Twelve hours of communication; a grade-point average of 3.25; and consent of head of department.

CMN 396  **Special Topics in Comm**  credit: 3 hours.
Special topics in communication not treated in regularly scheduled courses. See Schedule for current topics. May be repeated to a maximum of 6 hours if topics vary.

CMN 410  **Workplace Comm Technology**  credit: 3 OR 4 hours.
Focuses on how communication technologies shape the creation, content, and flow of information within and between organizations. Special attention will be given to the characteristics of the technology; social and organizational practices; economic considerations; and policy issues. 3 undergraduate hours. 4 graduate hours.

CMN 411  **Organizational Comm Assessment**  credit: 3 OR 4 hours.
Organizational communication theory applied to the assessment of communication practices in organizations; systematic procedures for diagnosing communication problems and facilitating effective communication in organizations. Extensive use of case studies. Students conduct a communication audit of an organization. 3 undergraduate hours. 4 graduate hours. Prerequisite: CMN 212.

CMN 412  **Adv Organizational Comm**  credit: 3 OR 4 hours.
Advanced study of theory and research in organizational communication; considers such topics as communication networks, superior-subordinate communications, task-related and social information processing, and communicating with the external environment. 3 undergraduate hours. 4 graduate hours. Prerequisite: CMN 212.

CMN 413  **Adv Small Group Communication**  credit: 3 OR 4 hours.
Advanced study of theory, research, techniques, and training methods in interviewing and group discussion; emphasis on empirical research findings concerning communication processes in face-to-face groups. 3 undergraduate hours. 4 graduate hours.

CMN 414  **Communication and Leadership**  credit: 3 OR 4 hours.
Explores communication behaviors and processes in theories and research on leadership in small group, organizational, institutional, and cultural settings; a practicum on leadership communication using established and validated measures. Goals include defining leader communication; distinguishing between popular appeals and social-scientific evidence about leadership; familiarizing students with ways to evaluate leadership; and increasing self-awareness about leadership. Topics include leadership and gender, diversity, ethics, teams, and culture. 3 undergraduate hours. 4 graduate hours.

CMN 415  **Classical Rhetorics**  credit: 3 OR 4 hours.
Survey of the contributions to the theory and practice of rhetoric from Homer to the Renaissance. Same as CLCV 415 and MDVL 415. 3 undergraduate hours. 4 graduate hours.

CMN 416  **Early Modern Rhetorics**  credit: 3 OR 4 hours.
Significant developments in European rhetorical theory from 1500 to the 20th Century. 3 undergraduate hours. 4 graduate hours.

CMN 417  **Contemporary Rhetorics**  credit: 3 OR 4 hours.
Major contributors to rhetorical theory from I.A. Richards to the present. 3 undergraduate hours. 4 graduate hours.

CMN 421  **Persuasion Theory & Research**  credit: 3 OR 4 hours.
Survey of major theories of persuasion, research on factors influencing persuasive effectiveness, and application to problems of persuasive discourse. 3 undergraduate hours. 4 graduate hours.

CMN 423  **Rhetorical Criticism**  credit: 3 OR 4 hours.
Methods of interpreting and judging persuasive discourse with emphasis on political speaking and writing; extensive practice in criticism of rhetorical texts. 3 undergraduate hours. 4 graduate hours.

CMN 424  **Campaigning to Win**  credit: 3 OR 4 hours.
Using a case study approach to illustrate how campaigns attempt to persuade and mobilize voters, students learn how to plan and manage effective political campaigns. Same as PS 411. 3 undergraduate hours. 4 graduate hours.

CMN 427  **Children and the Media**  credit: 3 OR 4 hours.
Examines the role of the mass media in the lives of children. Focuses on how developmental differences influence how children process and respond to the media. Topics include media violence, media advertising, stereotypes in the media, and educational content. 3 undergraduate hours. 4 graduate hours.

CMN 428  **Media and the Human Body**  credit: 3 OR 4 hours.
Explores the way the human body is portrayed within, and affected by, the mass media. The term "body" is broadly construed to apply to a wide range of corporeal matters that have been linked to identity, including ability and disability, race, age, sexuality, social class,
athletic prowess, and health. We will take a social psychological approach to the study of media and the body. Knowledge of statistics based research methods is not required, but is helpful. 3 undergraduate hours. 4 graduate hours.

CMN 429  Race and the Mass Media  credit: 3 OR 4 hours.
Presents an overview of racial stereotypes in the mass media and the effects of stereotypical imagery on viewers. Discussion of the structural and social origins of stereotypic media from multiple perspectives focusing on published scholarship that systematically assesses the content and effects of racial representations from a social scientific perspective. Intersections between race, ethnicity, class, and gender also will be explored. 3 undergraduate hours. 4 graduate hours.

CMN 432  Gender and Language  credit: 3 OR 4 hours.
Study of actual and perceived differences and similarities in the use of language by women and by men; emphasizes the social contexts of speech. Same as GWS 432, and LING 432. 3 undergraduate hours. 4 graduate hours.

CMN 435  Adv Interpersonal Comm  credit: 3 OR 4 hours.
Study of the major processes involved in an individual’s adjustment to the communication situations of everyday life; emphasis on the development of interpersonal competency and orientations, social perception, interpersonal sentiment and hostility, trust, and the social context as factors influencing the understanding and evaluation of interpersonal messages. 3 undergraduate hours. 4 graduate hours. Prerequisite: CMN 230 or consent of instructor.

CMN 437  Comm in Personal Relationships  credit: 3 OR 4 hours.
Examines theories of communication within personal relationships, including family, friendship, and romantic associations. Specific topics include relationship development, conflict, power, self-disclosure, and relational uncertainty. 3 undergraduate hours. 4 graduate hours.

CMN 450  Adv Topics in Public Discourse  credit: 3 OR 4 hours.
Study of selected periods and genres of public discourse in historical context, including British, American, French, Russian, German, Chinese, and Japanese. 3 undergraduate hours. 4 graduate hours. May be repeated as topics vary to a maximum of 12 undergraduate hours or 16 graduate hours. Prerequisite: One course in rhetorical criticism or consent of instructor.

CMN 462  Interpersonal Health Comm  credit: 3 OR 4 hours.
Examines the role of communication in the management of mental and physical health. Focuses on topics such as communication and illness identity, health and interpersonal relationships, health care provider-patient interactions, impacts of technology on health communication, and health education and prevention efforts. 3 undergraduate hours. 4 graduate hours.

CMN 463  Organizational Health Comm  credit: 3 OR 4 hours.
Focuses on organizational issues shaping communication between providers, patients, and consumers of health care and information, including background on financing personal medical services; organizations, professions, and their interrelationships involved in providing medical services; theorizing communication and organization in personal medical services; and communication between organizations and the public on health issues. Topics include managed care, professional communication, the hospital as a unique communication site, ethics in health communication, direct-to-consumer drug advertising, and health crisis communication. 3 undergraduate hours. 4 graduate hours.

CMN 474  Intro to Research Methods  credit: 3 OR 4 hours.
Introduction to descriptive and experimental methods in communication; intended to produce understanding and critical evaluation of research designs. 3 undergraduate hours. 4 graduate hours.

CMN 491  Honors Individual Study  credit: 2 hours.
Individual investigation of special problems. 2 undergraduate hours. No graduate credit. May be repeated to a maximum of 4 undergraduate hours. Prerequisite: Twelve hours of communication; a grade-point average of 3.50; and consent of head of department.

CMN 493  Honors Senior Thesis  credit: 2 hours.
Individual study leading to a thesis for honors in the Department of Communication. 2 undergraduate hours. No graduate credit. May be repeated to a maximum of 4 undergraduate hours. Prerequisite: Senior standing; a grade-point average of 3.50; and consent of head of department.

CMN 496  Adv Topics in Communication  credit: 3 OR 4 hours.
Advanced topics in communication not treated in regularly scheduled courses; see Class Schedule for current topic. 3 undergraduate hours. 4 graduate hours. May be repeated as topics vary to a maximum of 6 undergraduate hours or 8 graduate hours.

CMN 529  Seminar Communication Theory  credit: 4 hours.
Special topics in communication theory and research. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.

CMN 536  Seminar Group Discussion  credit: 4 hours.
Intensive examination of selected problems of communication in small, task-oriented groups; evaluation of special instrumental forms, such as the unstructured group, the work group, the panel, and the lecture-forum; critical analysis of recent research in group communication as a means of making decisions and of changing attitudes and behavior.

**CMN 538  Seminar Rhetorical Theory**  credit: 4 hours.
Study of special topics in the history of rhetorical theory. May be repeated to a maximum of 16 hours.

**CMN 595  Special Problems**  credit: 2 TO 8 hours.
Individual investigation of special projects not included in theses. Open to master's candidates for a maximum of 4 graduate hours and to doctoral candidates for 4 or 8 graduate hours. Prerequisite: Consent from head of department.

**CMN 599  Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
CPSC 111  **Farming Systems**  credit: 2 hours.
General introduction to the equipment and practices commonly used on Midwest farms. Classes will consist of short lectures followed by demonstrations. All classes and demonstrations will be conducted at the University of Illinois Crop Sciences Research and Education Center. Includes field trips to local production and agribusiness facilities.

CPSC 112  **Introduction to Crop Sciences**  credit: 4 hours.
Introductory course covering principles of growth, production, protection, and improvement of crop plants. Topics covered include form, function, and uses of crops; mechanisms and factors responsible for plant growth and development; crop pests and pest protection; specific crops; and advances in crop production. Concepts are discussed in lecture and reinforced in corresponding hands-on laboratory sections.

CPSC 116  **The Global Food Production Web**  credit: 3 hours.
Introduces students to the global web involved in the production of food we consume on a daily basis. Selected ecosystems of plants, people, and cultures in Asia, Africa, and Latin America will be studied based on involvement with various crops. Presents the origin and biology of plants; their evolution with humankind in various cultures; the spread and economic importance of crops around the world; and considers current hunger and environmental issues resulting from the global food web. Interactive communications with selected scientists, producers, and traders around the world through the World Wide Web and email system of the INTERNET permit students to get personal exposure to information and activities.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

CPSC 180  **Medicinal Plants and Herbolgy**  credit: 3 hours.
Same as HORT 180. See HORT 180.

CPSC 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Experimental course on a special topic in crop sciences. Topic may not be repeated except in accordance with the Code. May be repeated to a maximum of 12 hours.

CPSC 226  **Introduction to Weed Science**  credit: 3 hours.
Fundamentals of weed biology, ecology, and management. Emphasis is placed on basic principles and specific management strategies that are relevant to both crop and non-crop ecosystems. Includes a laboratory/discussion. Same as HORT 226. Prerequisite: CPSC 112 or HORT 100 or IB 103.

CPSC 241  **Intro to Applied Statistics**  credit: 3 hours.
Introduces fundamental statistics used to analyze and interpret data in the biological and physical sciences of agriculture, environmental sciences, and related areas. Includes descriptive and inferential statistics, measures of central tendency and dispersion, probability, correlation and regression, and tests of hypotheses. Enhances students' ability to critically assess statistical information encountered in professional and every day activities. Credit is not given for both CPSC 141 and STAT 100 or ACE 261.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

CPSC 261  **Biotechnology in Agriculture**  credit: 3 hours.
Basic introduction to the techniques and application of biotechnology to a wide range of agricultural areas, and specific examples are given. May serve as either a terminal course explaining the techniques or as an introductory base for future studies. Same as HORT 261. Prerequisite: Any 100-level course in a biosciences discipline.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

CPSC 265  **Genetic Engineering Lab**  credit: 3 hours.
Laboratory/discussion course that provides a hands-on introduction to the techniques and principles of genetic engineering, recombinant DNA and the impact of molecular genetics on society. Students will isolate DNA from plants and clone specific genes into
bacterial plasmids, perform polymerase chain reactions, DNA restriction analysis and DNA blotting, and discuss the relevance of these techniques to both medicine and agriculture. Prerequisite: A general biology course.

**CPSC 270  Applied Entomology  credit: 3 hours.**

Lectures, laboratory, and field trips cover the biology of insects and the recognition and management of insect pests of agricultural, forest, and urban ecosystems. Covers insect structure and physiology, classification, life histories, behavior, and pest management. Same as IB 220 and NRES 270.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

**CPSC 293  Off-Campus Crop Sci Internship  credit: 1 TO 5 hours.**

Supervised, off-campus experience in a field directly pertaining to a subject matter in crop sciences. May be repeated to a maximum of 10 hours. For registration in this course, students should contact the Department Teaching Coordinator. Prerequisite: Sophomore standing, cumulative GPA of 2.0 or above at the time the internship is arranged, and consent of instructor.

**CPSC 294  On-Campus Crop Sci Internship  credit: 1 TO 5 hours.**

Supervised, on-campus learning experience with faculty engaged in research. May be repeated to a maximum of 10 hours. For registration in this course, students should contact the Department Teaching Coordinator. Prerequisite: Sophomore standing, 2.0 GPA, consent of the advisor, and consent of the Department Teaching Coordinator.

**CPSC 295  Undergrad Research or Thesis  credit: 1 TO 4 hours.**

Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward degree. Prerequisite: Junior standing, cumulative GPA of 2.5 or above at the time the activity is arranged, and consent of instructor.

**CPSC 336  Tomorrow's Environment  credit: 3 hours.**

Introduction to interdisciplinary methods of analysis of environmental problems in a finite world; examination of the concept of the limits to growth; development of a working understanding of natural systems and environmental economics; and examination of various management strategies (technical, economic, and social) that can be used to improve environmental quality. Same as CHLH 336, and ENVS 336. Prerequisite: One course in the life sciences and one course in the social sciences, or consent of instructor.

**CPSC 352  Plant and Animal Genetics  credit: 4 hours.**

The principles of heredity in relation to plant and animal improvement. Same as ANSC 340 and NRES 352. Prerequisite: IB 103 or IB 104.

**CPSC 396  Undergrad Honors Res or Thesis  credit: 1 TO 4 hours.**

Individual research, special problems, thesis, development and/or design work under the direction of the Honors advisor. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward degree. Prerequisite: Junior standing, admission to the ACES Honors Program, and consent of instructor.

**CPSC 407  Diseases of Field Crops  credit: 3 hours.**

Same as PLPA 407. See PLPA 407.

**CPSC 414  Forage Crops and Pasture Eco  credit: 3 hours.**

Forages, their plant characteristics, ecology, and production; grasslands of farm and range as related to animal production and soil conservation. Offered in alternate years. Prerequisite: CPSC 112.

**CPSC 416  Perennial Grass Ecosystems  credit: 4 hours.**

Same as HORT 436. See HORT 436.

**CPSC 418  Crop Growth and Management  credit: 3 hours.**

Crop production and management as influenced by environment, plant species, and cropping system; relates plant growth processes to management practices. Prerequisite: NRES 201 and CPSC 112 or equivalent, or consent of instructor.

**CPSC 426  Weed Mgt in Agronomic Crops  credit: 3 hours.**

Principles of weed ecology and biology, and their application to weed management. Herbicides and their use in corn, soybeans and other agronomic crops. Specialized topics include weed management in reduced tillage, herbicide tolerant crops and management of problem weeds. Prerequisite: CPSC 226 or consent of instructor.

**CPSC 428  Weed Science Practicum  credit: 2 hours.**

Intensive course on field diagnostic skills in weed science. Topics include weed and weed seed identification, sprayer calibration, herbicide application, herbicide injury symptomatology, and field diagnostics. Students who complete the course will be encouraged to
enter the North Central Weed Science Society weeds contest, which occurs during the summer. Prerequisite: CPSC 226 or CPSC 426 or consent of instructor.

**CPSC 431  Plants and Global Change  credit: 3 hours.**
The science of global atmospheric and climate change in the 21st Century. Understanding of how plants, including crops, will respond and may be adapted to these changes. Using plants to ameliorate predicted climate change. Same as IB 440 and NRES 431. Prerequisite: CPSC 112 or IB 103.

**CPSC 432  Genetic Toxicology  credit: 3 hours.**
Introduces the field of genetic toxicology; includes the study of physical and chemical induced mutagenesis, survey of genetic indicator organisms and genetic assays, distribution of environmental mutagens and their biochemistry, analysis of case histories of environmental mutagens and risk assessment. Same as ENVS 432. Offered in alternate years. Prerequisite: CPSC 352; CHEM 104; MCB 350, or MCB 452 and MCB 453, or consent of instructor.

**CPSC 433  Basic Toxicology  credit: 3 hours.**
Same as ENVS 480, FSHN 480, and VB 449. See FSHN 480.

**CPSC 435  Environmental Toxicology  credit: 3 hours.**
Same as CHLH 461, ENVS 431, and IB 485. See IB 485.

**CPSC 436  Conservation Biology  credit: 4 hours.**
Same as ENVS 420 and IB 451. See IB 451.

**CPSC 437  Principles of Agroecology  credit: 3 hours.**
Examines the dynamics and function of agricultural ecosystems and reviews fundamental concepts of ecology. Agricultural systems will be compared on the basis of energy flow, nutrient cycling, diversity, stability and required inputs. Offered in alternate years. Prerequisite: IB 100 or IB 103 or equivalent.

**CPSC 438  Soil Nutrient Cycling  credit: 3 hours.**
Same as NRES 438. See NRES 438.

**CPSC 439  Env and Sustainable Dev  credit: 3 hours.**
Same as NRES 439. See NRES 439.

**CPSC 440  Applied Statistical Methods I  credit: 4 hours.**
Statistical methods involving relationships between populations and samples; collection, organization, and analysis of data; and techniques in testing hypotheses with an introduction to regression, correlation, and analysis of variance limited to the completely randomized design and the randomized complete-block design. Same as ABE 440, ANSC 440, FSHN 440, and NRES 440. Prerequisite: MATH 012 or equivalent.

**CPSC 448  Biological Modeling  credit: 3 OR 4 hours.**
Same as ANSC 449, GEOG 468, and IB 491. See GEOG 468.

**CPSC 449  Spatial Ecosystem Modeling  credit: 3 OR 4 hours.**
Same as GEOG 469, IB 492, and NRES 469. See GEOG 469.

**CPSC 452  Genetics of Higher Organisms  credit: 3 hours.**
Selected contemporary topics in genetics are covered with examples primarily from plants, humans, and animals. Topics include nature of genes and genomes, mutations and their analysis, allelic diversity, use of recombinant DNA to enhance genetic analysis, structural and functional genomics, molecular marker mapping of quantitative trait loci, marker assisted selection, proteomics, bioinformatics, and transgenics. Prerequisite: CPSC 352, or MCB 106, or consent of instructor.

**CPSC 453  Principles of Plant Breeding  credit: 4 hours.**
Genetic and cytological variation in crop plants; the production and control of such variation in developing varieties and hybrids; and the maintenance of high quality seed stocks. Same as HORT 453. Prerequisite: IB 103; CPSC 352 or equivalent.

**CPSC 454  Plant Breeding Methods  credit: 2 hours.**
Discussion of the application of current scientific tools and methods available to plant breeders for improving plants; emphasis on actual use of plant breeding methods and production of high quality seed. Offered summer only in alternate years. Prerequisite: CPSC 453.

**CPSC 462  Plant Molecular Biology  credit: 1 hours.**
Same as IB 472. See IB 472.
CPSC 465  Ethics in Biotechnology  credit: 3 hours.
Same as ANSC 465 and HORT 465. See HORT 465.

CPSC 466  Concepts and Tools of Genomics  credit: 3 hours.
An overview of genomics in the context of molecular biology including: basic principles in molecular biology, accessing biological databases; transcriptional, translational, and post-translational gene regulation; regulatory roles of non-protein coding RNA, signal transduction, genome projects and gene annotation, DNA microarray analysis, protein interaction maps, and integrative functional genomics. Same as IB 477. Prerequisite: CPSC 352 or a similar course, or consent of instructor.

CPSC 467  Plant Genomics  credit: 1 hours.
Same as IB 473. See IB 473.

CPSC 468  Plant Proteomics  credit: 1 hours.
Same as IB 474. See IB 474.

CPSC 469  Plant Metabolomics  credit: 1 hours.
Same as IB 475. See IB 475.

CPSC 473  Mgmt of Field Crop Insects  credit: 3 hours.
Ecological principles of insect populations in agroecosystems including: sampling insect populations, threshold development, bioeconomics and decision-making, population regulation, designing management strategies for field crop insect pests, and deployment of transgenic crops for management of insect pests. Case studies describing various pest management programs in field-crop settings will be provided. Prerequisite: CPSC 270 or an equivalent course, or consent of instructor.

CPSC 475  Insect Pathology  credit: 4 hours.
Same as NRES 443 and IB 483. See IB 483.

CPSC 477  Biological Control  credit: 3 hours.
Same as IB 484. See IB 484.

CPSC 479  Insect Pest Management  credit: 4 hours.
Same as IB 482. See IB 482.

CPSC 482  Plant Tissue Culture  credit: 4 hours.
Same as HORT 482. See HORT 482.

CPSC 483  Outreach Education Skills  credit: 3 hours.
Provides graduate and undergraduate students interested in outreach and extension education programs with opportunities to develop their skills and effectiveness in development and presentation of outreach and extension programs. Same as ANSC 483. Prerequisite: Senior or graduate student status.

CPSC 484  Plant Physiology  credit: 3 hours.
Same as IB 420. See IB 420.

CPSC 488  Soil Fertility and Fertilizers  credit: 3 hours.
Same as NRES 488. See NRES 488.

CPSC 489  Photosynthesis  credit: 3 hours.
Same as BIOP 432 and IB 421. See BIOP 432.

CPSC 498  Undergrad Crop Sci Seminar  credit: 1 hours.
Course includes reports and oral presentations on special topics in a field of study directly pertaining to subject matter in crop sciences. Prerequisite: Senior standing.

CPSC 499  Seminar  credit: 0 TO 4 hours.
Group discussion or an experimental course on a special topic in crop sciences. Approved for both letter and S/U grading. May be repeated to a maximum of 12 hours.

CPSC 518  Crop Growth and Development  credit: 4 hours.
Study of the physiological processes involved in growth and development of crop plants and the interaction of these processes with the environment that influences productivity. Prerequisite: CPSC 418 or CPSC 484.

CPSC 526  Herbicide Action in Plants  credit: 4 hours.
Study of various chemicals used to inhibit plant growth, including their uptake, translocation, mode of action, metabolism and resistance mechanisms in plants; and the relationship of chemical structure to the environmental fate of herbicides. Offered in alternate years. 
Prerequisite: CPSC 426 and CPSC 484.

**CPSC 538 Environmental Plant Physiology**  credit: 4 hours.
Same as IB 542. See IB 542.

**CPSC 540 Applied Statistical Methods II**  credit: 5 hours.
Statistical methods as tools for research. Principles of designing experiments and methods of analysis for various kinds of designs, experimental (completely randomized, randomized complete block, split plots, Latin square) and treatment (complete factorial); covariate analysis; use of SAS for all analyses. Prerequisite: CPSC 440 or equivalent.

**CPSC 541 Regression Analysis**  credit: 5 hours.
The application of regression methods to problems in agriculture and natural resources. Topics include simple linear, multiple linear, and nonlinear regression analysis and correlation analysis. Emphasis is placed on predictor variable selection, diagnostics and remedial measures and validation. Both quantitative and qualitative predictor variables are examined. The SAS system is used for all analyses. Same as ANSC 541. Prerequisite: CPSC 440 or equivalent.

**CPSC 545 Statistical Genomics**  credit: 3 OR 4 hours.
Same as ANSC 545 and IB 507. See ANSC 545.

**CPSC 558 Quantitative Plant Breeding**  credit: 4 hours.
Studies the theoretical bases for plant breeding procedures with special emphasis on the relationship between type and source of genetic variability, mode of reproduction, and effectiveness of different selection procedures. Offered in alternate years. Prerequisite: CPSC 453 and CPSC 540, or equivalent.

**CPSC 563 Chromosomes**  credit: 3 hours.
Includes cytogenetic analysis of eukaryotic organisms, the role of chromosomes in genome organization and evolution, and introduction to molecular cytogenetic laboratory techniques such as mitotic analysis, chromosome banding, flow cytogenetics, somatic cell genetics, chromosomal length polymorphisms, fluorescent microscopy and in situ hybridization. Prerequisite: CPSC 352 and MCB 450, or consent of instructor.

**CPSC 564 Molecular Marker Data Analyses**  credit: 2 hours.
Statistical analyses and interpretation of molecular marker data including development of genetic maps, cluster analyses, quantitative trait loci analyses, and plant breeding applications of molecular marker data. Summer session I in alternate years. Prerequisite: CPSC 440 or equivalent, and CPSC 453 or equivalent. An advanced statistics course (e.g. CPSC 540 or ANSC 445 or equivalent) and familiarity with SAS recommended.

**CPSC 565 Perl & UNIX for Bioinformatics**  credit: 2 hours.
This intensive course is an introduction to high-throughput bioinformatics and genome data analysis. An introduction to programming with Perl and Bioperl will be given, and students will learn to write scripts relevant to their own research goals. We will also cover the use of UNIX and Perl for automating and customizing bioinformatics tools. Prerequisite: Graduate status or consent of instructor. In addition, familiarity with DNA and protein sequence data, and basic Windows computing skills are required.

**CPSC 566 Plant Gene Regulation**  credit: 4 hours.
Current topics and literature on the function and regulation of higher plant genes. Topics of emphasis: transposable elements, their effect on gene expression and variation, and uses in tagging and isolating genes; the developmental, tissue specific, or environmental regulations of plant genes; the structure, synthesis, subcellular targeting, and regulation of major cereal and legume seed proteins; the use of genetic engineering to explore the regulation of plant genes or to alter traits of agricultural importance. Same as HORT 566. Prerequisite: CPSC 352, MCB 350, or consent of instructor.

**CPSC 567 Bioinformatics & Systems Biol**  credit: 4 hours.
Bioinformatics and Systems Biology are emerging disciplines that address the need to manage and interpret the massive quantities of data generated by genomic research. In systems biology, advances in genomics, bioinformatics, and structural biology are used to generate global and unified views that integrate fragmentary knowledge of biological systems, their components and their interrelationships. This course is intended for students interested in the crossroads of biology and computational science and includes both lectures and hands-on experience. Same as IB 505. Students may not receive credit for this course and CPSC 499. Prerequisite: Graduate level status or consent of instructor.

**CPSC 568 Recombinant DNA Technology Lab**  credit: 2 hours.
Intensive instruction in the core methodologies of recombinant DNA technology. Students will generate and analyze recombinant DNA clones, using methods such as PCR; DNA isolation, restriction and ligation; electrophoresis; hybridization; DNA sequencing; computer-based sequence analysis. Summer session I. Prerequisite: CPSC 352 or MCB 350, or equivalent, and consent of instructor.
CPSC 569  **Applied Bioinformatics**  credit: 4 hours.
Same as ANSC 542 and IB 506. See ANSC 542.

CPSC 574  **Insect Resistance Management**  credit: 2 hours.
Same as IB 574 and NRES 574. See NRES 574.

CPSC 588  **Plant Biochemistry**  credit: 4 hours.
Enzymes and pathways involved in plant intermediary metabolism. Basic cell physiology, bioenergetics, and hormonal regulation of metabolism. Same as HORT 588 and IB 524. Prerequisite: CPSC 484 and MCB 350.

CPSC 590  **Professionalism and Ethics**  credit: 2 hours.
Topics related to professional activities of agricultural and natural resource scientists, including scientific writing and publishing, grantsmanship and money management, oral presentation skills, finding and keeping a job, and mentoring and teaching are discussed. Ethical dimensions of these areas are explored through case studies. Same as NRES 590.

CPSC 593  **Adv Studies in Crop Sciences**  credit: 1 TO 8 hours.
Directed studies of selected problems or topics relevant to Crop Sciences. Study may be in one of the following fields: 1) Plant Breeding and Genetics; 2) Plant Molecular Biology; 3) Plant Physiology; 4) Crop Production and Ecology; 5) Biometrics; 6) Plant Pathology; 7) Entomology; and 8) Weed Science. Prerequisite: Consent of instructor.

CPSC 598  **Seminar**  credit: 1 hours.
Current research in crops, genetic engineering, plant protection and other topics relevant to Crop Sciences. May be repeated to a maximum of 14 hours if topics vary. Students enrolling in discussion sections receive S/U grading. Students enrolling in lecture-discussion sections receive letter grading. Prerequisite: Graduate standing.

CPSC 599  **Thesis Research**  credit: 0 TO 16 hours.
Individual research under supervision of faculty. Required of all students working toward the Master of Sciences (thesis option) or Doctor of Philosophy in Crop Sciences. Approved for S/U grading only. May be repeated to a maximum of 16 hours if topics vary.
Computer Science

Interim Head of Department: Michael T. Heath
Department Office: 2232 Siebel Center, 201 N. Goodwin Avenue, Urbana
Phone: 333-3373
www.cs.uiuc.edu

CS 100  Freshman Orientation  credit: 1 hours.
Introduction to Computer Science as a field and career for computer science majors. Overview of the field is presented along with specific examples of problem areas and methods of solution. Recommended for all freshman Computer Science majors.

CS 101  Intro Computing: Engrg & Sci  credit: 3 hours.
Fundamental principles, concepts, and methods of computing, with emphasis on applications in the physical sciences and engineering. Basic problem solving and programming techniques; fundamental algorithms and data structures; use of computers in solving engineering and scientific problems. Intended for engineering and science majors. Credit is not given for both CS 101 and CS 105. Prerequisite: MATH 220 or MATH 221.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

CS 105  Intro Computing: Non-Tech  credit: 3 hours.
Introduction to computing as an essential tool of academic and professional activities. Functions and interrelationships of computer system components: hardware, systems and applications software, and networks. Widely used application packages such as spreadsheets and databases. Concepts and practice of programming for the solution of simple problems in different application areas. Intended for non-science and non-engineering majors. Credit is not given for both CS 105 and CS 101. Prerequisite: MATH 012.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

CS 110  Programming Laboratory  credit: 1 hours.
Practical laboratory experience in the methods used and skills required for writing and maintaining well-structured software. Extensive practice with a programming language. Different sections use different programming languages. An existing knowledge of fundamental computing principles is assumed. Three laboratory hours per week. Credit is not given for studying a specific language more than once. Credit is not given for both CS 110 section C and CS 101, both CS 110 section J and CS 125, or both CS 110 section CP and CS 225. Prerequisite: One of CS 101, CS 105, CS 125. Recommended: (for those enrolling in CS 110 section CP) prior C programming experience or credit for CS 110 section C.

CS 125  Intro to Computer Science  credit: 4 hours.
Introduces basic concepts in computing and fundamental techniques for solving computational problems. Intended as a first course for computer science majors and others with a deep interest in computing. Credit is not given for both CS 125 and ECE 190. Prerequisite: Three years of high school mathematics or MATH 012.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

CS 173  Discrete Structures  credit: 3 hours.
Examines discrete mathematical structures frequently encountered in the study of Computer Science. Topics will include sets, propositions, boolean algebra, induction, recursion, relations, functions, and graphs. Credit is not given for both CS 173 and MATH 213.

CS 196  Freshman Honors  credit: 1 hours.
Offered for honors credit in conjunction with other 100-level computer science courses taken concurrently. A special examination may be required for admission to this course. May be repeated. Prerequisite: Concurrent registration in another 100-level computer science course (see Schedule).

CS 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

CS 210  Ethical & Professional Issues  credit: 2 hours.
Ethics for the computing profession. Ethical decision-making; licensing; intellectual property, freedom of information, and privacy. Includes oral presentations. Credit is not given for both CS 210 and ECE 316. Junior standing required. Prerequisite: CS 225.
CS 225  **Data Structures**  credit: 4 hours.
Data abstractions: elementary data structures: lists, stacks, queues, trees; searching and sorting techniques. Introduction to the principles of software engineering including term programming project. Prerequisite: CS 125 or ECE 190; CS 173 or MATH 213.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

CS 231  **Computer Architecture I**  credit: 3 hours.
Introduction to computer architecture, working up from the logic gate level: combinational and sequential networks; computer arithmetic; arithmetic/logic units; memory organization; control unit design. Credit is not given for both CS 231 and ECE 290. Prerequisite: CS 125.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

CS 232  **Computer Architecture II**  credit: 3 hours.
Second-level course in computer architecture. Machine-level programming, instruction sets, data representations; subroutines; input/ output hardware and software; linking and loading; relation to high-level languages. Credit is not given for both CS 232 and ECE 390. (Counts for advanced hours in LAS.) Prerequisite: CS 231.

CS 241  **System Programming**  credit: 4 hours.
Covers the basics of system programming, including POSIX processes, process control, inter-process communication, synchronization, signals, simple memory management, file I/O and directories, shell programming, socket network programming, RPC programming in distributed systems, basic security mechanisms, and standard tools for systems programming such as debugging tools. Credit is not given for both CS 241 and ECE 391. Prerequisite: CS 225; credit or concurrent registration in CS 232.

CS 242  **Programming Studio**  credit: 3 hours.
Intensive programming lab intended to strengthen skills in programming. Prerequisite: CS 241.

CS 296  **Honors Course**  credit: 1 hours.
Group projects for honors credit in computer science. Sections of this course are offered in conjunction with other 200-level computer science courses taken concurrently. A special examination may be required for admission to this course. May be repeated. Prerequisite: Concurrent registration in another 200-level computer science course (see Schedule).

CS 357  **Numerical Methods I**  credit: 3 hours.
Introduction to numerical methods for students in science and engineering; topics include floating-point computation, systems of linear equations, approximation of functions and integrals, the single nonlinear equation, and the numerical solution of ordinary differential equations; discusses various applications in science and engineering; includes some programming as well as the use of high quality mathematical library routines. Same as MATH 357. Students with earned credit in CS 450 or MATH 450 may not receive additional credit for CS 357 or MATH 357. (Counts for advanced hours in LAS). Prerequisite: A 100-level computer science course; MATH 225 or MATH 415; MATH 243.

CS 373  **Theory of Computation**  credit: 3 hours.
Finite automata and regular languages; pushdown automata and context-free languages; Turing machines and recursively enumerable sets; computability and the halting problem; undecidable problems. Prerequisite: CS 173 or MATH 213; CS 225.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

CS 397  **Individual Study**  credit: 1 TO 3 hours.
May be repeated. Prerequisite: Consent of instructor.

CS 398  **Special Topics**  credit: 2 TO 4 hours.
Subject offerings of new and developing areas of knowledge in computer science intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

CS 400  **Data Structures: Non-CS Majors**  credit: 4 hours.
Integrates software engineering principles with data structures implemented in C++. Covers software engineering in three stages: personal software process (checkpoints, project plans, defects, and code reviews), prior to coding (process models, requirements, and design), and after coding (testing and quality assurance techniques). The concepts, principles, and use of data structures will include pointers, lists, arrays, sets, stacks, trees, hashing, graphs, priority queues, and sorting. Special emphasis will be placed on the implementations of these structures in real-world applications. While prior experience with either C, C++, or Java is assumed, C++ is taught in the first three weeks. Same as CSE 400. Credit is not given for both CS 400 and CS 225. Credit for CS 400 is not given to Computer Science and Computer Engineering majors. Prerequisite: CS 101.
CS 410  **Text Information Systems**  credit: 3 OR 4 hours.
Introduction to the theory, design, and implementation of text-based information systems. Text analysis, retrieval models (e.g., Boolean, vector space, probabilistic), text categorization, text filtering, clustering, retrieval system design and implementation, and applications to web information management. Same as LIS 410. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225 or CS 400.

CS 411  **Database Systems**  credit: 3 OR 4 hours.
Examines the logical organization of databases: the entity-relationship model; the hierarchical, network, and relational data models and their languages. Functional dependencies and normal forms. Design, implementation, and optimization of query languages; security and integrity; concurrency control, and distributed database systems. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225 or CS 400.

CS 412  **Introduction to Data Mining**  credit: 3 OR 4 hours.
Introduction to the concepts, techniques, and systems of data warehousing and data mining. Design and implementation of data warehouse and on-line analytical processing (OLAP) systems; data mining concepts, methods, systems, implementations, and applications. 3 undergraduate or graduate hours. 4 graduate hours. Prerequisite: CS 225 or CS 400.

CS 413  **Intro to Combinatorics**  credit: 3 OR 4 hours.
Same as MATH 413. See MATH 413.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

CS 414  **Multimedia Systems**  credit: 3 OR 4 hours.
Organization and structure of modern multimedia systems; audio and video encoding; quality of service concepts; scheduling algorithms for multimedia within OS and networks multimedia protocols over high-speed networks; synchronization schemes, user-interface design; multimedia teleservices. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 241 or ECE 391.

CS 417  **Computer-Assisted Instruction**  credit: 4 hours.
Same as CI 435. See CI 435.

CS 418  **Interactive Computer Graphics**  credit: 0 TO 4 hours.
Introduction to basic mathematical tools and computational techniques for modeling, rendering, and animating 3-D scenes. Same as CSE 427. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225 or CS 400; MATH 225 or MATH 415; MATH 241.

CS 419  **Production Computer Graphics**  credit: 3 OR 4 hours.
Advanced methods for representing, displaying, and rendering two-, three-, and four-dimensional scenes. General algebraic curves and surfaces, splines, Gaussian and bump-function representation, fractals, particle systems, constructive solid geometry methods, lighting models, radiosity, advanced ray-tracing methods, surface texturing animation techniques, data visualization methods. Same as CSE 428. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 418.

CS 420  **Parallel Progrmg: Sci & Engrg**  credit: 3 OR 4 hours.
Introduction to fundamental issues in design and development of parallel programs for various types of parallel computers. Various programming models according to both machine type and application area. Cost models, debugging, and performance evaluation of parallel programs with actual application examples. Same as CSE 402 and ECE 492. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 400 or CS 225.

CS 421  **Progrmg Languages & Compilers**  credit: 3 OR 4 hours.
Introduction to the structure of programming languages and their implementation. Basic language design principles; abstract data types; functional languages; type systems; object-oriented languages. Basics of lexing, parsing, syntax-directed translation, semantic analysis, and code generation. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 232 and CS 373.

CS 422  **Programming Language Design**  credit: 3 OR 4 hours.
Exploration of major language design paradigms using imperative and functional programming as unifying themes. Tools include both practical language processor construction and theoretical models. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 421.

CS 423  **Operating Systems Design**  credit: 3 OR 4 hours.
Organization and structure of modern operating systems and concurrent programming concepts. Deadlock, virtual memory, processor scheduling, and disk systems. Performance, security, and protection. Same as CSE 423. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 241 or ECE 391.

CS 424  **Real-Time Systems**  credit: 3 OR 4 hours.
Examples of real-time computing systems; real-time scheduling and resource management algorithms; analytical and efficient validation methods. Examples of real-time operating systems; temporal consistency of real-time data; formal methods for specification of and reasoning about timing constraints. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 431.

**CS 425 Distributed Systems**  credit: 3 hours.

Protocols, specification techniques, global states and their determination, reliable broadcast, transactions and commitment, security, and real-time systems. Same as CSE 424 and ECE 428. Prerequisite: CS 241 or ECE 391.

**CS 426 Compiler Construction**  credit: 3 OR 4 hours.

Compiler structure, syntax analysis, syntax-directed translation, automatically constructed recognizers, semantic analysis, code generation, intermediate language, optimization techniques. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 421.

**CS 427 Software Engineering I**  credit: 3 OR 4 hours.

Software process, analysis and design. Topics include: software development paradigms, system engineering, function-based analysis and design, and object-oriented analysis and design. Course will use team-projects for hands-on exercises. Same as CSE 426. 3 undergraduate hours. 3 or 4 graduate hours. CS 427 combined with CS 429 fulfills the Advanced Composition Requirement. Prerequisite: CS 225 and CS 373.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

**CS 428 Software Engineering II**  credit: 3 OR 4 hours.

Continuation of CS 427. Software development, management, and maintenance. Topics include project and configuration management, collaborative development models, software quality assurance, interoperability domain engineering and software reuse, and software re-engineering. Same as CSE 429. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 427.

**CS 429 Software Engineering II, ACP**  credit: 3 hours.

Continuation of CS 427. Identical to CS 428 except for the additional writing component. See CS 428. To fulfill the Advanced Composition Requirement, credit must be earned for both CS 427 and CS 429. Prerequisite: CS 427.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

**CS 431 Embedded Systems**  credit: 0 TO 4 hours.

A survey of sampled data systems and embedded architecture; key concepts in common embedded system applications; signal processing and control; embedded microprocessor and device interface; time-critical I/O handling; data communications; real-time operating systems and techniques for the development and analysis of embedded real-time software; hands-on laboratory projects. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 241 or ECE 391.

**CS 433 Computer System Organization**  credit: 3 OR 4 hours.

Computer system analysis and design. Organizational dependence on computations to be performed. Speed and cost of parts and overall machines. Instruction set design. Pipeline and vector machines. Memory hierarchy design. Same as CSE 422. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 232.

**CS 435 Intro to VLSI System Design**  credit: 3 hours.

Same as CSE 433 and ECE 425. See ECE 425.

**CS 436 Computer Networking Laboratory**  credit: 3 OR 4 hours.

Same as ECE 435. See ECE 435.

**CS 438 Communication Networks**  credit: 3 hours.

Layered architectures and the OSI Reference Model; design issues and protocols in the transport, network, and data link layers; architectures and control algorithms of local-area, point-to-point, and satellite networks; standards in networks access protocols; models of network interconnection; overview of networking and communication software. Same as CSE 425 and ECE 438. Prerequisite: CS 241 or ECE 391; one of MATH 461, MATH 463, ECE 313.

**CS 439 Wireless Networks**  credit: 3 OR 4 hours.

Same as ECE 439. See ECE 439.

**CS 440 Artificial Intelligence**  credit: 3 OR 4 hours.

Major topics in and directions of research in artificial intelligence: AI languages (LISP and PROLOG), basic problem solving techniques, knowledge representation and computer inference, machine learning, natural language understanding, computer vision, robotics, and societal impacts. Same as ECE 448. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225 or ECE 391.
CS 443  Introduction to Robotics  credit: 4 hours.
Same as ECE 470, GE 421, and ME 445. See ECE 470.

CS 446  Machine Learning  credit: 3 OR 4 hours.
Theory and basic techniques in machine learning. Major theoretical paradigms and key concepts developed in machine learning in
the context of applications such as natural language and text processing, computer vision, data mining, adaptive computer systems
and others. Review of several supervised and unsupervised learning approaches: methods for learning linear representations; on-line
learning, Bayesian methods; decision-trees; features and kernels; clustering and dimensionality reduction. 3 or 4 graduate hours. Prerequisite: CS 373 and CS 440.

CS 450  Numerical Analysis  credit: 3 OR 4 hours.
Introduction to numerical analysis, including linear system solvers, optimization techniques, interpolation and approximation of
functions, solving systems of nonlinear equations, eigenvalue problems, least squares, and quadrature; numerical handling of ordinary
and partial differential equations. Same as CSE 401, ECE 491, and MATH 450. 3 undergraduate hours. 3 or 4 graduate hours. Credit is
not given for both CS 450 and CS 457. Prerequisite: CS 101 or CS 125; CS 357 or MATH 415; MATH 285.

CS 457  Numerical Methods II  credit: 3 hours.
Continuation of CS 357. Orthogonalization methods for least squares, Krylov subspace methods, non-linear equations and optimization
in multiple dimensions, initial and boundary value problems for ordinary and partial differential equations. 3 undergraduate hours. No
graduate credit. Credit is not given for both CS 457 and CS 450. Prerequisite: CS 357.

CS 458  Numerical Linear Algebra  credit: 3 OR 4 hours.
Direct and iterative methods for systems of linear equations; over-determined systems of equations; eigenvalue problems; nonlinear
systems of equations. Same as CSE 412 and MATH 458. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 257.

CS 460  Security Laboratory  credit: 3 OR 4 hours.
Operating systems security: access control, least privilege mechanism and malware techniques. Network security: firewalls, sniffing,
tunnels, intrusion detection, AAA and worm structure. System security: forensics security architectures, and attack/defend exercises.
Complements CS 461 via hands-on project. Same as ECE 419. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 257.

CS 461  Computer Security I  credit: 3 OR 4 hours.
Fundamental principles of computer and communications security and information assurance: ethics, privacy, notions of threat,
vulnerabilities, and risk in systems, information warfare, malicious software, data secrecy and integrity issues, network security, trusted
computing, mandatory and discretionary access controls, certification and accreditation of systems against security standards. Security
mechanisms: authentication, auditing, intrusion detection, access control, cryptography, security protocols, key distribution. Same as
ECE 422. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 241 or ECE 391.

CS 462  Logic Design  credit: 3 hours.
Same as ECE 462 and MATH 491. See ECE 462.

CS 463  Computer Security II  credit: 3 OR 4 hours.
Program security, trusted base, privacy, anonymity, non-interference, information flow, confinement, advanced auditing, forensics,
intrusion detection, key management and distribution, policy composition and analysis, formal approaches to specification and
verification of secure systems and protocols, and topics in applied cryptography. Same as ECE 424. 3 undergraduate hours. 3 or 4
graduate hours. Prerequisite: CS 461. Recommended: CS 475.

CS 465  User Interface Design  credit: 3 OR 4 hours.
A project-focused course that covers fundamental principles of user interface design, implementation, and evaluation. Small teams
work on a semester-long project that includes: analysis of the problem domain, user skills, and tasks; iterative prototyping of interfaces
to address user needs; conducting several forms of evaluation such as cognitive walkthroughs and usability tests; implementation of the
final prototype. Non-technical majors may enroll in the course as non-programmers who participate in all aspects of the projects with
the possible exception of implementation. Same as LIS 465. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225 or CS
400.

CS 466  Introduction to Bioinformatics  credit: 3 OR 4 hours.
Algorithmic approaches in bioinformatics: (i) biological problems that can be solved computationally (e.g., discovering genes, and
interactions among different genes and proteins); (ii) algorithmic techniques with wide applicability in solving these problems (e.g.,
dynamic programming and probabilistic methods); (iii) practical issues in translating the basic algorithmic ideas into accurate and
efficient tools that biologists may use. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225.

CS 473  Algorithms  credit: 0 TO 4 hours.
Advanced data structures, graph algorithms, arithmetic algorithms, geometric algorithms, string problems, parallel algorithms, NP-completeness. Same as CSE 414 and MATH 473. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225 and CS 373.

**CS 475  Formal Models of Computation**  credit: 3 OR 4 hours.
Finite automata and regular languages; pushdown automata and context-free languages; Turing machines and recursively enumerable sets; linear-bounded automata and context-sensitive languages; computability and the halting problem; undecidable problems; recursive functions; Chomsky hierarchy; computational complexity. Same as MATH 475. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 373.

**CS 476  Program Verification**  credit: 3 OR 4 hours.
Examines formal methods for demonstrating correctness and other properties of programs. Invariant assertions; Hoare axiomatics; well-founded orderings for proving termination; structural induction; computational induction; data structures; parallel programs; an overview of predicate calculus. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225; CS 373 or MATH 414.

**CS 477  Formal Software Devel Methods**  credit: 3 OR 4 hours.
Mathematical models, languages, and methods for software specification, development, and verification. Same as ECE 478. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225 or CS 400; CS 373 or MATH 414.

**CS 481  Stochastic Processes & Applic**  credit: 3 OR 4 hours.
Same as IE 410. See IE 410.

**CS 482  Simulation**  credit: 3 OR 4 hours.
Same as IE 413. See IE 413.

**CS 491  Seminar**  credit: 0 TO 4 hours.
Seminar on topics of current interest as announced in the Class Schedule. Approved for S/U grading only. May be repeated in the same or separate terms if topics vary to a maximum of 4 hours. Prerequisite: As specified for each topic offering, see Class Schedule or departmental course description.

**CS 492  Senior Project I**  credit: 3 hours.
First part of a project course in computer science. Students work in teams to solve typical commercial or industrial problems. Work involves planning, design, and implementation. Extensive oral and written work is required both on-campus and possibly off-campus at sponsors' locations. CS 492 must be taken as a sequence with either CS 493 or CS 494. CS 492 combined with CS 493 fulfills the Advanced Composition Requirement. 3 undergraduate hours. Credit is not given for both CS 492 and a project course in another engineering department for the same project. For Computer Science majors with senior standing.

**CS 493  Senior Project II, ACP**  credit: 3 hours.
Continuation of CS 492. Identical to CS 494 except for an additional writing component. See CS 494. 3 undergraduate hours. To fulfill the Advanced Composition Requirement, credit must be earned for both CS 492 and CS 493. Credit is not given for both CS 493 and a project course in another engineering department for the same project. Prerequisite: CS 492.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

**CS 494  Senior Project II**  credit: 3 hours.
Continuation of CS 492. Students work in teams to solve typical commercial or industrial problems. Work involves planning, design, and implementation. Extensive oral and written work is required both on-campus and possibly off-campus at sponsors' locations. 3 undergraduate hours. Credit is not given for both CS 494 and a project course in another engineering department for the same project. Prerequisite: CS 492.

**CS 498  Special Topics**  credit: 0 TO 4 hours.
Subject offerings of new and developing areas of knowledge in computer science intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

**CS 499  Senior Thesis**  credit: 3 hours.
Research and thesis development experience in computer science. A student works with a faculty member on a mutually agreed upon thesis topic and completes a written thesis. Work involves literature search, oral presentation, analysis and/or implementation, paper preparation, and a written thesis. 3 undergraduate hours. May be repeated to a maximum of 6 hours. Prerequisite: Senior standing in CS and consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition
CS 505  **Numerical Fluid Dynamics**  credit: 4 hours.
Same as ATMS 502 and CSE 566. See ATMS 502.

CS 511  **Advanced Database Systems**  credit: 4 hours.
Advanced concepts in database management system design and implementation, and an introduction to the major recent developments in the field. Relational roots, distributed and parallel databases, object databases and extensibility, semistructured data and XML, web research, benchmarks, and current directions in the field. Prerequisite: CS 411.

CS 512  **Data Mining Principles**  credit: 4 hours.
An advanced course on principles and algorithms of data mining. Data cleaning and integration; descriptive and predictive mining; mining frequent, sequential, and structured patterns; clustering, outlier analysis and fraud detection; stream data, web, text, and biomedical data mining; security and privacy in data mining; research frontiers. Prerequisite: CS 412.

CS 519  **Scientific Visualization**  credit: 4 hours.
A detailed study of visualization techniques useful in analysis of engineering and scientific data. Physical models; methods of computational science; two- and three-dimensional data types; visual representation schemes for scalar, vector, and tensor data; isosurface and volume visualization methods; visual monitoring; interactive steering. Same as CSE 527. Prerequisite: CS 418.

CS 522  **Programming Language Semantics**  credit: 4 hours.
The theory of programming languages including functional programming, meta-circular interpreters, typed, untyped and polymorphic lambda-calculi, and denotational semantics. Prerequisite: CS 422 and CS 426.

CS 523  **Advanced Operating Systems**  credit: 4 hours.
Advanced concepts in operating system design and coverage of recent research directions. Resource management for parallel and distributed systems. Interaction between operating system design and computer architectures. Process management, virtual memory, interprocess communication, context switching, parallel and distributed file system designs, persistent objects, process and data migration, load balancing, security, protection. Term projects. Same as CSE 523. Prerequisite: CS 423, CS 425, and CS 433.

CS 524  **Concurrent Progrmg Languages**  credit: 4 hours.
Introduction to the theory of concurrency and concurrent programming languages. Formal models of concurrent computation such as process algebras, nets, and actors; high level concurrent programming languages and their operational semantics; methods for reasoning about correctness and complexity of concurrent programs. Prerequisite: CS 422; CS 475 or CS 476.

CS 525  **Advanced Distributed Systems**  credit: 4 hours.
Peer-to-peer systems, sensor networks, and fundamental/theoretical distributed computing. Reviews classical work in each, and uses design methodologies to explore overlaps across the three otherwise scattered research areas. Studies revolve around protocol design, systems issues, and theory. Reading selections are roughly two-third classical to one-third contemporary, which are updated every year. Students learn to write critiques, make presentations, and create a conference paper in a systematic manner. Prerequisite: One of CS 423, CS 425, CS 438.

CS 526  **Advanced Compiler Construction**  credit: 4 hours.
Incremental and interactive compiling, error correction, code optimization, models of code generators. Same as CSE 526. Prerequisite: CS 426.

CS 527  **Topics in Software Engineering**  credit: 4 hours.
Fault-tolerant software, software architecture, software patterns, multi-media software, and knowledge-based approaches to software engineering. Case studies. Same as CSE 529. Prerequisite: CS 428 or CS 429.

CS 533  **Parallel Computer Architecture**  credit: 4 hours.
Theoretical aspects of parallel and pipeline computation; time and processor bounds on classes of computations; data alignment network speed and cost bounds; conflict-free access memories; overall computer system ideas. Same as CSE 522 and ECE 533. Prerequisite: CS 433.

CS 536  **Fault-Tolerant Dig Syst Design**  credit: 4 hours.
Same as ECE 542. See ECE 542.

CS 541  **Computer Systems Analysis**  credit: 4 hours.
Same as CSE 524 and ECE 541. See ECE 541.

CS 543  **Computer Vision**  credit: 4 hours.
Same as ECE 549. See ECE 549.

CS 545  **Systems Modeling & Simulation**  credit: 4 hours.
CS 546  **Machine Learning in NLP**  credit: 4 hours.
Introduction to the central learning frameworks and techniques that have emerged in the field of natural language processing and found applications in several areas in text and speech processing: from information retrieval and extraction, through speech recognition to syntax, semantics and language understanding related tasks. Presents the theoretical paradigms -- learning theoretic, probabilistic, and information theoretic -- and the relations among them, as well as the main algorithmic techniques developed within these and in key natural language applications. Prerequisite: CS 446 and CS 473.

CS 548  **Models of Cognitive Processes**  credit: 4 hours.
Formal models and concepts in vision and language; detailed analysis of computer vision, language, and learning problems; relevant psychological results and linguistic systems; survey of the state-of-the-art in artificial intelligence. Same as ECE 548. Prerequisite: CS 440.

CS 549  **Seminar in Cognitive Science**  credit: 2 OR 4 hours.
Same as PSYC 514, ANTH 514, EPSY 551, LING 570, and PHIL 514. See PSYC 514.

CS 554  **Parallel Numerical Interaction**  credit: 4 hours.
Introduction to numerical algorithms for parallel computers: parallel algorithms in numerical linear algebra (dense and sparse solvers for linear systems and the algebraic eigenvalue problem), numerical handling of ordinary and partial differential equations, and numerical optimization techniques. Same as CSE 512. Prerequisite: One of CS 450, CS 457, CS 555.

CS 555  **Numerical Methods for PDEs**  credit: 4 hours.
Introduction to numerical techniques for initial and boundary value problems in partial differential equations. Examines finite difference and finite element discretization techniques, direct and iterative solution methods for discrete problems, and programming techniques and usage of FORTRAN packages. Same as CSE 510 and MATH 552. Prerequisite: CS 450 or CS 457.

CS 556  **Iterative & Multigrid Methods**  credit: 4 hours.
Comprehensive treatment of algebraic and multigrid iterative methods to solve systems of equations, primarily linear equations arising from discretization of partial differential equations. Same as CSE 511.

CS 558  **Topics in Numerical Analysis**  credit: 4 hours.
Advanced topics in numerical analysis selected from areas of current research. Same as CSE 513. May be repeated. Prerequisite: As specified for each topic offering, see Schedule or departmental course description.

CS 559  **Human-Computer Interaction**  credit: 4 hours.
In-depth coverage of advanced topics in human-computer interaction (HCI). Topics include applied models of human performance and attention, design tools for creative design tasks, interruptions and peripheral displays, gestures, and bimanual input, and usability evaluation techniques. Students complete a research-oriented term project of their choosing. Prerequisite: CS 465.

CS 570  **Mesh Generation**  credit: 4 hours.
Design of geometric algorithms for grids and triangulations. Development of geometric and topological prerequisites (no prior course in these subjects is assumed). Complexes, subdivisions, Delaunay triangulations, randomized algorithms, homology groups, splines and surfaces. Same as CSE 514. Prerequisite: CS 473.

CS 571  **Combinatorial Mathematics**  credit: 4 hours.
Same as MATH 580. See MATH 580.

CS 572  **Extremal Graph Theory**  credit: 4 hours.
Same as MATH 581. See MATH 581.

CS 573  **Topics in Algorithms**  credit: 4 hours.
Theoretical analysis of various algorithms: sorting, searching, selection, polynomial evaluation, matrix multiplication, and multiplication of real numbers. Same as CSE 515. May be repeated. Prerequisite: CS 473.

CS 575  **Methods of Combinatorics**  credit: 4 hours.
Same as MATH 584. See MATH 584.

CS 576  **Topics in Automated Deduction**  credit: 2 TO 4 hours.
Advanced topics in computer-aided methods for formal deduction, selected from areas of current research, such as: resolution theorem proving strategies, special relations, equational reasoning, unification theory, rewrite systems, mathematical induction, program derivation, hybrid inference systems, and programming with logic. May be repeated in separate terms. Prerequisite: As specified for each topic offering, see Schedule or departmental course description.
CS 577  **Coding Theory**  credit: 4 hours.
Same as ECE 556 and MATH 579. See ECE 556.

CS 578  **Information Theory**  credit: 4 hours.
Same as ECE 563 and STAT 563. See ECE 563.

CS 579  **Computational Complexity**  credit: 4 hours.
Turing machines; determinism and non-determinism; time and space hierarchy theorems; speed-up and tape compression; Blum axioms; structure of complexity classes NP, P, NL, L, and PSPACE; complete problems; randomness and complexity classes RP, RL, and BPP; alternation, polynomial-time hierarchy; circuit complexity, parallel complexity, NC, and RNC; relativized computational complexity; time-space trade-offs. Same as ECE 579 and MATH 578. Prerequisite: CS 473 or CS 475.

CS 591  **Advanced Seminar**  credit: 0 TO 4 hours.
Seminar on topics of current interest as announced in the Class Schedule. Approved for S/U grading only. May be repeated in the same or separate terms if topics vary. Prerequisite: As specified for each topic offering, see Class Schedule or departmental course description.

CS 597  **Individual Study**  credit: 2 TO 16 hours.
Individual study or reading in a subject not covered in normal course offerings. May be repeated. Prerequisite: Consent of instructor.

CS 598  **Special Topics**  credit: 2 TO 4 hours.
Subject offerings of new and developing areas of knowledge in computer science intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

CS 599  **Thesis Research**  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
Computational Science and Engineering

Computational Science and Engineering
Director of Program: Michael T. Heath
Administrative Office: 2270 Digital Computer Lab, 1304 W. Springfield Avenue, Urbana
Phone: 333-0654
www.cse.uiuc.edu

CSE 400  Data Structures: Non-CS Majors  credit: 4 hours.
Same as CS 400. See CS 400.

CSE 401  Numerical Analysis  credit: 3 OR 4 hours.
Same as CS 450, ECE 491 and MATH 450. See CS 450.

CSE 402  Parallel Progrmg: Sci & Engrg  credit: 3 OR 4 hours.
Same as CS 420 and ECE 492. See CS 420.

CSE 412  Numerical Linear Algebra  credit: 3 OR 4 hours.
Same as CS 458 and MATH 458. See CS 458.

CSE 414  Algorithms  credit: 0 TO 4 hours.
Same as CS 473 and MATH 473. See CS 473.

CSE 422  Computer System Organization  credit: 3 OR 4 hours.
Same as CS 433. See CS 433.

CSE 423  Operating Systems Design  credit: 3 OR 4 hours.
Same as CS 423. See CS 423.

CSE 424  Distributed Systems  credit: 3 hours.
Same as CS 425 and ECE 428. See CS 425.

CSE 425  Communication Networks  credit: 3 hours.
Same as CS 438 and ECE 438. See CS 438.

CSE 426  Software Engineering I  credit: 3 OR 4 hours.
Same as CS 427. See CS 427.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

CSE 427  Interactive Computer Graphics  credit: 0 TO 4 hours.
Same as CS 418. See CS 418.

CSE 428  Production Computer Graphics  credit: 3 OR 4 hours.
Same as CS 419. See CS 419.

CSE 429  Software Engineering II  credit: 3 OR 4 hours.
Same as CS 428. See CS 428.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

CSE 433  Intro to VLSI System Design  credit: 3 hours.
Same as CS 435 and ECE 425. See ECE 425.

CSE 441  Introduction to Optimization  credit: 3 OR 4 hours.
Same as ECE 490. See ECE 490.

CSE 450  Computational Mechanics  credit: 3 OR 4 hours.
Same as TAM 470. See TAM 470.
CSE 451  Finite Element Analysis  credit: 3 OR 4 hours.
Same as AE 420 and ME 471. See ME 471.

CSE 461  Computational Aerodynamics  credit: 3 OR 4 hours.
Same as AE 410. See AE 410.

CSE 462  Safety Anlys Nucl Reactor Syst  credit: 3 OR 4 hours.
Same as NPRE 457. See NPRE 457.

CSE 485  Atomic Scale Simulations  credit: 3 OR 4 hours.
Same as MSE 485 and PHYS 466. See MSE 485.

CSE 491  Computer Methods  credit: 3 OR 4 hours.
Same as CEE 490. See CEE 490.

CSE 510  Numerical Methods for PDEs  credit: 4 hours.
Same as CS 555 and MATH 552. See CS 555.

CSE 511  Iterative & Multigrid Methods  credit: 4 hours.
Same as CS 556. See CS 556.

CSE 512  Parallel Numerical Algorithms  credit: 4 hours.
Same as CS 554. See CS 554.

CSE 513  Topics in Numerical Analysis  credit: 4 hours.
Same as CS 558. See CS 558.

CSE 514  Mesh Generation  credit: 4 hours.
Same as CS 570. See CS 570.

CSE 515  Topics in Algorithms  credit: 4 hours.
Same as CS 573. See CS 573.

CSE 517  Adv Finite Element Methods  credit: 4 hours.
Same as TAM 574. See TAM 574.

CSE 521  Computer Architecture  credit: 4 hours.
Same as ECE 511. See ECE 511.

CSE 522  Parallel Computer Architecture  credit: 4 hours.
Same as CS 533 and ECE 533. See CS 533.

CSE 523  Advanced Operating Systems  credit: 4 hours.
Same as CS 523. See CS 523.

CSE 524  Computer Systems Analysis  credit: 4 hours.
Same as CS 541 and ECE 541. See ECE 541.

CSE 526  Advanced Compiler Construction  credit: 4 hours.
Same as CS 526. See CS 526.

CSE 527  Scientific Visualization  credit: 4 hours.
Same as CS 519. See CS 519.

CSE 528  Computer Microarchitecture  credit: 4 hours.
Same as ECE 512. See ECE 512.

CSE 529  Topics in Software Engineering  credit: 4 hours.
Same as CS 527. See CS 527.

CSE 530  Computational Electromagnetics  credit: 4 hours.
Same as ECE 540. See ECE 540.
CSE 532  **Numerical Circuit Analysis**  credit: 4 hours.
Same as ECE 552. See ECE 552.

CSE 534  **Adv Theory Semicond & Devices**  credit: 4 hours.
Same as ECE 539. See ECE 539.

CSE 542  **Digital Signal Processing II**  credit: 4 hours.
Same as ECE 551. See ECE 551.

CSE 543  **Topics in Image Processing**  credit: 4 hours.
Same as ECE 547. See ECE 547.

CSE 544  **Power System Dyn & Stability**  credit: 4 hours.
Same as ECE 576. See ECE 576.

CSE 545  **Power System Control**  credit: 4 hours.
Same as ECE 573. See ECE 573.

CSE 551  **Finite Element Methods**  credit: 4 hours.
Same as CEE 570. See CEE 570.

CSE 560  **Computational Fluid Mechanics**  credit: 4 hours.
Same as TAM 570. See TAM 570.

CSE 561  **Computational Process Modeling**  credit: 4 hours.
Same as ME 554. See ME 554.

CSE 564  **Surface Water Quality Modeling**  credit: 4 hours.
Same as CEE 534. See CEE 534.

CSE 565  **Groundwater Modeling**  credit: 4 hours.
Same as CEE 557. See CEE 557.

CSE 566  **Numerical Fluid Dynamics**  credit: 4 hours.
Same as ATMS 502 and CS 505. See ATMS 502.

CSE 568  **Global Atmospheric Modeling**  credit: 4 hours.
Same as ATMS 530. See ATMS 530.
Creative Writing

English
Head of Department: Curtis Perry
Department Office: 208 English Building, 608 South Wright, Urbana
Phone: 333-2391
www.english.uiuc.edu

CW 104 Introductory Narrative Writing credit: 3 hours.
Practice in the writing of narrative prose, with primary emphasis on short fiction. Prerequisite: Completion of campus Composition I general education requirement.

CW 106 Introductory Poetry Writing credit: 3 hours.
Practice in the writing of poetry; experimentation with a number of fixed forms and free verse, but emphasis mainly on the student's freedom to develop a personal style. Prerequisite: Completion of campus Composition I general education requirement.

CW 202 Communications Workshop credit: 3 hours.
Independent writing projects and examination of literature as the cultural basis of the student's specialized fields.

CW 204 Intermediate Narrative Writing credit: 3 hours.
Practice in the writing of fiction, with emphasis on the short story. Prerequisite: CW 104 or equivalent.

CW 208 Creative Nonfiction Writing credit: 3 hours.
Types of nonfiction prose, including the personal essay, memoir, literary journalism, and historical writing. Prerequisite: RHET 233 or RHET 243, or equivalent, or consent of instructor.

CW 404 Advanced Narrative Writing credit: 3 OR 4 hours.
Continued practice in the writing of fiction, with emphasis on the longer story. 3 undergraduate hours. 4 graduate hours. Prerequisite: CW 204 or equivalent.

CW 406 Advanced Poetry Writing credit: 3 OR 4 hours.
Practice of the writing of poetry aided by intensive study of examples. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: CW 106 or equivalent.

CW 455 Creative Writing Tutorial credit: 3 OR 4 hours.
Personal direction in a writing project: fiction (novel or short stories), poetry or creative nonfiction. Frequency of conference to be determined by the type of project. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours. Undergraduate Rhetoric majors in Creative Writing with a 3.25 average who are working towards the degree with Distinction or High Distinction in Rhetoric may, with the consent of the Director of Creative Writing and the English honors advisor, take this course for honors credit. Prerequisite: CW 208, CW 404 or CW 406, and consent of the Director of Creative Writing.

CW 500 The Craft of Fiction credit: 4 hours.
Examination of the creative process of fiction from the perspectives of aesthetics and techniques, illustrated from the work of selected authors. Prerequisite: Graduate standing in English.

CW 502 Problems in Poetry Writing credit: 4 hours.
Examination of the creative process of poetry from the perspective of aesthetics and techniques, illustrated from the work of selected authors. Prerequisite: Graduate standing in English.

CW 504 Writing Workshop in Fiction credit: 4 hours.
Directed individual projects, with group discussion in fiction. May be repeated to a maximum of 16 hours. Prerequisite: Admission to the MFA program, or graduate standing in English with advanced submission of creative work and consent of instructor.

CW 506 Writing Workshop in Poetry credit: 4 hours.
Directed individual projects, with group discussion in poetry. May be repeated to a maximum of 16 hours. Prerequisite: Admission to the MFA program, or graduate standing in English with advanced submission of creative work and consent of instructor.

CW 560 Literary Publishing & Promotion credit: 0 TO 4 hours.
A working practicum designed to teach graduate students the basics of literary journal publishing and to introduce them to career and entrepreneurial opportunities in other types of literary arts organizations. Students will attend weekly editorial meetings, complete weekly reading assignments, and will work 2 hours per week in the ‘Ninth Letter’ office, reading manuscript submissions and completing
various clerical tasks for the journal. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours. Prerequisite: MFA candidate standing.

**CW 563  Special Topics**  credit: 0 TO 4 hours.
Approved for both letter and S/U grading. May be repeated up to a maximum of 12 hours. Prerequisite: MFA candidate standing or consent of instructor.

**CW 591  Independent Study**  credit: 0 TO 4 hours.
Approved for both letter and S/U grading. May be repeated up to a maximum of 12 hours. Prerequisite: MFA candidate standing.

**CW 599  Thesis Research**  credit: 0 TO 12 hours.
Guidance in writing theses for MFA degrees. Approved for S/U grading only. May be repeated up to a maximum of 12 hours. Prerequisite: MFA candidate standing.
CWL 111  Bible as Literature  credit: 3 hours.
Same as ENGL 114 and RLST 101. See RLST 101.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 112  Literature of Global Culture  credit: 3 hours.
Same as ENGL 112. See ENGL 112.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures
UIUC: Western Compartv Cult

CWL 114  Global Consciousness and Lit  credit: 3 hours.
Exploration of the cultural and historical roots of globalization and the development of global consciousness from ancient Greece to the present, as reflected primarily in literature, but also with reference to historiography, cartography, religion, art, politics, economics, and popular culture. Course materials including literary texts, articles, historical accounts, political tracts, films, and paintings focus on the mutual perception of, and historical relationships among Europe, the Arab world, Africa, Asia, and the Americas.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures
UIUC: Western Compartv Cult

CWL 117  Russ & E Euro Science Fiction  credit: 3 hours.
Same as SLAV 117. See SLAV 117.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 119  Literature of Fantasy  credit: 3 hours.
Same as ENGL 119. See ENGL 119.

CWL 151  Cross-Cultural Thematics  credit: 3 hours.
Explores a combination of western and non-western literature through the focus on a shared theme, exploring differences in treatment both within and among different cultures. Two such thematic focuses are offered in rotation; one on concepts of love and one on ways of writing about death. Both themes introduce students to a wide array of famous texts from different cultures and also offer some varied perspectives for their own inevitable thoughts on these major topics. May be repeated to a maximum of 6 hours if topics vary. Students may register in more than one section per term.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 189  Lit of Asia & Africa I  credit: 3 hours.
Comparative study of major works from Africa, the Middle East, South and East Asia, from ancient times through the medieval period, emphasizing literary, cultural, philosophical, and religious traditions, and cross-cultural contact. Topics studied may include Egyptian and Mesopotamian mythology, Hinduism, Buddhism, Confucianism, Daoism, and the Abrahamic tradition. All readings in English.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Literature and the Arts

CWL 190  Lit of Asia & Africa II  credit: 3 hours.
Comparative study of major works from Africa, the Middle East, South and East Asia, from the early modern to the contemporary period, emphasizing literary, cultural, philosophical, and religious traditions and cross-cultural contact. Topics studied may include Hinduism, Buddhism, Confucianism, Daoism, Islam, colonialism and globalization. All readings in English.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Literature and the Arts

CWL 191  Freshman Honors Tutorial  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors students or to Cohn Scholars and Associates. May be repeated one time. Prerequisite: Consent of departmental honors advisor.

CWL 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

CWL 201  Comparative Lit Studies  credit: 3 hours.
Introduction to various methods in comparative literary study, including genres, thematics, literary relations, literary movements, and interdisciplinary approaches. Prerequisite: One semester of college literature or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 202  Literature and Ideas  credit: 3 hours.
Analysis of several important world-views in Western civilization (such as classical, Romantic, modern, and so forth), studied comparatively and in relation to selected figures in Western literature. Prerequisite: CWL 241 and CWL 242; or one year of college literature; or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CWL 203  Intro Persian Culture & Lit I  credit: 3 hours.
Same as PERS 205. See PERS 205.

CWL 204  Intro Persian Culture & Lit II  credit: 3 hours.
Same as PERS 206. See PERS 206.

CWL 205  Islam & West Through Lit  credit: 3 hours.
Organized around major cultural/historical/religious topics presented in literature through Western and Islamic eyes, beginning with the Crusades and proceeding into the present. This course will examine stereotypes, fantasies, identifications and political opportunism promoted by the encounter between the West and the Islamic World. Prerequisite:CWL 241 and CWL 242 or one year of college literature.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 206  Classical Allusions in Cinema  credit: 3 hours.
Same as CLCV 206. See CLCV 206.

CWL 210  Intro to Mod African Lit  credit: 3 hours.
Same as AFST 210 and ENGL 211. See AFST 210.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

CWL 215  Madness, Myth, and Murder  credit: 3 hours.
Same as SCAN 215. See SCAN 215.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 218  Survey of Ukrainian Literature  credit: 3 hours.
Same as UKR 218. See UKR 218.

CWL 220  Origins of Western Literature  credit: 3 hours.
Same as CLCV 220. See CLCV 220.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CWL 221 Jewish Storytelling credit: 3 hours.
Same as ENGL 223, RLST 220, and YDSH 220. See YDSH 220.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CWL 222 Intro to Francophone Lit credit: 3 hours.
Same as FR 219. See FR 219.

CWL 223 Qur’an Structure and Exegesis credit: 3 hours.
Same as RLST 222. See RLST 223.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Literature and the Arts

CWL 224 German Literature in Trans credit: 3 hours.
Same as GER 200. See GER 200.

CWL 225 Constr Afr and Carib Identity credit: 3 hours.
Same as AFST 209, FR 240, and LAST 240. See FR 240.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

CWL 226 Humanist Persp of Afro-Am Exp credit: 3 hours.
Same as AFRO 224. See AFRO 224.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

CWL 227 19thC Russian Lit Survey credit: 3 hours.
Same as RUSS 220. See RUSS 220.

CWL 240 Italy Middle Ages & Renaiss credit: 3 hours.
Same as ITAL 240 and MDVL 240. See ITAL 240.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 241 Lit Europe & the Americas I credit: 3 hours.
Comparative study of major works from Europe and the Americas from ancient times to the Renaissance, emphasizing literary, cultural, and philosophical traditions, and cross-cultural contact. Authors studies may include Homer, Virgil, Dante, Petrarch, Cervantes, Las Casas, and Shakespeare. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult
UIUC: Advanced Composition

CWL 242 Lit Europe and the Americas II credit: 3 hours.
Comparative study of major works from Europe and the Americas from Enlightenment to the contemporary period, emphasizing literary, cultural, and philosophical traditions, and cross-cultural contact. Authors studied may include Voltaire, Goethe, Melville, Flaubert, Dostoevsky, Joyce, Kafka, and Calvino. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult
UIUC: Advanced Composition
CWL 244  Hispanic Literature & Culture  credit: 3 hours.
Same as SPAN 244. See SPAN 244.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 245  Survey of Polish Literature  credit: 3 hours.
Same as POL 245. See POL 245.

CWL 249  Russian Lit Since 1917  credit: 3 hours.
Same as RUSS 225. See RUSS 225.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 250  Grimms' Fairy Tales in Context  credit: 3 hours.
Same as ENGL 267 and GER 250. See GER 250.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult
UIUC: Advanced Composition

CWL 251  Viking Mythology  credit: 3 hours.
Same as MDVL 251, RLST 251, and SCAN 251. See SCAN 251.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

CWL 252  Viking Sagas in Translation  credit: 3 hours.
Same as MDVL 252 and SCAN 252. See SCAN 252.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CWL 253  Medieval Lit and Culture  credit: 3 hours.
Same as ENGL 202 and MDVL 201. See ENGL 202.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CWL 254  The Legend of King Arthur  credit: 3 hours.
Same as MDVL 254 and GER 254. See GER 254.
This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

CWL 255  Renaissance Lit and Culture  credit: 3 hours.
Same as ENGL 204. See ENGL 204.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CWL 257  Enlightenment Lit and Culture  credit: 3 hours.
Same as ENGL 206. See ENGL 206.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CWL 259  Afro-American Literature I  credit: 3 hours.
Same as AFRO 259 and ENGL 259. See ENGL 259.
This course satisfies the General Education Criteria for a:
CWL 260  **Afro-American Literature II**  credit: 3 hours.
Same as AFRO 260 and ENGL 260. See ENGL 260.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

CWL 262  **Sex & Gender in Antiquity**  credit: 3 hours.
Same as CLCV 240 and GWS 240. See CLCV 240.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Communist Cult

CWL 263  **The Heroic Tradition**  credit: 3 hours.
Same as CLCV 221. See CLCV 221.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Communist Cult

CWL 264  **The Tragic Spirit**  credit: 3 hours.
Same as CLCV 222. See CLCV 222.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Communist Cult

CWL 265  **Modern Drama I**  credit: 3 hours.
Same as ENGL 243. See ENGL 243.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 266  **Modern Drama II**  credit: 3 hours.
Same as ENGL 244. See ENGL 244.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 267  **The Short Story**  credit: 3 hours.
Same as ENGL 245. See ENGL 245.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 269  **Brit, Amer & Contin Fiction**  credit: 3 hours.
Same as ENGL 248. See ENGL 248.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 271  **The Holocaust in Context**  credit: 3 hours.
Same as ENGL 268 and GER 260. See GER 260.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Communist Cult
UIUC: Advanced Composition

CWL 272  **Sexuality and Literature**  credit: 3 hours.
Same as GER 270 and GWS 270. See GER 270.

CWL 275  **Masterpieces of East Asian Lit**  credit: 3 hours.
Same as EALC 275. See EALC 275.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

UIUC: Non-Western Cultures

CWL 277  Slavic Literature Survey  credit: 3 hours.
Same as SLAV 277. See SLAV 277.

CWL 283  Jewish Sacred Literature  credit: 3 hours.
Same as ENGL 283 and RLST 283. See RLST 283.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 284  Modern Jewish Literature  credit: 3 hours.
Same as ENGL 284 and RLST 284. See ENGL 284.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

CWL 307  Classical Chinese Lit  credit: 3 hours.
Same as EALC 307. See EALC 307.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Literature and the Arts

CWL 308  Chinese Popular Lit  credit: 3 hours.
Same as EALC 308. See EALC 308.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

CWL 311  Japan Lit in Translation I  credit: 3 hours.
Same as EALC 305. See EALC 305.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Literature and the Arts

CWL 312  Japan Lit in Translation II  credit: 3 hours.
Same as EALC 306. See EALC 306.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

CWL 318  Japanese Hero Types  credit: 3 hours.
Same as EALC 318. See EALC 318.

CWL 319  Women in Japanese Lit  credit: 3 hours.
Same as EALC 319 and GWS 319. See EALC 319.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Literature and the Arts

CWL 320  Lit Responses to the Holocaust  credit: 3 hours.
Same as ENGL 359, RLST 320, and YDSH 320. See YDSH 320.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

CWL 321  Russian Writers  credit: 3 hours.
Same as RUSS 320. See RUSS 320.

CWL 322  The Comic Imagination  credit: 3 hours.
CWL 323  **Tolstoy**  credit: 3 hours.
Same as RUSS 323. See RUSS 323.

CWL 324  **Dostoevsky**  credit: 3 hours.
Same as RUSS 322. See RUSS 322.

CWL 325  **Chekhov**  credit: 3 hours.
Same as RUSS 325 and THEA 362. See RUSS 325.

CWL 328  **Special Topics German Studies**  credit: 3 hours.
Same as GER 396. See GER 396.

CWL 335  **Nabokov**  credit: 3 hours.
Same as RUSS 335. See RUSS 335.

CWL 363  **Introduction to Oral Tradition**  credit: 3 hours.
Same as CLCV 363 and ENGL 362. See CLCV 363.

CWL 369  **Spirituality and Experience**  credit: 3 hours.
Same as ARTH 369, HIST 344, MDVL 369, and RLST 369. See ARTH 369.

CWL 372  **Korean Lit in English**  credit: 3 hours.
Same as EALC 370. See EALC 370.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Literature and the Arts

CWL 375  **Scandinavian Sexualities**  credit: 3 hours.
Same as GWS 375 and SCAN 375. See SCAN 375.

CWL 395  **Special Topics Comp Lit I**  credit: 3 hours.
Presentation and discussion of subjects relating literature to other disciplines; topic varies. May be repeated to a maximum of 6 hours.

CWL 400  **African Diasporic Lit Americas**  credit: 3 OR 4 hours.
Same as AFRO 400. See AFRO 400.

This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

CWL 410  **Modern African Fiction**  credit: 3 OR 4 hours.
Same as AFST 410, ENGL 470, and FR 410. See AFST 410.

CWL 411  **The Chinese Novel**  credit: 3 OR 4 hours.
Same as EALC 411. See EALC 411.

CWL 412  **Mod Chinese Lit in Translation**  credit: 3 OR 4 hours.
Same as EALC 412. See EALC 412.

CWL 413  **Dante**  credit: 3 hours.
Same as ITAL 413 and MDVL 413. See ITAL 413.

CWL 414  **Petrarch & Boccaccio**  credit: 3 hours.
Same as ITAL 414 and MDVL 414. See ITAL 414.

CWL 415  **Mod Japan Lit in Translation**  credit: 2 TO 4 hours.
Same as EALC 415. See EALC 415.

CWL 416  **Premodern Chinese Drama**  credit: 3 OR 4 hours.
CWL 420  Masterpieces Renaiss Lit  credit: 3 hours.
Same as ITAL 420 and MDVL 420. See ITAL 420.

CWL 421  Jewish Life-Writing  credit: 3 OR 4 hours.
Same as HIST 436, RLST 420, SLAV 420, and YDSH 420. See YDSH 420.

CWL 422  Classical Japanese Poetry  credit: 3 hours.
Same as EALC 422. See EALC 422.

CWL 425  Manuscripts and Early Printing  credit: 3 OR 4 hours.
Same as ARTH 425 and MDVL 425. See ARTH 425.

CWL 428  Japan at War and Peace  credit: 3 OR 4 hours.
Same as EALC 428. See EALC 428.

CWL 434  Studies in Francophonie  credit: 3 OR 4 hours.
Same as FR 479. See FR 479.

CWL 436  Problems of Polish Literature  credit: 3 OR 4 hours.
Same as POL 446. See POL 446.

CWL 440  Russian Culture Studies  credit: 3 OR 4 hours.
Same as RUSS 460. See RUSS 460.

CWL 441  Themes in Narrative  credit: 3 OR 4 hours.
Analysis of literary themes and types in narratives of Western and non-Western literature (e.g., the hero, east and west, dream visions), emphasizing comparative perspectives. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated to a maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: One year of college literature or consent of instructor.

CWL 444  Problems in Romanticism  credit: 3 OR 4 hours.
Same as RUSS 444. See RUSS 444.

CWL 445  Problems in Realism  credit: 3 OR 4 hours.
Same as RUSS 445. See RUSS 445.

CWL 450  Topics in Bodies and Genders  credit: 3 hours.
How do gender, sexuality, and the body emerge through cultural representations and across artistic forms? How do literature, film, and the visual arts construct gender identities in various times and places? Topics and regions vary by semester and instructor. All readings in English. Same as GWS 450. May be repeated up to 6 hours maximum. Prerequisite: Consent of instructor.

CWL 453  Slavic Cultural Studies  credit: 3 OR 4 hours.
Same as SLAV 452. See SLAV 452.

CWL 457  Russian Modernism  credit: 3 OR 4 hours.
Same as RUSS 424. See RUSS 424.

CWL 461  Lit Genres and Forms  credit: 3 OR 4 hours.
Structure and development of literary genres and forms in historical perspective (for instance, drama, parody and the grotesque, poetry, fables and fabulists, and modern fiction); essential international components and significant national variations of such genres and forms. Emphasis changes from term to term. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated to a maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: One year of college literature or consent of instructor.

CWL 462  Modern Japanese Drama  credit: 3 OR 4 hours.
Same as EALC 464, RLST 464, and THEA 487. See EALC 464.

CWL 463  Ibsen in Translation  credit: 3 OR 4 hours.
Same as SCAN 463 and THEA 483. See SCAN 463.

CWL 464  Strindberg in Translation  credit: 3 OR 4 hours.
Same as SCAN 464 and THEA 484. See SCAN 464.
CWL 465  **Stage Comedy**  credit: 3 OR 4 hours.
Same as ENGL 465. See ENGL 465.

CWL 466  **Approaches to Oral Tradition**  credit: 3 hours.
Same as CLCV 463 and ENGL 463. See CLCV 463.

CWL 470  **Drama in Premodern Japan**  credit: 3 OR 4 hours.
Same as EALC 463, RLST 485, and THEA 486. See EALC 463.

CWL 471  **International Lit Relations**  credit: 3 OR 4 hours.
Study of specific relations between authors of different countries; influences of certain works, concepts, or tastes on another work, author, or country; and literary interaction between Eastern and Western cultures. Emphasis changes from term to term. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated to a maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: One year of college literature or consent of instructor.

CWL 477  **Post-Communist Fiction**  credit: 3 OR 4 hours.
Same as SLAV 477 and REES 477. See SLAV 477.

CWL 478  **Classical Chinese Thought**  credit: 3 OR 4 hours.
Same as EALC 476 and HIST 425. See EALC 476.

CWL 483  **Lit Crit From 1800 to Present**  credit: 3 OR 4 hours.
Same as ENGL 483. See ENGL 483.

CWL 488  **French & Comparative Cinema I**  credit: 4 hours.
Same as CINE 488, FR 488, and HUM 488. See FR 488.

CWL 489  **French & Comparative Cinema II**  credit: 4 hours.
Same as CINE 489, FR 489, and HUM 489. See FR 489.

CWL 490  **Topics in Classical Literature**  credit: 3 OR 4 hours.
Same as CLCV 490. See CLCV 490.

CWL 493  **Senior Thesis and Honors**  credit: 3 TO 6 hours.
Independent research guided by tutor(s), leading to the writing of a comparative thesis. Intended primarily for candidates for honors in comparative literature, but open to other seniors. 3 to 6 undergraduate hours. No graduate credit. May be repeated to a maximum of 12 hours.

CWL 496  **Special Topics in Comp Lit II**  credit: 3 TO 4 hours.
Selected literary topics of international significance in relation to other cultural expressions. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated to a maximum of 9 undergraduate or 12 graduate hours. Prerequisite: Consent of instructor.

CWL 501  **Theory of Literature**  credit: 4 hours.
Major issues of literary theory, critical approaches, and comparative research. Prerequisite: Knowledge of two languages other than English or (with instructor's consent) advanced knowledge of one foreign language.

CWL 502  **Cross-Culture Comparison**  credit: 4 hours.
Problems and methods of cross-cultural literary studies, concentrating on the effects of historical encounters between different civilizations and on theoretical issues in comparing literatures across cultures. Prerequisite: Knowledge of two languages other than English or (with instructor's consent) advanced knowledge of one foreign language.

CWL 503  **Historiography of Cinema**  credit: 4 hours.
Same as CINE 503 and ENGL 503. See CINE 503.

CWL 504  **Theories of Cinema**  credit: 4 hours.
Same as CINE 504 and ENGL 504. See CINE 504.

CWL 535  **Nabokov**  credit: 4 hours.
Same as RUSS 535. See RUSS 535.

CWL 551  **Seminar Lit Movements**  credit: 4 hours.
Investigation of the development and mutation of literary movements (classicism, romanticism, symbolism, etc.) through a study of critical texts and their reception in various countries. May be repeated to a maximum of 12 hours if topics vary.

CWL 552  Studies French & Comp Cinema  credit: 4 hours.
Same as FR 552. See FR 552.

CWL 561  Seminar Genres - Forms  credit: 4 hours.
Study of a form (the lyric, the novel, the drama, etc.) to discover its essential components in all the literatures studied and the significance of national variations. May be repeated to a maximum of 12 hours if topics vary.

CWL 562  Sem Spanish-American Lit  credit: 4 hours.
Same as SPAN 535. See SPAN 535.

CWL 570  Studies in Critical Theory  credit: 4 hours.
Same as GER 570. See GER 570.

CWL 571  Seminar in Literary Relations  credit: 4 hours.
Investigation of the impact of one literature upon another, or of some specific works upon others (the role of English literature in continental Europe, the influence of Russian novelists on French and German writers, etc.). May be repeated to a maximum of 12 hours if topics vary.

CWL 576  Methods in Slavic Grad Study  credit: 4 hours.
Same as SLAV 576. See SLAV 576.

CWL 578  Seminar 20thC French Lit  credit: 4 hours.
Same as FR 578. See FR 578.

CWL 580  Teaching Comparative Lit  credit: 2 hours.
Introduction to the college-level teaching of comparative literature, usually associated with the supervision of teaching practice. Required of new teaching assistants in the Comparative Literature program, but may be taken by other Comparative Literature students.

CWL 581  Seminar Lit Themes  credit: 4 hours.
Study of a theme or type (the Faust myth, the romantic hero, etc.) to discover its essential components in all the literatures studied and the significance of national variations. The subject of the seminar varies each term. May be repeated to a maximum of 12 hours if topics vary.

CWL 582  Proseminar  credit: 4 hours.
Introduction to comparative literature as a discipline, history and philosophy of comparative literature, and training in practical professional skills, including conference presentations, grant writing, and course development. Prerequisite: Graduate standing.

CWL 590  Contemp Crit Methods & Theory  credit: 4 hours.
Same as FR 590. See FR 590.

CWL 593  Special Studies  credit: 1 TO 4 hours.

CWL 599  Thesis Research  credit: 0 TO 16 hours.
Intended for students engaged in writing a thesis as a partial requirement for the M.A. or Ph.D. degree in comparative literature. Approved for S/U grading only. May be repeated to a maximum of 8 graduate hours.
Czech

Slavic Languages and Literature
Head of Department: Harriet Murav
Department Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-0680
www.slavic.uiuc.edu/

CZCH 101  **Elementary Czech I**  credit: 4 hours.
Develops basic proficiency in Czech in listening, speaking, reading, and writing.

CZCH 102  **Elementary Czech II**  credit: 4 hours.
Continuation of CZCH 101. Prerequisite: CZCH 101.

CZCH 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

CZCH 201  **Second-year Czech I**  credit: 4 hours.
Develops intermediate-level proficiency in Czech in listening, speaking, reading, and writing. Prerequisite: CZCH 102 or equivalent.

CZCH 202  **Second-year Czech II**  credit: 4 hours.
Continuation of CZCH 201. Prerequisite: CZCH 201 or equivalent.

CZCH 483  **The Structure of Modern Czech**  credit: 3 hours.
Analysis of the sound system and grammar of the contemporary Czech language with some reference to its historical development. Prerequisite: Knowledge of another Slavic language, preferably Russian, or consent of instructor.

CZCH 484  **Readings in Czech**  credit: 3 OR 4 hours.
Reading and analysis of selected texts. 3 undergraduate hours. 4 graduate hours. Prerequisite: CZCH 202, CZCH 483 or consent of instructor.
Dance

Dance
Head of Department: Jan Erkert
Department Office: 907 1/2 West Nevada Street, Urbana
Phone: 333-1010
www.dance.uiuc.edu/dance

DANC 100  **Intro to Contemporary Dance**  credit: 3 hours.
Overview of major works, figures, and trends responsible for shaping dance as an evolving contemporary art form. The course will have lecture, viewing, discussion and experiential (studio participation) components. For non-dance majors.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

DANC 101  **Modern Dance I**  credit: 1 hours.
Introduction to basic dance technique and movement improvisation; the study of motion as an art, group relationships in improvisation, and discussion of choreographic ideas. For non-dance majors. May be repeated to a maximum of 4 hours.

DANC 102  **Modern Dance II**  credit: 1 hours.
Intermediate dance technique and improvisation. For non-dance majors. May be repeated to a maximum of 4 hours. Prerequisite: DANC 101 or consent of instructor.

DANC 105  **Jazz Dance I**  credit: 1 hours.
Introduction to basic dance technique and stylistic work in the jazz idiom. For non-dance majors. May be repeated to a maximum of 4 hours.

DANC 106  **Jazz Dance II**  credit: 1 hours.
Progressive development of the concepts and skills in DANC 105. For non-dance majors. May be repeated to a maximum of 4 hours. Prerequisite: DANC 105 or equivalent; or consent of instructor.

DANC 107  **Ballet I**  credit: 1 hours.
Introduction to ballet for nondance majors. May be repeated to a maximum of 4 hours.

DANC 108  **Ballet II**  credit: 1 hours.
Progressive development of the concepts and skills in DANC 107; for the non-dance major. May be repeated to a maximum of 4 hours. Prerequisite: Two semesters of DANC 107 or equivalent or consent of instructor.

DANC 109  **Ballet III**  credit: 1 hours.
Intermediate level of Ballet technique for non-dance majors. Course is a continuation and development of the skills in DANC 108. May be repeated to a maximum of 8 hours. Prerequisite: Two semesters of DANC 108 or equivalent or consent of instructor.

DANC 110  **Beginning Jazz Technique**  credit: 1 hours.
Introduction to basic dance techniques and stylistic work in the jazz idiom for experienced dancers. Emphasis on a conceptual understanding of jazz style (as related to America's own cultural diversity) and the development of the specific skills necessary for performance and teaching. May be repeated to a maximum of 2 hours. Prerequisite: Major standing in Dance or consent of instructor.

DANC 120  **Tap Dance I**  credit: 1 hours.
Introduction to basic tap technique for non-dance majors. Emphasis is on a conceptual understanding of tap style and the development of the specific skills needed for performance. May be repeated to a maximum of 4 hours.

DANC 121  **Tap Dance II**  credit: 1 hours.
Intermediate level of tap dance technique for non-dance majors. Course is a continuation of DANC 120, emphasizing a progression in movement vocabulary, style, rhythm, and performance quality. May be repeated to a maximum of 4 hours. Prerequisite: DANC 120 or equivalent, or consent of instructor.

DANC 131  **Production Practicum I**  credit: 1 OR 2 hours.
Practical experience in the production of dance concerts mounted in the Krannert Center for the Performing Arts. May be repeated to a maximum of 6 hours. (1 hour credit per concert up to 2 hours per term).
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANC 150</td>
<td><strong>Orientation to Dance</strong></td>
<td>2 hours</td>
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<tr>
<td></td>
<td>Survey of the field including dance as a theatre art, careers, injury prevention and nutrition. Also serves to orient incoming students to the faculty, programs, and policies of the Department of Dance, and the production and performing resources in the Krannert Center for the Performing Arts. Prerequisite: Major standing in Dance or consent of instructor.</td>
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</tr>
<tr>
<td>DANC 160</td>
<td><strong>Beginning Modern Tech Core</strong></td>
<td>1 TO 3 hours</td>
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<tr>
<td></td>
<td>Elementary technique for majors with emphasis on a conceptual understanding of movement principles and the development of technical skill and performance sensitivity. May be repeated to a maximum of 18 hours. Prerequisite: Major standing in Dance or consent of instructor.</td>
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</tr>
<tr>
<td>DANC 161</td>
<td><strong>Beginning Modern Tech Elect</strong></td>
<td>1 TO 3 hours</td>
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<tr>
<td></td>
<td>Elementary technique for majors with emphasis on a conceptual understanding of movement principles and the development of technical skill and performance sensitivity. May be repeated to a maximum of 18 hours. Prerequisite: Major standing in Dance or consent of instructor.</td>
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<tr>
<td>DANC 162</td>
<td><strong>Improvisation I</strong></td>
<td>1 hours</td>
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<td></td>
<td>Experience in selective, basic processes of movement involvement, both individual and group; special attention to organic, economical bodily use, the dynamics and quality of which are necessary to the activity being performed.</td>
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<tr>
<td>DANC 163</td>
<td><strong>Improvisation II</strong></td>
<td>1 hours</td>
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<tr>
<td></td>
<td>Continuation of DANC 162, with emphasis on expanding bodily activity into various existing or created performing environments; use of sound and music, body coverings, and properties; and special attention to relating these experiences to dance composition. Prerequisite: DANC 162 or consent of instructor.</td>
<td></td>
</tr>
<tr>
<td>DANC 166</td>
<td><strong>Beginning Ballet Tech Core</strong></td>
<td>1 OR 2 hours</td>
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<tr>
<td></td>
<td>Elementary ballet for dance majors; emphasizes placement, refinement of adagio, pirouette, jumps, and connecting steps. May be repeated to a maximum of 8 hours. Prerequisite: Major standing in Dance or consent of instructor.</td>
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</tr>
<tr>
<td>DANC 167</td>
<td><strong>Beginning Ballet Tech Elect</strong></td>
<td>1 OR 2 hours</td>
</tr>
<tr>
<td></td>
<td>Elementary ballet for dance majors; emphasizes placement, refinement of adagio, pirouette, jumps, and connecting steps. May be repeated to a maximum of 8 hours. Prerequisite: Major standing in Dance or consent of instructor.</td>
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</tr>
<tr>
<td>DANC 175</td>
<td><strong>Production in Dance</strong></td>
<td>2 hours</td>
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<tr>
<td></td>
<td>Examines the theoretical and practical aspects of dance production. Includes lighting, costumes, scenery, props, audio, make-up, and management. Commitment outside of scheduled class includes participation in the production of the annual Senior Concert.</td>
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<tr>
<td>DANC 199</td>
<td><strong>Undergraduate Open Seminar</strong></td>
<td>1 TO 5 hours</td>
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<td></td>
<td>May be repeated to a maximum of 9 hours.</td>
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<tr>
<td>DANC 220</td>
<td><strong>Perf Pract Student Works I</strong></td>
<td>1 TO 3 hours</td>
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<tr>
<td></td>
<td>Performance laboratory involving the rehearsal and performance of student works under faculty supervision. Approved for S/U grading only. Prerequisite: Consent of instructor. A maximum of 16 hours of performance credit may be counted toward degree requirements.</td>
<td></td>
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<tr>
<td>DANC 221</td>
<td><strong>Perf Pract I</strong></td>
<td>1 TO 3 hours</td>
</tr>
<tr>
<td></td>
<td>Performance laboratory involving the rehearsal and performance of student works under faculty supervision performed in MFA Thesis concert. Prerequisite: Consent of instructor. A maximum of 16 hours of performance credit may be counted toward degree requirements.</td>
<td></td>
</tr>
<tr>
<td>DANC 222</td>
<td><strong>Perf Pract November I</strong></td>
<td>1 TO 3 hours</td>
</tr>
<tr>
<td></td>
<td>Performance laboratory involving the rehearsal and performance of works by faculty and visiting artists performed in November Playhouse Dance. Prerequisite: Consent of instructor. A maximum of 16 hours of performance credit may be counted toward degree requirements.</td>
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<tr>
<td>DANC 223</td>
<td><strong>Perf Pract Festival I</strong></td>
<td>1 TO 3 hours</td>
</tr>
<tr>
<td></td>
<td>Performance laboratory involving the rehearsal and performance of works by faculty and visiting artists performed in Festival Dance. Prerequisite: Consent of instructor. A maximum of 16 hours of performance credit may be counted toward degree requirements.</td>
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<tr>
<td>DANC 231</td>
<td><strong>Production Practicum II</strong></td>
<td>1 OR 2 hours</td>
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<tr>
<td></td>
<td>Practical experience in the production of dance concerts mounted in the Krannert Center for the Performing Arts. May be repeated to a maximum of 6 hours. (1 hour credit per concert up to 2 hours per term).</td>
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</tr>
<tr>
<td>DANC 232</td>
<td><strong>Lec Dem in the Community</strong></td>
<td>1 OR 2 hours</td>
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</tbody>
</table>

page 237 - Dance
Provides dance majors with diverse performing experiences in the community. Venues will include area schools, nursing homes, and special populations. Students will participate in the creation of lecture-demonstrations which include improvisation and choreography. Participation in all performances is a requirement. Course is intended to be a two-term experience with creation of the lecture-demonstration in the first term and rehearsals/performances during the Spring term. May be repeated to a maximum of 6 hours. Offered for 1 hour in Fall and 2 hours in Spring. Prerequisite: Major standing in Dance or consent of instructor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>DANC 260</td>
<td>Intermediate Modern Tech Core</td>
<td>1 TO 3</td>
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<tr>
<td>DANC 261</td>
<td>Intermediate Modern Tech Elect</td>
<td>1 TO 3</td>
</tr>
<tr>
<td>DANC 262</td>
<td>Composition I</td>
<td>2 hours</td>
</tr>
<tr>
<td>DANC 263</td>
<td>Composition II</td>
<td>2 hours</td>
</tr>
<tr>
<td>DANC 266</td>
<td>Intermediate Ballet Tech Core</td>
<td>1 OR 2</td>
</tr>
<tr>
<td>DANC 267</td>
<td>Intermediate Ballet Tech Elect</td>
<td>1 OR 2</td>
</tr>
<tr>
<td>DANC 268</td>
<td>Music Theory for Dancers</td>
<td>3 hours</td>
</tr>
<tr>
<td>DANC 310</td>
<td>World Dance Forms</td>
<td>1 hours</td>
</tr>
<tr>
<td>DANC 331</td>
<td>Production Practicum III</td>
<td>1 OR 2</td>
</tr>
<tr>
<td>DANC 340</td>
<td>Dancing Black Popular Cult</td>
<td>3 hours</td>
</tr>
<tr>
<td>DANC 341</td>
<td>Asian Am Dance and Performance</td>
<td>3 hours</td>
</tr>
<tr>
<td>DANC 350</td>
<td>Creative Dance for Children</td>
<td>3 hours</td>
</tr>
</tbody>
</table>

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)
Through lecture, discussion and practice, students develop skills to teach elements and concepts of dance to children ages 4-7. Course includes strategies for behavior and time management, spatial transitions, and how to organize and communicate creative concepts clearly and effectively. Students will observe master teaching and apply teaching techniques, acquire lesson plans that form the basis for a creative dance curriculum and the skills to implement them, and participate in all phases of a creative dance curriculum, including informal performance. Same as ARTE 350 and HDFS 361. May be repeated to a maximum of 6 hours. Prerequisite: Consent of instructor.

DANC 360  Int/Adv Modern Tech Core  credit: 1 TO 3 hours.
Progressive development of the concepts in DANC 260 and DANC 261, with emphasis on virtuosity and versatility. May be repeated to a maximum of 18 hours. Prerequisite: Major standing in Dance or consent of instructor; departmental placement.

DANC 361  Int/Adv Modern Tech Elect  credit: 1 TO 3 hours.
Progressive development of the concepts in DANC 260 and DANC 261, with emphasis on virtuosity and versatility. May be repeated to a maximum of 18 hours. Prerequisite: Major standing in Dance or consent of instructor; departmental placement.

DANC 362  Composition III  credit: 2 hours.
Choreography for the experienced student; includes performance of at least one original work. Prerequisite: DANC 263 or consent of instructor.

DANC 366  Int/Adv Ballet Tech Core  credit: 1 OR 2 hours.
Intermediate/Advanced ballet for dance majors; a progressive development of movement concepts and vocabulary in DANC 266 and DANC 267. For dancers of advanced technical level with the ability to execute the ballet vocabulary. May be repeated to a maximum of 8 hours. Prerequisite: Major standing in Dance or consent of instructor; or Departmental placement.

DANC 367  Int/Adv Ballet Tech Elect  credit: 1 OR 2 hours.
Intermediate/Advanced ballet for dance majors; a progressive development of movement concepts and vocabulary in DANC 266 and DANC 267. For dancers of advanced technical level with the ability to execute the ballet vocabulary. May be repeated to a maximum of 8 hours. Prerequisite: Major standing in Dance or consent of instructor; or Departmental placement.

DANC 400  Viewing Dance  credit: 1 hours.
Overview of contemporary dance from the United States, Canada, and Europe focusing on the current works of significant emerging and established choreographers working in the field today. Approved for S/U grading only. May be repeated to a maximum of 4 hours.

DANC 401  Alexander Tech for Dancers  credit: 1 hours.
Introduces the Alexander Technique: a practical method for changing habitual movement patterns which interfere with coordination, ease, and efficiency of movement. The course focuses on learning the principles through hands-on work, readings, discussions, and application to dance. 1-3 individual lessons outside of class required per term. Prerequisite: Major standing in Dance or consent of instructor.

DANC 410  Advanced Jazz Technique  credit: 1 hours.
Continuation of DANC 110, emphasizing the conceptual understanding of the jazz style and development of specific skills necessary for this idiom. May be repeated to a maximum of 4 hours. Prerequisite: Major standing in Dance or DANC 110 or equivalent and consent of instructor.

DANC 415  Tap Dance  credit: 1 hours.
Introduction to basic tap technique for experienced dancers. Emphasis on a conceptual understanding of tap style and the development of the specific skills necessary for performance and teaching. May be repeated to a maximum of 2 hours. Prerequisite: Major standing in Dance or consent of instructor.

DANC 420  Perf Pract Student Works II  credit: 1 TO 3 hours.
Performance laboratory involving the rehearsal and performance of student works under faculty supervision. Approved for S/U grading only. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.

DANC 421  Perf Pract II  credit: 1 TO 3 hours.
Performance laboratory involving the rehearsal and performance of student works under faculty supervision performed in MFA Thesis concert. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.

DANC 422  Perf Pract November II  credit: 1 TO 3 hours.
Performance laboratory involving the rehearsal and performance of works by faculty and visiting artists performed in November Playhouse Dance. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.

DANC 423  Perf Pract Festival II  credit: 1 TO 3 hours.
Performance laboratory involving the rehearsal and performance of works by faculty and visiting artists performed in Festival Dance. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.

DANC 425  Dance Internship  credit: 1 TO 4 hours.
Supervised field experience in community and/or professional organizations in a variety of danced-related areas. Provides students with work experience and exposure to professional situations. Written and/or video documentation and department presentation of internship activities required. Approved for S/U grading only. May be repeated to a maximum of 6 hours. Prerequisite: Major standing in Dance and consent of instructor.

DANC 431  Production Practicum IV  credit: 1 OR 2 hours.
Practical experience in all aspects of the production of dance concerts mounted in the Krannert Center for the Performing Arts and within the Department of Dance. May be repeated to a maximum of 6 hours. (1 hour credit per concert up to 2 hours per term). Prerequisite: DANC 131 or DANC 231, or equivalent and consent of instructor.

DANC 435  Dance Repertory  credit: 1 OR 2 hours.
Experience in learning, rehearsing, and perfecting concert dance pieces under the direction of experienced choreographers. May be repeated to a maximum of 16 hours. Prerequisite: Major standing in Dance; consent of instructor.

DANC 440  Dance History I  credit: 3 hours.
Introduction to major artistic movements in dance history from ancient Greece through the 20th century. Goal of the course is to gain a broad understanding of dance in relation to socio-political ideologies of gender, race, sexuality, and national identities. Prerequisite: Major standing in Dance or consent of instructor.

DANC 441  Dance History II  credit: 3 hours.
Survey of critical approaches in dance studies including feminist theory, poststructural, and postcolonial theory, historiography, and ethnographic research methods. Course topics will cover a variety of theatrical, popular, and social dance practices. Course may be repeated to a maximum of 6 undergraduate hours and 9 graduate hours. Prerequisite: DANC 440 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

DANC 445  Dance Kinesiology and Somatics  credit: 4 hours.
Introduction to human anatomy and kinesiology, specifically as applied to dance; introduction to the field of Somatics; approaches to improving the use of the body; exploration of the connections between the body, the mind, and movement. Prerequisite: Major standing in dance or consent of instructor.

DANC 450  Teaching Workshop  credit: 3 hours.
Methods and approaches to the teaching of dance technique in the modern, ballet, and jazz idioms. Prerequisite: Junior standing in Dance or consent of the instructor.

DANC 451  Ind Study and Special Topics  credit: 1 TO 4 hours.
Special projects in research or creative investigation taught on an individual or class basis. May be repeated to a maximum of 8 hours. Prerequisite: Junior standing in Dance or consent of instructor.

DANC 460  Advanced Modern Tech Core  credit: 1 TO 3 hours.
Modern technique for advanced graduate students. May be repeated to a maximum of 16 hours. Prerequisite: Major standing in dance or consent of instructor; or departmental placement.

DANC 461  Advanced Modern Tech Elect  credit: 1 TO 3 hours.
Modern technique for advanced graduate students. May be repeated to a maximum of 16 hours. Prerequisite: Major standing in dance or consent of instructor; or departmental placement.

DANC 462  Composition Workshop  credit: 2 hours.
Structured creative utilization of formal choreographic elements in the creation, rehearsal, staging, and performance of original dance works. Approved for S/U grading only. Prerequisite: Graduate standing in dance or consent of instructor.

DANC 464  Composer-Chor Workshop  credit: 2 hours.
For experienced composers and choreographers; explores the many relationships between musical composition and choreography. Same as MUS 471. Prerequisite: For dance majors, DANC 263 or consent of instructor; for music majors, MUS 106 or equivalent, other compositional experience, and consent of instructor.

DANC 465  Screendance  credit: 3 hours.
Provides a comprehensive approach, from camera use to editing techniques, leading to a practical ability to develop and produce video projects on a basic level. Course focuses on developing choreographic projects designed specifically for the video/film format. Prerequisite: DANC 263.

**DANC 466    Advanced Ballet Tech Core**    credit: 1 TO 3 hours.
Ballet for advanced students. May be repeated to a maximum of 16 hours. Prerequisite: Major standing in dance or consent of instructor or departmental placement.

**DANC 467    Advanced Ballet Tech Elect**    credit: 1 TO 3 hours.
Ballet for advanced students. May be repeated to a maximum of 16 hours. Prerequisite: Major standing in dance or consent of instructor or departmental placement.

**DANC 495    Senior Career Seminar**    credit: 1 hours.
Addresses survival strategies and the transition from academe to the profession. Course content includes research and discussion of career possibilities in performance, choreography, teaching, community dance work, therapy, and the dance-related fields of health/fitness/recreation. Students will research individualized projects in an area of interest. 1 undergraduate hour. No graduate credit. Prerequisite: Senior standing in Dance.

**DANC 499    Senior Thesis Project**    credit: 1 TO 3 hours.
The design, execution, and production of a culminating choreographic/performance project, 1 to 3 undergraduate hours. No graduate credit. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: DANC 362 and senior standing in Dance.

**DANC 510    Grad Seminar/Special Topics**    credit: 4 hours.
Survey of professional organizations, publications, scholarly resources and trends culminating in student presentation of projects examining current issues in the field. May be repeated to a maximum of 12 hours. Prerequisite: Graduate standing in Dance.

**DANC 530    Somatics in Dance Training**    credit: 3 hours.
Addresses current issues and trends in the teaching of dance technique, with a focus on the incorporation of dance science and somatics into dance training. Course includes reading, writing, discussion, teaching observation, and experiential work. Prerequisite: Completion of DANC 445 and DANC 450, or consent of instructor.

**DANC 531    MFA Career Seminar**    credit: 1 hours.
A three-term career preparation course that will include preparation of marketing materials, such as press kits and resumes, and introduction to field resources. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Graduate standing in dance.

**DANC 532    Digital Media for Dancers**    credit: 2 hours.
Survey of the manipulation of digital images, video, and audio, with an emphasis on how these technologies are valuable to the dancer as both creative and marketing tools. Prerequisite: Graduate standing in Dance or consent of instructor.

**DANC 541    Contemp Directions in Dance**    credit: 4 hours.
A critical approach to 20th century dance with emphasis on the evolution of ideas that have influenced and shaped the dance of today. Prerequisite: Dance 440.

**DANC 550    Advanced Research in Dance**    credit: 1 TO 4 hours.
Advanced Independent Research in an opportunity for exceptional returning level professional MFA candidates in Dance to design and implement an in-depth examination of a creative, historical, contemporary, philosophical, technological, or educational facet of dance under the guidance of a faculty advisor. May be repeated for a maximum of 12 graduate hours. Prerequisite: Consent of instructor, advisor, and graduate program director.

**DANC 551    Supervised Teaching**    credit: 2 TO 4 hours.
Practical teaching experience under the supervision of a faculty member; weekly conference devoted to evaluation and planning. Teaching areas include major and non-major university courses and classes for community adults and children. May be repeated to a maximum of 8 hours with approval. Prerequisite: Graduate standing in dance.

**DANC 552    Hist & Theory of Postmod Dance**    credit: 4 hours.
1) Traces the development of Performance as Art from the Futurists in 1909 to the present. 2) Investigates the influences of Performance as Art on the development of Postmodern dance in the 1960’s. 3) Offers an overview of contemporary practices in western theatrical dance from the 1960’s to the present with an emphasis on major stylistic trends, social and cultural contexts, and theoretical issues. May not be repeated for credit. Prerequisite: DANC 440.

**DANC 560    Advanced Physical Practice**    credit: 1.5 TO 4 hours.
MFA candidates are required to maintain a demonstrated level of technical proficiency through a consistent graduate level physical practice. The physical practice of each candidate is determined through advisement and may include ballet technique, modern technique, Alexander Technique, yoga, or additional somatic practices offered in the department. Offered for S/U grading only. May be repeated to a maximum of 24 hours. Prerequisite: MFA candidate in dance.

DANC 562  **Graduate Composition II**  credit: 2 hours.
Includes reading, writing, and discussion. Students will examine the creative process, the conventions that form choreographers’ works, and the historical situations from which specific dance works spring. Students will produce works in specific contexts outside the standard theatre setting. They will be responsible for all promotional and production aspects of a project that will be presented to the public. Prerequisite: Dance 462.

DANC 575  **Production for Dance**  credit: 2 hours.
Serves as a review of the principles of dance production, design and technical theater and a forum to discuss and work through conceptual ideas related to the culminating thesis project (DANC 599). Course content will include: lectures and demonstrations conducted by the instructor or guests, an orientation to production resources in the Krannert Center, an introduction to design perspectives for dance, and assignments intended to train the eye to observe design elements in all types of production. Prerequisite: Graduate standing in dance.

DANC 581  **Aesthetics and Curriculum**  credit: 4 hours.
Same as CI 581. See CI 581.

DANC 598  **Creative Thesis Project**  credit: 4 hours.
The design, implementation, and completion of a culminating creative project in choreography and/or performance. May be repeated to a maximum of 8 hours. Approved for S/U grading only. Prerequisite: DANC 575 and 28 hours of graduate work in dance, including 4 hours in choreography.
East Asian Language and Culture

East Asian Languages and Cultures
Head of Department: Karen Kelsky
Department Office: 2090 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 244-1432
www.ealc.uiuc.edu

EALC 101  Introduction to East Asian Art  credit: 4 hours.
Same as ARTH 114. See ARTH 114.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

EALC 120  East Asian Civilizations  credit: 3 hours.
Same as HIST 120. See HIST 120.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

EALC 122  History East Asian Religions  credit: 3 hours.
Same as RLST 122. See RLST 122.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

EALC 130  The Chinese Language  credit: 3 hours.
An introduction to the sociolinguistic study of the Chinese language. Approved for both letter and S/U grading. This course does not fulfill the campus foreign language requirement.

EALC 132  Zen  credit: 3 hours.
Same as RLST 132. See RLST 132.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

EALC 135  Understanding EA Culture & Soc  credit: 3 hours.
Introduction to the languages, literatures, popular cultures, and societies of China, Japan and Korea focusing on the ways in which these East Asian cultures contribute to the general understanding of humanity in the global context. Credit is not given for both EALC 135 and HIST 120.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

EALC 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

EALC 220  Traditional China  credit: 3 hours.
Same as HIST 220. See HIST 220.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

EALC 221  Modern China  credit: 3 hours.
Same as HIST 221. See HIST 221.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

EALC 222  Chinese Thght Confucius to Mao  credit: 3 hours.
Same as HIST 222 and RLST 224. See HIST 222.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

EALC 226  **Premodern Japanese History**  credit: 3 hours.

Same as HIST 226. See HIST 226.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

EALC 227  **Modern Japanese History**  credit: 3 hours.

Same as HIST 227. See HIST 227.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

EALC 240  **Chinese Civilization**  credit: 3 hours.

Introduction to the historical development of Chinese civilization. Emphasis will be on broad themes and the connections among cultural values, social institutions, political structures, and contacts with outsiders. Visual and literary evidence will be stressed.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

EALC 250  **Intro to Japanese Culture**  credit: 3 hours.

Topical introduction to Japanese cultural and aesthetic life with attention to cultural and aesthetic patterns as they are reflected in literature, language, and the arts.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

EALC 266  **Intro to East Asian Cinema**  credit: 3 hours.

Same as CINE 266. See CINE 266.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

EALC 275  **Masterpieces of East Asian Lit**  credit: 3 hours.

Study of major works in the literary traditions of China and Japan, including haiku, noh, Tale of Genji, kabuki, Tang poetry, Dream of the Red Chamber, Ming theater, and the colloquial tale. Same as CWL 275. No knowledge of Chinese or Japanese language required.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

EALC 285  **Intro to Korea Through Film**  credit: 3 hours.

Course uses film, literary, and ethnographic works to explore the impact of Post-Colonial (1945-present) socioeconomic and cultural transformation on the personal and collective South Korean experience. Same as ANTH 285.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

EALC 287  **Introduction to Buddhism**  credit: 3 hours.

Same as RLST 287. See RLST 287.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

EALC 288  **Contemporary East Asia**  credit: 3 hours.

Introduction to aspects of daily life in East Asia in relation to local and extra-local political and economic structures and transformations. Same as ANTH 287.

EALC 305  **Japan Lit in Translation I**  credit: 3 hours.
Survey of Japanese literature from earliest times to 1600; readings in prose, poetry, and drama in English translation. Same as CWL 311.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

**EALC 306  Japan Lit in Translation II  credit: 3 hours.**
Survey of Japanese literature from 1600 to recent times; readings in prose, poetry, and drama in English translation; and lectures and papers. Same as CWL 312.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

**EALC 307  Classical Chinese Lit  credit: 3 hours.**
Surveys Chinese literary works from the classical tradition (history, philosophy, poetry, literary criticism) with attention to intellectual and artistic values. Same as CWL 307. No knowledge of Chinese is required.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

**EALC 308  Chinese Popular Lit  credit: 3 hours.**
Surveys Chinese popular literary works written in the vernacular language (short story, novel, and drama), with attention to cultural and artistic values. Same as CWL 308. No knowledge of Chinese is required.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

**EALC 319  Women in Japanese Lit  credit: 3 hours.**
Critical study of Japanese women's history as represented in literature, emphasizing religio-social-literary significance, male views of women, female roles, and universal experience of growing up female. Readings and discussion. Same as CWL 319 and GWS 319. No knowledge of Japanese required.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

**EALC 333  Language in Japanese Society  credit: 3 hours.**
Examines aspects of language use in contemporary Japanese society, including cross-cultural communication, social/regional variations, and problems surrounding linguistic/ethnic minorities in Japanese society. Prerequisite: Completion of JAPN 202 or equivalent.

**EALC 343  Gov & Pol of China  credit: 3 hours.**
Same as PS 343. See PS 343.

**EALC 344  Gov & Pol of Japan  credit: 3 hours.**
Same as PS 344. See PS 344.

**EALC 361  Women in East Asia  credit: 3 hours.**
Interdisciplinary inquiry into the cultural and social patterns that have shaped women's lives in China, Japan, and Korea. Same as GWS 361.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

**EALC 362  Popular Culture China & Japan  credit: 3 hours.**
Exploration of the popular cultures of China and Japan in both the present day and earlier periods using a variety of documentary, fictional, and visual sources. Connections and comparisons between the past and the contemporary will be stressed. No previous study of Chinese and Japanese language or culture is required.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

EALC 365 **Contemporary Korean Society**  credit: 3 hours.
Introduces contemporary Korean society: the twentieth century struggle of Korea for an individual identity; the Korean road to modernization and its significance for the United States and the developing world. Same as SOC 365.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

EALC 367 **History of Korea**  credit: 3 hours.
Historical examination of the Korean experience, from the earliest times to the present day: basic political, social, economic patterns; examination of the cultural and intellectual tradition; Korea's historical role in Asia; the Korean colonial experience; Korea in the modern world. Same as HIST 325.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

EALC 370 **Korean Lit in English**  credit: 3 hours.
Historical survey of Korean literature. Class will read and discuss English translations of representative works of Korean poetry and fiction as well as critical studies. Same as CWL 372.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

EALC 390 **Individual Study**  credit: 2 TO 4 hours.
Directed readings in the languages and literatures of East Asia. The area selected depends on the student's interest. Prerequisite: Consent of instructor.

EALC 391 **Honors Tutorial**  credit: 2 TO 4 hours.
Tutorial in the civilizations of East Asia. The country and discipline depend on student interests. All students submit a substantial paper. May be repeated to a maximum of 6 hours. Prerequisite: Consent of instructor.

EALC 397 **Diplomatic History of Korea**  credit: 3 hours.
Study of the history of Korea from diplomatic, foreign policy and security perspectives, from the mid 19th century to the present. Within this framework, five significant periods are covered: (1) western incursion into East Asia and its impact; (2) Japan's response to western incursion and how it impacted Korea; (3) US and Soviet occupation of Korea and how it contributed to its permanent division; (4) Cold War relationship in East Asia; and (5) the post Cold War.

EALC 398 **Colloquium in EALC**  credit: 3 hours.
May be repeated to a maximum of 6 hours. Prerequisite: Junior standing.

EALC 401 **Chinese Art**  credit: 3 OR 4 hours.
Same as ARTH 401. See ARTH 401.

EALC 402 **Japanese Art**  credit: 3 OR 4 hours.
Same as ARTH 402. See ARTH 402.

EALC 403 **Word and Image in Chinese Art**  credit: 3 OR 4 hours.
Same as ARTH 403. See ARTH 403.

EALC 411 **The Chinese Novel**  credit: 3 OR 4 hours.
Reading and analysis of representative pieces of Chinese fiction from the fourth century B.C. to 1900 with emphasis on the development of Chinese fiction, its place in the literary tradition, and its role in society. Same as CWL 411. 3 undergraduate hours. 4 graduate hours. No knowledge of Chinese is required.

EALC 412 **Mod Chinese Lit in Translation**  credit: 3 OR 4 hours.
Reading and analysis of representative selections from Chinese literature since the May 4 Movement (early 20th century), with special attention to the relationship between literature and ideology in twentieth-century China. Same as CWL 412. 3 undergraduate hours. 4 graduate hours. No knowledge of Chinese is required.

EALC 413 **Premodern Chinese Drama**  credit: 3 OR 4 hours.
Survey of Chinese drama from the 12th century through the early 20th century. Students will read major works of Chinese drama in English translation, as well as works on stagecraft, performance styles, the social functions of drama and the social role of actors. Videotaped contemporary performances of traditional drama will be viewed. Same as CWL 416 and THEA 488. 3 undergraduate hours. 4 graduate hours.

**EALC 415  Mod Japan Lit in Translation**  credit: 2 TO 4 hours.
Critical study of selected 20th century writers with an emphasis on cultural background, world view, human relationships, aesthetic theories, Japanese and Western traditions, and universal literary issues. Same as CWL 415. 3 undergraduate hours. 2 or 4 graduate hours. Requires no knowledge of Japanese; readings and films. Prerequisite: Junior standing or consent of instructor.

**EALC 420  China Under the Ch'ing Dynasty**  credit: 2 TO 4 hours.
Same as HIST 420. See HIST 420.

**EALC 421  Soc-Econ Hist Modern China**  credit: 2 TO 4 hours.
Same as HIST 422. See HIST 422.

**EALC 426  Early Modern Japan**  credit: 3 OR 4 hours.
Same as HIST 426. See HIST 426.

**EALC 427  Twentieth-Century Japan**  credit: 3 OR 4 hours.
Same as HIST 427. See HIST 427.

**EALC 428  Japan at War and Peace**  credit: 3 OR 4 hours.
Examination of the changing ways the Japanese have imagined war and peace in the twentieth century as documented in novels, memoirs, essays, plays, films, journalism, and other works. Same as CWL 428. 3 undergraduate hours. 3 or 4 graduate hours. Graduate students taking this course for 4 hours credit will be expected to write the same papers as undergraduates. In addition, graduate students will be expected to produce a term paper that will be due at the time of the final exam. Prerequisite: Junior standing or consent of instructor.

**EALC 430  Intro to East Asian Ling**  credit: 3 OR 4 hours.
Same as LING 430. See LING 430.

**EALC 463  Drama in Premodern Japan**  credit: 3 OR 4 hours.
Introduction to Japanese theater and drama from earliest times through the nineteenth century. Genres studied include Noh, Bunraku, and Kabuki. Readings in English supplemented by films and videotapes. Same as CWL 470, RLST 485, and THEA 486. 3 undergraduate hours. 3 or 4 graduate hours. No knowledge of Japanese required. Prerequisite: At least one course on Japanese culture or consent of instructor.

**EALC 464  Modern Japanese Drama**  credit: 3 OR 4 hours.
Modern Japanese culture as seen through drama. Special emphasis is given to the period after World War II. Readings in English supplemented by films and videotapes. Same as CWL 482, RLST 464, and THEA 487. 3 undergraduate hours. 3 or 4 graduate hours. No knowledge of Japanese required. Prerequisite: At least one course on Japanese culture or consent of instructor.

**EALC 465  Japanese Cinema**  credit: 3 OR 4 hours.
Same as CINE 466. See CINE 466.

**EALC 469  The Ethnography of Korea**  credit: 3 OR 4 hours.
Survey of the English-language anthropological study and representation of Korea, situating this literature topically, historically, theoretically, and methodologically. Same as ANTH 489. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 103 or ANTH 230, or EALC 285 or EALC 365 or EALC 367, or consent of instructor.

**EALC 475  Discourse&Grammar in EA Langs**  credit: 3 OR 4 hours.
Examines how the regularities in language use that we think of as ‘grammar’ emerge from communicative needs in discourse. Focuses on analysis of grammatical phenomena in East Asian languages. Requires advanced knowledge of Chinese, Japanese, or Korean. 3 undergraduate hours. 4 graduate hours. Prerequisite: LING 430; junior standing or consent of instructor.

**EALC 476  Classical Chinese Thought**  credit: 3 OR 4 hours.
Inquiry into the major schools of Chinese thought in the Classical Period through the Han (206 B.C. - A.D. 220): Confucianism, Taoism and Legalism. Topics such as the concept of history, military thought and logic will be covered. Readings are in English. Same as CWL 478 and HIST 425. 3 undergraduate hours. 4 graduate hours. Prerequisite: One 200 or 300-level course on Chinese culture or consent of instructor.

**EALC 484  Buddhist Meditation**  credit: 3 hours.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EALC 485</td>
<td><strong>Family and Gender in China</strong></td>
<td>3 OR 4</td>
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<td></td>
<td>Same as ANTH 485. See ANTH 485.</td>
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<tr>
<td>EALC 487</td>
<td><strong>Ethnicity in China</strong></td>
<td>3 OR 4</td>
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<td>Same as ANTH 487. See ANTH 487.</td>
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<tr>
<td>EALC 490</td>
<td><strong>Individual Study</strong></td>
<td>2 TO 12</td>
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<td>Supervised individualized study of a topic not covered by regular course offerings. The topic must be approved by the instructor. 3 to 12 undergraduate hours. 2 to 12 graduate hours. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.</td>
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<tr>
<td>EALC 495</td>
<td><strong>Topics in Asian Religions</strong></td>
<td>3 OR 4</td>
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<td>Same as RLST 495. See RLST 495.</td>
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<tr>
<td>EALC 500</td>
<td><strong>Proseminar in EALC</strong></td>
<td>4</td>
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<td>Interdisciplinary introduction for first-term East Asian Languages and Cultures graduate students to western-language writings on East Asia that have been important to modern scholarship on the region. The proseminar will cover the three cultures of the region in an interdisciplinary fashion, focusing on the methods of various disciplines in their treatment of East Asia. Method refers both to the kinds of materials studies, and the theory and tools used in research.</td>
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<tr>
<td>EALC 501</td>
<td><strong>Seminar in Chinese Art</strong></td>
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<td>Same as ARTH 501. See ARTH 501.</td>
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<tr>
<td>EALC 520</td>
<td><strong>Problems in Chinese History</strong></td>
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<td>Same as HIST 520. See HIST 520.</td>
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<tr>
<td>EALC 521</td>
<td><strong>Seminar in Chinese Literature</strong></td>
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<td>Examination of Chinese literature from a variety of genres and historical periods intended to prepare students for independent work in literary criticism and analysis. Readings include both primary texts and important works of secondary scholarship. Students will produce a term paper based on independent research. May be repeated to a maximum of 8 hours with approval.</td>
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<td>EALC 522</td>
<td><strong>Seminar in Chinese History</strong></td>
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<td>Same as HIST 521. See HIST 521.</td>
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<td>EALC 526</td>
<td><strong>Problems in Japanese History</strong></td>
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<td>Same as HIST 526. See HIST 526.</td>
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<td>EALC 527</td>
<td><strong>Seminar in Japanese History</strong></td>
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<td>Same as HIST 527. See HIST 527.</td>
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<tr>
<td>EALC 531</td>
<td><strong>Seminar in Japanese Lit</strong></td>
<td>4</td>
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<td>Examination of Japanese literature from a variety of genres and historical periods designed to prepare advanced students for independent work in literary criticism and analysis. Texts in the vernacular are read and discussed from a variety of critical perspectives. Students produce a term paper based on current scholarship in the field of Japanese literary studies. May be repeated in same or subsequent terms as topics vary to a maximum of 12 hours. Prerequisite: A reading knowledge of Japanese.</td>
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<td>EALC 550</td>
<td><strong>Seminar in EALC</strong></td>
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<td>Seminar on selected topics. Topic varies with instructor. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.</td>
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<tr>
<td>EALC 560</td>
<td><strong>East Asian Language Pedagogy</strong></td>
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<td>Course is for teachers of Japan, Chinese, or Korean language who wish to improve their teaching skills and learn more about second and foreign language acquisition specific to the East Asian Language context. Besides reviewing research on language teaching methodology and curriculum development, students will observe each other conduct practice classes and analyze videotapes of class sessions. Undergraduates may enroll with consent of instructor and the Graduate College. Prerequisite: Native or near-native fluency in Japanese, Chinese, or Korean.</td>
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<tr>
<td>EALC 562</td>
<td><strong>Topics in Korean History</strong></td>
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<td>Examination of the historiography of Korea, and of the major issues under debate in the history of Korea. Same as HIST 522. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in EALC, History, or other related disciplines; or consent of instructor.</td>
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</tbody>
</table>
EALC 584  **Theories in SLA**  credit: 4 hours.
Same as CI 584, EIL 584, EPSY 563, FR 584, GER 584, ITAL 584, LING 584, PORT 584, SLS 584, and SPAN 584. See SPAN 584.

EALC 588  **Sem Second Lang Learn**  credit: 4 hours.
Same as EIL 590, FR 588, GER 588, ITAL 588, LING 588, PORT 588, SLS 588, and SPAN 588. See SPAN 588.

EALC 590  **Individual Study and Research**  credit: 2 TO 12 hours.
Supervised individual investigation or study of a topic not covered by regular course offerings. The topic selected by the student and the proposed plan of study must be approved by the adviser and the instructor. May be repeated. Prerequisite: Consent of instructor.

EALC 599  **Thesis Research**  credit: 0 TO 16 hours.
Research and guidance in writing theses for advanced degrees. Approved for S/U grading only. May be repeated to a maximum of 16 hours. Prerequisite: Satisfactory completion of the preliminary examinations.
**ECE 101  Exploring Digital Info Technol**  credit: 3 hours.
Principles and processes for the development of information technologies: digital music, digital images, digital logic, data compression, error correction, information security, and communication networks. Laboratory for design of hardware and software, and experiments in audio and image processing. Intended for students outside the College of Engineering. Credit is not given to Computer or Electrical Engineering majors.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

**ECE 110  Intro Elec & Computer Engrg**  credit: 4 hours.
Integrated introduction to selected fundamental concepts and principles in electrical and computer engineering: circuits, electromagnetics, communications, electronics, controls, and computing. Laboratory experiments and lectures focus on a design and construction project, such as an autonomous moving vehicle. Prerequisite: Credit or concurrent registration in MATH 220 or MATH 221.

**ECE 190  Intro to Computing Systems**  credit: 4 hours.
Bits, binary representations, digital logic structures, the von Neumann computing model, an example instruction set, machine and assembly language programming, machine-level input/output, subroutines, the C programming language, variables and operators, control constructs, functions in C, pointers and arrays, input/output in C, recursion, and simple data structures. Credit is not given for both ECE 190 and CS 125. Prerequisite: ECE 110.

**ECE 199  Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

**ECE 200  Seminar**  credit: 0 hours.
Discussions of educational programs, career opportunities, and other topics in electrical and computer engineering. Approved for S/U grading only. For Computer Engineering and Electrical Engineering majors only.

**ECE 205  Elec & Electronic Circuits**  credit: 3 hours.
Basic principles of circuit analysis, transient analysis, AC steady-state analysis, introduction to semiconductor devices and fabrication, digital logic circuits, op-amps, and A/D and D/A conversion. Credit is not given to Computer or Electrical Engineering majors. Prerequisite: PHYS 212.

**ECE 206  Elec & Electronic Circuits Lab**  credit: 1 hours.
Laboratory instruments and basic measurement techniques, electric circuits, CMOS logic circuits, DTL and TTL circuits, and op-amps. Credit is not given to Computer or Electrical Engineering majors. Prerequisite: PHYS 212; concurrent registration in ECE 205.

**ECE 210  Analog Signal Processing**  credit: 4 hours.
Introduction to analog signal processing, with an emphasis on underlying concepts from circuit and system analysis: linear systems, review of elementary circuit analysis, differential equation models of linear circuits and systems, Laplace transform, convolution, stability, phasors, frequency response, Fourier series, Fourier transform, active filters, and AM radio. Credit is not given for both ECE 210 and ECE 211. Prerequisite: ECE 110 and PHYS 212; credit or concurrent registration in MATH 285 or MATH 286.

**ECE 211  Analog Circuits & Systems**  credit: 2 hours.
Introduction to concepts from circuit and system analysis: linear systems, review of elementary circuit analysis, op amps, transient analysis, differential equation models of linear circuits and systems, and Laplace transform. Credit is not given for both ECE 211 and ECE 210. Prerequisite: ECE 110 and PHYS 212; credit or concurrent registration in MATH 285 or MATH 286.

**ECE 280  Biomedical Imaging**  credit: 3 hours.
Introduction to the physics and engineering principles associated with magnetic resonance, ultrasound, computed tomography, and nuclear imaging. Same as BIOE 280. Prerequisite: MATH 285 or MATH 286.

**ECE 290  Computer Engineering I**  credit: 3 hours.
Introduction to digital logic and computer systems. Representation of information, combinational network analysis and design, sequential network analysis and design, computer organization and control. Laboratory for design and simulation of digital systems. Credit is not given for both ECE 290 and CS 231. Prerequisite: Credit or concurrent registration in ECE 190.

**ECE 297  Individual Study  credit: 1 hours.**

Individual projects. Approved written application to department as specified by department or instructors is required. Approved for both letter and S/U grading. May be repeated in separate terms to a maximum of 2 hours. Prerequisite: Consent of instructor.

**ECE 307  Techniques for Engrg Decisions  credit: 3 hours.**

Modeling of decisions in engineering work and the analysis of models to develop a systematic approach to making decisions. Fundamental concepts in linear and dynamic programming, probability theory, and statistics. Resource allocation, logistics, scheduling, sequential decision making, siting of facilities, investment decisions, application of financial derivatives, and other problems for decision making under uncertainty. Case studies from actual industrial applications illustrate real-world decisions. Prerequisite: ECE 210; credit or concurrent registration in ECE 313.

**ECE 313  Probability with Engrg Applic  credit: 3 hours.**

Introduction to probability theory with applications to engineering problems such as the reliability of circuits and systems to statistical methods for hypothesis testing, decision making under uncertainty, and parameter estimation. Same as MATH 362. Credit is not given for both ECE 313 and MATH 461. Prerequisite: ECE 210.

**ECE 316  Engineering Ethics  credit: 3 hours.**

Ethical issues in the practice of engineering: safety and liability, professional responsibility to clients and employers, whistle-blowing, codes of ethics, career choice, and legal obligations. Philosophical analysis of normative ethical theories. Case studies. Same as PHIL 316. Credit is not given for both ECE 316 and CS 210. Junior standing is required. Prerequisite: RHET 105.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Advanced Composition

**ECE 317  ECE Technology & Management  credit: 3 hours.**

Provides a basic understanding of electrical and computer engineering concepts applicable to technology management. Basic circuit components, dc fundamentals, ac fundamentals, semiconductors, operational amplifiers, device fabrication, power distribution, digital devices, and computer architecture (including microprocessors). Intended for the Business Majors in the Technology and Management program. Credit is not given to Computer or Electrical Engineering majors. Prerequisite: One of MATH 220, MATH 221, MATH 234.

**ECE 328  Computer Solutions EM Probs  credit: 1 hours.**

Solution of selected electromagnetics problems at the ECE 329 level using personal computers. Prerequisite: Credit or concurrent registration in ECE 329.

**ECE 329  Fields and Waves I  credit: 3 hours.**

Elementary electromagnetic field theory as summarized in Maxwell's equations for time-varying fields in integral and differential forms; energy storage; static and quasistatic fields; time-domain analysis of waves. Prerequisite: ECE 205 or ECE 210.

**ECE 361  Digital Communications  credit: 3 hours.**

Addresses the reliable communication of one bit of information over three types of channels: additive Gaussian noise, wireline, and wireless. Emphasis is placed on the impact of bandwidth and power on the data rate and reliability, using discrete-time models. Technological examples are used as case studies. Prerequisite: ECE 210 and ECE 313.

**ECE 385  Digital Systems Laboratory  credit: 2 hours.**

Introduction to the experimental analysis and synthesis of digital networks, including the use of a microcomputer as a controller. Prerequisite: ECE 110 and ECE 290.

**ECE 390  Computer Engineering II  credit: 3 hours.**

Design and development of assembly language programs; input-output, interrupts, and multitasking; introduction to data structures and graphics; ethical and social issues in computing; laboratory assignments on real-time data acquisition and device control. Credit is not given for both ECE 390 and CS 232. Prerequisite: ECE 290 or CS 231.

**ECE 391  Computer Systems Engineering  credit: 3 hours.**

Introduction to the concepts and abstractions central to the development of modern computing systems, with an emphasis on the systems software that controls interaction between devices and other hardware and application programs. Material includes input-output semantics, synchronization, interrupts, multitasking, virtualization of abstractions. Emphasis on learning to operate effectively in teams. Credit is not given for both ECE 391 and CS 241. Prerequisite: ECE 290 or CS 231.

**ECE 395  Advanced Digital Projects Lab  credit: 2 OR 3 hours.**
Planning, designing, executing, and documenting a microcomputer-based project. Hardware is emphasized but the special projects required of student may also require an equal emphasis on software. Prerequisite: ECE 385.

ECE 396  **Honors Project**  credit: 1 TO 4 hours.
Special project or reading course for James Scholars in engineering. May be repeated. Prerequisite: Consent of instructor.

ECE 397  **Individual Study in ECE**  credit: 0 TO 4 hours.
Individual Projects. Approved written application to department as specified by department or instructor is required. Approved for both letter and S/U grading. May be repeated. Prerequisite: Consent of instructor.

ECE 398  **Special Topics in ECE**  credit: 0 TO 4 hours.
Subject offerings of new and developing areas of knowledge in electrical and computer engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

ECE 399  **Honors Seminar**  credit: 1 TO 4 hours.
Special lecture sequences and/or discussion groups arranged each term to bring James Scholars in engineering into direct contact with the various aspects of engineering practices and philosophy. For Computer Engineering and Electrical Engineering majors with senior standing. Prerequisite: Consent of instructor.

ECE 402  **Electronic Music Synthesis**  credit: 3 hours.
Historical survey of electronic and computer music technology; parameters of musical expression and their codification; analysis and synthesis of fixed sound spectra; time-variant spectrum analysis/synthesis of musical sounds; algorithms for dynamic sound synthesis. Prerequisite: MUS 103, ECE 290, and ECE 410.

ECE 403  **Audio Engineering**  credit: 3 hours.
Review of resonance and wave phenomena; acoustics of rooms and auditoriums; artificial reverberation and sound localization/spatialization; loudspeakers, enclosures, and microphones; topics in digital audio. Prerequisite: ECE 290, ECE 410, and ECE 473.

ECE 410  **Digital Signal Processing I**  credit: 4 hours.

ECE 411  **Computer Organization & Design**  credit: 4 hours.
Basic computer organization and design: integer and floating-point computer arithmetic, control unit design, pipelining, system interconnect, memory organization, I/O design, reliability/performance evaluation; laboratory for computer design implementation, simulation, and layout. Credit is not given toward graduate degrees in Electrical and Computer Engineering. Prerequisite: ECE 391 or CS 241.

ECE 412  **Microcomputer Laboratory**  credit: 3 hours.
Design, construction, and use of a small general-purpose computer with a micro-processor CPU; MSI and LSI circuits used extensively; control panel, peripheral controllers, control logic, central processor, and programming experiments. Open lab format. Prerequisite: ECE 385; ECE 391 or CS 232. Recommended: Credit or concurrent registration in ECE 411.

ECE 414  **Biomedical Instrumentation**  credit: 3 hours.
Same as BIOE 414. See BIOE 414.

ECE 415  **Biomedical Instrumentation Lab**  credit: 2 hours.
Same as BIOE 415. See ECE 415.

ECE 416  **Biosensors**  credit: 3 hours.
Presents underlying engineering principles used to detect small molecules, DNA, proteins, and cells in the context of applications in diagnostic testing, pharmaceutical research, and environmental monitoring. Covers biosensor approaches including electrochemistry, fluorescence, acoustics, and optics, aspects of selective surface chemistry including methods for biomolecule attachment to transducer surfaces; characterization of biosensor performance; blood glucose detection, fluorescent DNA microarrays; label-free biochips; bead-based assay methods. Students analyze case studies of commercial biosensor systems. Prerequisite: ECE 329.

ECE 417  **Multimedia Signal Processing**  credit: 4 hours.
Basic characteristics of speech and image signals; important analysis and synthesis tools for multimedia signal processing including subspace methods, Bayesian networks, hidden Markov models, and factor graphs; applications to biometrics (person identification),
human-computer interaction (face and gesture recognition and synthesis), and audio/visual databases (indexing and retrieval). Emphasis is on a set of MATLAB machine problems which provide hands-on experience. Prerequisite: ECE 313 and ECE 410.

ECE 418  Image & Video Processing  credit: 4 hours.
Basic concepts and applications in image and video processing; introduction to multidimensional signal processing: sampling, Fourier transform, filtering, interpolation, and decimation; human visual perception; scanning and display of images and video; image enhancement, restoration and segmentation; digital image and video compression; image analysis. Laboratory exercises allow students to gain hands-on experience with these topics and develop C and Matlab programs. Prerequisite: ECE 410; credit or concurrent registration in one of ECE 313, STAT 400, IE 300, MATH 461; MATH 415; experience with C programming language.

ECE 419  Security Laboratory  credit: 3 OR 4 hours.
Same as CS 460. See CS 460.

ECE 420  Digital Signal Processing Lab  credit: 2 hours.
Development of real-time digital signal processing (DSP) systems using a DSP microprocessor; several structured laboratory exercises, such as sampling and digital filtering; followed by an extensive DSP project of the student's choice. Prerequisite: ECE 410.

ECE 421  Plasma and Fusion Science  credit: 3 hours.
Same as NPRE 421 and PHYS 479. See NPRE 421.

ECE 422  Computer Security I  credit: 3 OR 4 hours.
Same as CS 461. See CS 461.

ECE 424  Computer Security II  credit: 3 OR 4 hours.
Same as CS 463. See CS 463.

ECE 425  Intro to VLSI System Design  credit: 3 hours.
Complementary Metal-Oxide Semiconductor (CMOS) technology and theory; CMOS circuit and logic design; layout rules and techniques; circuit characterization and performance estimation; CMOS subsystem design; Very-Large-Scale Integrated (VLSI) systems design methods; VLSI Computer Aided Design (CAD) tools; laboratory experience in custom VLSI chip design on workstations using concepts of cell hierarchy; final project involving specification, design, and evaluation of a VLSI chip or VLSI CAD program; written report and oral presentation on the final project. Same as CS 435 and CSE 433. Prerequisite: ECE 385 and ECE 411; or CS 232.

ECE 428  Distributed Systems  credit: 3 hours.
Same as CS 425 and CSE 424. See CS 425.

ECE 430  Power Ckts & Electromechanics  credit: 3 hours.
Network equivalents, power and energy fundamentals, resonance, mutual inductance, three-phase power concepts, forces and torques of electric origin in electromagnetic and electrostatic systems, energy conversion cycles, principles of electric machines, transducers, relays, and laboratory demonstration. Credit is not given toward graduate degrees in Electrical and Computer Engineering. Prerequisite: ECE 210.

ECE 431  Electric Machinery  credit: 4 hours.
Theory and laboratory experimentation with three-phase power, power factor correction, single- and three-phase transformers, induction machines, DC machines, and synchronous machines; includes project work on energy control systems; digital simulation of machine dynamics. Prerequisite: ECE 430.

ECE 432  Advanced Electric Machinery  credit: 3 hours.
Advanced rotating machine theory and practice, dynamic analysis of machines using reference frame transformations, tests for parameter determination, reduced order modeling of machines; mechanical subsystems including governors, prime movers, excitation systems, and digital simulation of inter-connected machines. Prerequisite: ECE 431.

ECE 435  Computer Networking Laboratory  credit: 3 OR 4 hours.
Design, apply, analyze, and evaluate communication network protocols under both Linux and Windows NT operating systems. Emphasis on identifying problems, proposing alternative solutions, implementing prototypes using available network protocols and evaluating results. Students work in pairs on multiple programming projects per term. Same as CS 436. 3 undergraduate hours. 3 or 4 graduate hours. Graduate students may receive 4 graduate hours by performing independent design projects. Prerequisite: CS 438.

ECE 437  Sensors and Instrumentation  credit: 3 hours.
Gives a hands-on introduction to the fundamental technology and practical application of sensors. Capacitive, inductive, optical, electromagnetic, and other sensing methods are examined. Instrumentation techniques incorporating computer control, sampling, and data collection and analysis are reviewed in the context of real-world scenarios. Prerequisite: ECE 329.
ECE 438  Communication Networks  credit: 3 hours.
Same as CS 438 and CSE 425. See CS 438.

ECE 439  Wireless Networks  credit: 3 OR 4 hours.
Overview of wireless network architectures including cellular networks, local area networks, multi-hop wireless networks such as ad hoc networks, mesh networks, and sensor networks; capacity of wireless networks; medium access control, routing protocols, and transport protocols for wireless networks; mechanisms to improve performance and security in wireless networks; energy-efficient protocols for sensor networks. Same as CS 439. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 438.

ECE 440  Solid State Electronic Devices  credit: 3 hours.
Semiconductor materials and their electronic properties and applications to electronic devices; p-n junctions; transistors; junction field effect transistors and MOS devices; introduction to integrated circuits. Credit is not given toward graduate degrees in Electrical and Computer Engineering. Prerequisite: PHYS 214; credit or concurrent registration in ECE 329.

ECE 441  Physics & Modeling Semicond Dev  credit: 3 hours.
Detailed presentation of advanced concepts such as generation-recombination, hot electron effects, and breakdown mechanisms; essential features of small ac characteristics, switching and transient behavior of p-n junctions, bipolar and MOS transistors; addresses fundamental issues for device modeling and discusses the perspective and limitations of Si-devices. Prerequisite: ECE 440.

ECE 442  Electronic Circuits  credit: 3 hours.
Analysis and design of analog and digital electronic circuits using MOS field effect transistors and bipolar junction transistors, with an emphasis on the study of amplifiers in integrated circuits. Credit is not given toward graduate degrees in Electrical and Computer Engineering. Credit is not given for both ECE 442 and PHYS 404. Prerequisite: ECE 210 and ECE 440.

ECE 443  Electronic Circuits Laboratory  credit: 1 hours.
Laboratory to accompany ECE 442. Credit is not given toward graduate degrees in Electrical and Computer Engineering. Credit is not given for both ECE 443 and PHYS 404. Prerequisite: Concurrent registration in ECE 442.

ECE 444  IC Device Theory & Fabrication  credit: 4 hours.
Laboratory and lecture course on the physical theory, design, and fabrication of devices suitable for integrated circuitry; includes the electrical properties of semiconductors and techniques (epitaxial growth, oxidation, photolithography diffusion, ion implantation, metallization, and characterization) for fabricating integrated circuit devices such as p-n junction diodes, bipolar transistors, and field effect transistors. Prerequisite: ECE 440.

ECE 445  Senior Design Project Lab  credit: 2 hours.
Individual design projects in various areas of electrical and computer engineering; projects are chosen by students with approval of the instructor; a written report, prepared to journal publication standards, and an oral presentation are required. Credit is not given toward graduate degrees in Electrical and Computer Engineering. For Computer Engineering and Electrical Engineering majors with senior standing.

ECE 447  Active Microwave Ckt Design  credit: 3 hours.
Laboratory and lecture course on microwave circuit design of amplifiers, oscillators, and mixers. Prerequisite: ECE 450 and ECE 453.

ECE 448  Artificial Intelligence  credit: 3 OR 4 hours.
Same as CS 440. See CS 440.

ECE 450  Lines, Fields, and Waves  credit: 3 hours.
General plane wave solution of Maxwell's equations; reflection and transmission of plane waves; transmission lines; impedance matching; waveguides and cavities; radiation. Credit is not given toward graduate degrees in Electrical and Computer Engineering. Prerequisite: ECE 329.

ECE 451  Adv Microwave Measurements  credit: 3 hours.
Manual- and computer-controlled laboratory analysis of circuits at microwave frequencies. Prerequisite: ECE 450.

ECE 452  Electromagnetic Fields  credit: 3 hours.
Plane waves at oblique incidence, wave polarization, anisotropic media, radiation, space communications, and waveguides. Prerequisite: ECE 450.

ECE 453  Wireless Communication Systems  credit: 4 hours.
Design of a radio system for transmission of information; modulation, receivers, impedance matching, oscillators, two-port network analysis, receiver and antenna noise, nonlinear effects, mixers, phase-locked loops. Prerequisite: ECE 329, credit or concurrent registration in ECE 442.
ECE 454  Antennas  credit: 3 hours.
Antenna parameters; polarization of electromagnetic waves; basic antenna types; antenna arrays; broadband antenna design; antenna measurements. Prerequisite: ECE 450.

ECE 455  Optical Electronics  credit: 3 OR 4 hours.
Optical beams and cavities; semiclassical theory of gain; characteristics of typical lasers (gas, solid state, and semiconductor); application of optical devices. 3 undergraduate hours. 4 graduate hours. Prerequisite: ECE 450 or PHYS 436.

ECE 457  Microwave Devices & Circuits  credit: 3 hours.
Electromagnetic wave propagation, microwave transmission systems, passive components, microwave tubes, solid state microwave devices, microwave integrated circuits, S-parameter analysis, and microstrip transmission lines. Prerequisite: ECE 440 and ECE 450.

ECE 458  Applic of Radio Wave Propag  credit: 3 hours.
Terrestrial atmosphere, radio wave propagation, and applications to radio sensing and radio communication. Prerequisite: ECE 450.

ECE 459  Communications Systems  credit: 3 hours.
Focuses on the analog underpinning of analog and digital communication systems: representation of signals and systems in the time and frequency domains; analog modulation schemes; random processes; prediction and noise analysis using random processes; noise sensitivity and bandwidth requirements of modulation schemes. Includes a brief introduction to digital communications. Prerequisite: ECE 313.

ECE 460  Optical Imaging  credit: 3 hours.
Introduction to visible and infrared imaging systems covering fields, optical elements, electronic sensors, and embedded processing systems. Lectures and labs cover active and passive illumination, ranging, holography, polarization, coherence, spectroscopy, and sampling with an emphasis on electronic optomechanical control and data acquisition. Prerequisite: ECE 329; credit or concurrent registration in ECE 313 or STAT 400.

ECE 462  Logic Design  credit: 3 hours.
Design of combinational networks, hazards, finite state machines, design of sequential networks in fundamental mode and pulse mode, state reduction, state assignment and races, and fault detection and testing. Same as CS 462 and MATH 491. Prerequisite: ECE 290 or CS 231.

ECE 463  Digital Communications Lab  credit: 2 hours.
Hands-on experience in the configuration and performance evaluation of digital communication systems employing both radio and optical signals. Prerequisite: ECE 361 or ECE 459.

ECE 464  Power Electronics  credit: 3 hours.
Switching functions and methods of control such as pulse-width modulation, phase control, and phase modulation; dc-dc, ac-dc, dc-ac, and ac-ac power converters; power components, including magnetic components and power semiconductor switching devices. Prerequisite: ECE 442.

ECE 465  Optical Communications Systems  credit: 3 hours.
Fundamentals of lightwave systems: characterization of lightwave channels, optical transmitters, receivers, and amplifiers; quantum and thermal noise processes; design of optical receivers; multimode and single-mode link analysis. Prerequisite: ECE 313 and ECE 450. Recommended: credit or concurrent registration in ECE 459 and ECE 466.

ECE 466  Optical Communications Lab  credit: 1 hours.
Fiber components and measurements, transmitters and detectors, fiber amplifiers, multimode fiber links, and wavelength division multiplexing. Prerequisite: Credit or concurrent registration in ECE 465.

ECE 467  Biophotonics  credit: 3 hours.
An overview of the field of biophotonics, divided into three segments: (1) fundamental principles of light, optics, lasers, biology, and medicine; (2) diagnostic biophotonics including imaging, spectroscopy, and optical biosensors; (3) therapeutic applications of biophotonics including laser ablation and photodynamic therapies. Includes student review and presentation of current scientific literature and tours of microscopy facilities. Same as BIOE 467. Prerequisite: One of ECE 455, ECE 460, PHYS 402.

ECE 468  Optical Remote Sensing  credit: 3 hours.
Optical sensors including single element and area arrays (CCDs). Systems including imager, spectrometer, interferometer, and lidar optical principles and light gathering power. Electromagnetics of atomic and molecular emission and scattering with applications to the atmosphere as an example. Applications include ground and spacecraft platforms. Four laboratory sessions (4.5 hours each) will be arranged during the semester in lieu of four lectures. Same as AE 468 and ATMS 468. Prerequisite: ECE 210; ECE 329; PHYS 214; one of STAT 400, IE 300, ECE 313.
ECE 469  **Power Electronics Laboratory**  credit: 2 hours.
Laboratory study of circuits and devices used for switching power converters, solid-state motor drives, and power controllers, including dc-dc, ac-dc, and dc-ac converters and applications; high-power transistors and magnetic components; design considerations, including heat transfer. Prerequisite: ECE 443; credit or concurrent registration in ECE 464.

ECE 470  **Introduction to Robotics**  credit: 4 hours.
Fundamentals of robotics, rigid motions, homogeneous transformations, forward and inverse kinematics, velocity kinematics, motion planning, trajectory generation, sensing, vision, and control. Same as CS 443, GE 421, and ME 445. Prerequisite: MATH 415 or MATH 418; ECE 210 or GE 320.

ECE 473  **Fund of Engrg Acoustics**  credit: 3 OR 4 hours.
Development of the basic theoretical concepts of acoustical systems; mechanical vibration, plane and spherical wave phenomena in fluid media, lumped and distributed resonant systems, and absorption phenomena and hearing. Same as TAM 413. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: MATH 285 or MATH 286.

ECE 475  **Modeling of Bio-Systems**  credit: 3 OR 4 hours.
Application of linear systems theory and feedback control systems analysis to biological systems; sensory receptors, neuro-muscular system models, control of eye movement, the pupil control system, man-machine interactions, parameter identification in biological systems. Optional project laboratory. Same as BIOE 475. Prerequisite: ECE 210 or GE 320.

ECE 476  **Power System Analysis**  credit: 3 hours.
Development of power system equivalents by phase network analysis, load flow, symmetrical components, sequence networks, fault analysis, and digital simulation. Prerequisite: ECE 430.

ECE 477  **Formal Software Devel Methods**  credit: 3 OR 4 hours.
Same as CS 477. See CS 477.

ECE 480  **Magnetic Resonance Imaging**  credit: 3 OR 4 hours.
Fundamental physical, mathematical, and computational principles governing the data acquisition and image reconstruction of magnetic resonance imaging. Same as BIOE 480. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Recommended: ECE 410.

ECE 482  **Digital IC Design**  credit: 3 hours.
Bipolar and MOS field effect transistor characteristics; VLSI fabrication techniques for MOS and bipolar circuits; calculation of circuit parameters from the process parameters; design of VLSI circuits such as logic, memories, charge-coupled devices, and A/D and D/A converters. Prerequisite: ECE 290 and ECE 442.

ECE 483  **Analog IC Design**  credit: 3 hours.
Basic linear integrated circuit design techniques using bi-polar, JFET, and MOS technologies; operational amplifiers; wide-band feedback amplifiers; sinusoidal and relaxation oscillators; electric circuit noise; application of linear integrated circuits. Prerequisite: ECE 442.

ECE 484  **Prin Adv Microelec Processing**  credit: 3 hours.
Principles of advanced methods of pattern delineation, pattern transfer, and modern material growth and how these are applied to produce novel and high performance devices and circuits in various electronic materials with special emphasis on semiconductors. Issues in computer simulation of processes and the manufacturing of devices and circuits. Prerequisite: ECE 444.

ECE 485  **MEMS Devices & Systems**  credit: 3 hours.
Introduction to principles, fabrication techniques, and applications of microelectromechanical systems (MEMS). Gives in-depth understanding of sensors, actuator principles, and integrated microfabrication techniques for MEMS. Comprehensive investigation of state-of-the-art MEMS devices and systems. Same as IE 485 and ME 485. For engineering majors with senior standing.

ECE 486  **Control Systems**  credit: 4 hours.
Analysis and design of control systems with emphasis on modeling, state variable representation, computer solutions, modern design principles, and laboratory techniques. Prerequisite: ECE 210.

ECE 487  **Intro Quantum Electr for EEs**  credit: 3 hours.
Application of quantum mechanical concepts to electronics problems; detailed study of a calculable two-state laser system; incidental quantum ideas bearing on electronics. Prerequisite: PHYS 485.

ECE 488  **Compound Semicond & Devices**  credit: 3 hours.
Advanced semiconductor materials and devices course covering elementary band theory, heterostructures, transport issues, three-terminal devices, two-terminal devices, including lasers and light modulators. Prerequisite: ECE 440 and ECE 450.
ECE 489  Robot Dynamics and Control  credit: 4 hours.
Same as GE 422 and ME 446. See GE 422.

ECE 490  Introduction to Optimization  credit: 3 OR 4 hours.
Basic theory and methods for the solution of optimization problems; iterative techniques for unconstrained minimization; introductory presentation of linear and nonlinear programming with engineering applications. Same as CSE 441. 3 undergraduate hours. 4 graduate hours. Prerequisite: CS 101 or CS 125; MATH 241 or MATH 380.

ECE 491  Numerical Analysis  credit: 3 OR 4 hours.
Same as CS 450, CSE 401 and MATH 450. See CS 450.

ECE 492  Parallel Progrmg: Sci & Engrg  credit: 3 OR 4 hours.
Same as CS 420 and CSE 402. See CS 420.

ECE 493  Advanced Engineering Math  credit: 3 OR 4 hours.
Same as MATH 487. See MATH 487.

ECE 495  Photonic Device Laboratory  credit: 3 hours.
Introduction to active photonic devices and lightwave technology. Hands-on experience with several classes of lasers (HeNe laser, semiconductor edge emitting lasers, vertical cavity surface emitting lasers), photodetectors, and photonic systems. Familiarization with experimental optical characterization techniques and equipment. Prerequisite: ECE 487 recommended.

ECE 496  Proj & Lect in Quantum Electr  credit: 3 hours.
Studies processes involving quantum mechanical energy transfers in energized media leading to various lasering devices and their applications. A series of lectures, supplementing the special projects, offers background information on spectroscopy, collisional energy transfer, laser pumping schemes, modulation at optical frequencies, holography, and other related topics. Prerequisite: Senior standing; consent of instructor; ECE 487 recommended.

ECE 497  Senior Research Project  credit: 2 hours.
Individual research project under the guidance of a faculty member: for example, mathematical analysis, laboratory experiments, computer simulations, software development, circuit design, or device fabrication. Preparation of a written research proposal, which includes preliminary results. 2 undergraduate hours. ECE 497 and ECE 499 taken in sequence fulfill the Advanced Composition Requirement. No graduate credit. May be repeated. Prerequisite: RHET 105; consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ECE 498  Special Topics in ECE  credit: 0 TO 4 hours.
Subject offerings of new and developing areas of knowledge in electrical and computer engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

ECE 499  Senior Thesis  credit: 2 hours.
Completion of the research project begun under ECE 497. Preparation and oral presentation of a written thesis that reports the results of the project. 2 undergraduate hours. To fulfill the Advanced Composition Requirement, credit must be earned for both ECE 497 and ECE 499. No graduate credit. Prerequisite: ECE 497 and consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ECE 500  ECE Colloquium  credit: 0 hours.
Required of all graduate students. Approved for S/U grading only.

ECE 510  Micro and Nanolithography  credit: 4 hours.
A comprehensive foundation in the broad field of micro and nanolithography, including the science of optical imaging, photochemistry, and materials issues; technological developments including state-of-the-art commercial lithography systems; applications of micro and nanolithography to diverse fields, including semiconductor devices, displays, flexible electronics, microelectromechanical systems, and biotechnology. Prerequisite: One of ECE 444, ECE 460, MSE 462, NPRE 429, PHYS 402.

ECE 511  Computer Architecture  credit: 4 hours.
Advanced concepts in computer architecture; design, management, and modeling of memory hierarchies, stack-oriented processors, associative processors, pipelined computers, and multiple processor systems. Focuses on hardware alternatives in detail and their relation to system performance and cost. Same as CSE 521. Prerequisite: ECE 411 or CS 433.
ECE 512  **Computer Microarchitecture**  credit: 4 hours.
Design of high performance computer systems; instruction level concurrency; memory system implementation; pipelining, superscalar, and vector processing; compiler back-end code optimization; profile assisted code transformations; code generation and machine dependent code optimization; cache memory design for multiprocessors; synchronization implementation in multiprocessors; compatibility issues; technology factors; state-of-the-art commercial systems. Same as CSE 528. Prerequisite: ECE 511 and CS 426.

ECE 513  **Vector Space Signal Processing**  credit: 4 hours.
Rigorous presentation of key mathematical tools in a vector space framework, including: finite and infinite dimensional vector spaces, Hilbert spaces, orthogonal projections, subspace techniques, least-squares methods, matrix decomposition, conditioning and regularizations, bases and frames, the Hilbert space of random variables, random processes, iterative methods; applications in signal processing, including inverse problems, filter design, sampling, interpolation, sensor array processing, and signal and spectral estimation. Prerequisite: ECE 313, ECE 410, and MATH 415.

ECE 515  **Control System Theory & Design**  credit: 4 hours.
Feedback control systems, emphasizing state space techniques. Basic principles, modeling, analysis, stability, structural properties, optimization, and design to meet specifications. Prerequisite: ECE 486.

ECE 517  **Nonlinear & Adaptive Control**  credit: 4 hours.
Design of nonlinear control systems based on stability considerations; Lyapunov and hyperstability approaches to analysis and design of model reference adaptive systems; identifiers, observers, and controllers for unknown plants. Prerequisite: ECE 515.

ECE 520  **EM Waves & Radiating Systems**  credit: 4 hours.
Fundamental electromagnetic theory with applications to transmission lines, waveguides, and antennas; introduction to the solution of advanced problems in static electric and magnetic fields. Prerequisite: ECE 452.

ECE 522  **Controlled Fusion Systems**  credit: 4 hours.
Same as NPRE 522. See NPRE 522.

ECE 523  **Gaseous Electronics & Plasmas**  credit: 4 hours.
Basic concepts and techniques, both theoretical and experimental, applicable to gaseous electronics, gas and solid plasmas, controlled fusion, aeronomy, gas lasers, and magnetohydrodynamics. Prerequisite: ECE 452 or PHYS 485.

ECE 525  **Nucl-Electr Energy Conversion**  credit: 4 hours.
Same as NPRE 525. See NPRE 525.

ECE 527  **System-On-Chip Design**  credit: 4 hours.
System-on-chip (SOC) design methodology and IP (intellectual property) reuse, system modeling and analysis, hardware/software co-design, behavioral synthesis, embedded software, reconfigurable computing, design verification and test, and design space exploration. Class projects are carried out based on student interests, focusing on current SOC design and research. Platform FPGA boards and digital cameras are provided to prototype, test, and evaluate SOC designs. Prerequisite: ECE 391 and ECE 425.

ECE 528  **Analysis of Nonlinear Systems**  credit: 4 hours.
Nonlinear dynamics, vector fields and flows, Lyapunov stability theory, regular and singular perturbations, averaging, integral manifolds, input-output and input-to-state stability, and various design applications in control systems and robotics. Same as GE 520 and ME 546. Prerequisite: ECE 515 and MATH 285.

ECE 530  **Large-Scale System Analysis**  credit: 4 hours.
Fundamental techniques for the analysis of large-scale electrical systems, including methods for nonlinear and switched systems. The importance of the structural characteristics of such systems is stressed. Key aspects of static and dynamic analysis methods are presented. Prerequisite: ECE 464 and ECE 476.

ECE 531  **Theory of Guided Waves**  credit: 4 hours.
Propagation of electromagnetic waves in general cylindrical waveguides; stationary principles; non-uniform inhomogeneously filled waveguides; mode and power orthogonality; losses in waveguides; analytical and numerical techniques; microwave integrated circuits waveguides; optical waveguides. Prerequisite: ECE 520. Recommended: MATH 556.

ECE 532  **Compnd Semicond & Diode Lasers**  credit: 4 hours.
Compound semiconductor materials and their optical properties. Diode lasers are discussed in detail including quantum well heterostructure lasers, strained layer lasers, and quantum wire and quantum dot lasers. Current topics in diode laser development are included. Prerequisite: ECE 440 and PHYS 486. Recommended: ECE 455; credit or concurrent registration in ECE 536.

ECE 533  **Parallel Computer Architecture**  credit: 4 hours.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit: 4 hours</th>
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<tr>
<td>ECE 534</td>
<td>Random Processes</td>
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<td></td>
<td>Basic concepts of random processes; linear systems with random inputs; Markov processes; spectral analysis; Wiener and Kalman filtering; applications to systems engineering. Prerequisite: One of ECE 313, MATH 461, STAT 400.</td>
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<td>ECE 535</td>
<td>Theory of Semicond &amp; Devices</td>
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<td>Introductory quantum mechanics of semiconductors; energy bands; dynamics of Bloch electrons in static and high-frequency electric and magnetic fields; equilibrium statistics; transport theory, diffusion, drift, and thermoelastic effects; characteristics of p-n junctions, heterojunctions, and transistor devices. Same as PHYS 565. Prerequisite: Senior-level course in quantum mechanics or atomic physics.</td>
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<tr>
<td>ECE 536</td>
<td>Integ Optics &amp; Optoelectronics</td>
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<td>Integrated optical and optoelectronic devices; theory of optical devices including laser sources, waveguides, photodetectors, and modulations of these devices. Prerequisite: One of ECE 455, ECE 487, PHYS 486. Recommended: ECE 488.</td>
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<tr>
<td>ECE 537</td>
<td>Speech Processing Fundamentals</td>
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<td>Provides an intuitive understanding of speech processing by the auditory system, in three parts. I: The theory of acoustics of speech production, introductory acoustic phonetics, inhomogeneous transmission line theory (and reflectance), room acoustics, the short-time Fourier Transform (and its inverse), and signal processing of speech (LPC/CELP/VQ). II: Psychoacoustics of speech perception, critical bands, masking (JNDS), and the physiology of the auditory pathway (cochlear modeling). III: Information theory entropy, channel capacity, the confusion matrix, state models, EM algorithms, and Bayesian networks. Classic papers on speech processing and speech perception assigned and presented by student groups. Matlab (or equivalent) programming is required for many of the homeworks. Prerequisite: ECE 410.</td>
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<tr>
<td>ECE 538</td>
<td>Speech and Hearing Acoustics</td>
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<td>Fundamentals of acoustics: resonance, standing waves, frequency response, Fourier analysis, acoustic impedance, transients, and room response. Source-filter theory of speech production, glottal source, and multi-tube filter models. Auditory and speech physiology, psychoacoustics (pitch, loudness, masking, articulation index), and auditory prostheses (hearing aids, cochlear implants). Same as LING 521 and SHS 503. Credit is not given for both ECE 538 and ECE 537. Credit is not given to graduate engineering majors. Prerequisite: One of LING 303, LING 401, SHS 301.</td>
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<tr>
<td>ECE 539</td>
<td>Adv Theory Semicond &amp; Devices</td>
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<td>Selected advanced topics of current interest in the physics of semiconductors and solid-state devices. Same as CSE 534. Prerequisite: ECE 535.</td>
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<td>ECE 540</td>
<td>Computational Electromagnetics</td>
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<td>Basic computational techniques for numerical analysis of electromagnetics problems, including the finite difference, finite element, and moment methods. Emphasis is placed on the formulation of physical problems into mathematical boundary-value problems, numerical discretization of continuous problems into discrete problems, and development of rudimentary computer codes for simulation of electromagnetic fields in engineering problems using each of these techniques. Same as CSE 530. Prerequisite: CS 357; credit or concurrent registration in ECE 520.</td>
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<tr>
<td>ECE 541</td>
<td>Computer Systems Analysis</td>
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<td>Development of analytical models of computer systems and application of such models to performance evaluation; topics include scheduling policies, paging algorithms, multiprogrammed resource management, and queuing theory. Same as CS 541 and CSE 524. Prerequisite: One of ECE 313, MATH 461, MATH 463.</td>
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<tr>
<td>ECE 542</td>
<td>Fault-Tolerant Dig Syst Design</td>
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<td>Advanced concepts in hardware and software fault tolerance; topics addressed include fault models, coding in computer systems, module and system level fault detection mechanism, reconfiguration techniques in multiprocessor systems and VLSI processor arrays, and software fault tolerance techniques such as recovery blocks, N-version programming, checkpointing, and recovery; survey of practical fault-tolerant systems. Same as CS 536. Prerequisite: ECE 411.</td>
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<td>ECE 543</td>
<td>Dig Testing &amp; Design for Test</td>
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<td>Fundamental techniques of detecting failures in complex digital systems, algorithms for automatic test generation, and schemes for designing systems to be easily testable and with self test capability; hands-on experience with state-of-the-art computer-aided test tools in the laboratory. Prerequisite: ECE 411; ECE 462.</td>
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<tr>
<td>ECE 544</td>
<td>Topics in Signal Processing</td>
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<td>Lectures and discussions related to advanced topics and new areas of interest in signal processing; including speech, image and multidimensional processing. May be repeated 8 hours in a term to a total of 20 hours. Credit towards a degree from multiple offerings</td>
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of this course is not given if those offerings have significant overlap, as determined by the ECE department. Prerequisite: As specified each term. It is expected that each offering will have a 500-level course as prerequisite or co-requisite.

ECE 545 **Advanced Physical Acoustics** credit: 4 hours.
Advanced topics in acoustics including physical properties of a fluid; linear propagation phenomena; nonlinear phenomena such as radiation force, streaming, and harmonic generation; cavitation; absorption and dispersion. Same as TAM 515. Prerequisite: One of ECE 473, ECE 520, TAM 518.

ECE 547 **Topics in Image Processing** credit: 4 hours.
Examines fundamental concepts, techniques, and directions of research in image processing; topics include two-dimensional Fourier transform and filtering, image digitization, coding, restoration, reconstruction, analysis, and recognition. Same as CSE 543. Prerequisite: ECE 313 and ECE 410.

ECE 548 **Models of Cognitive Processes** credit: 4 hours.
Same as CS 548. See CS 548.

ECE 549 **Computer Vision** credit: 4 hours.
Information processing approaches to computer vision, algorithms, and architectures for artificial intelligence and robotics systems capable of vision: inference of three-dimensional properties of a scene from its images, such as distance, orientation, motion, size and shape, acquisition, and representation of spatial information for navigation and manipulation in robotics. Same as CS 543. Prerequisite: ECE 448 or CS 225.

ECE 550 **Advanced Robotic Planning** credit: 4 hours.
Computational approaches to robot motion planning, configuration space, algebraic decompositions, artificial potential fields, retraction, approximate decompositions, planning under uncertainty, grasp planning, and task-level planning. Prerequisite: ECE 470.

ECE 551 **Digital Signal Processing II** credit: 4 hours.
Basic concept review of digital signals and systems; computer-aided digital filter design, quantization effects, decimation and interpolation, and fast algorithms for convolution and the DFT; introduction to adaptive signal processing. Same as CSE 542. Prerequisite: ECE 313 and ECE 410.

ECE 552 **Numerical Circuit Analysis** credit: 4 hours.
Formulation of circuit equations; sparse matrix algorithms for the solution of large systems, AC, DC, and transient analysis of electrical circuits; sensitivity analysis; decomposition methods. Same as CSE 532. Prerequisite: MATH 415 and ECE 210.

ECE 553 **Optimum Control Systems** credit: 4 hours.
Theoretical and algorithmic foundations of deterministic optimal control theory, including calculus of variations, maximum principle, and principle of optimality; the Linear-Quadratic-Gaussian design; differential games and H-infinity optimal control design. Prerequisite: ECE 313 and ECE 515.

ECE 555 **Control of Stochastic Systems** credit: 4 hours.
Stochastic control models; development of control laws by dynamic programming; separation of estimation and control; Kalman filtering; self-tuning regulators; dual controllers; decentralized control. Prerequisite: ECE 515 and ECE 534.

ECE 556 **Coding Theory** credit: 4 hours.
Coding theory with emphasis on the algebraic theory of cyclic codes using finite field arithmetic, decoding of BCH and RS codes, finite field Fourier transform and algebraic geometry codes, convolutional codes, and trellis decoding algorithms. Same as CS 577 and MATH 579. Prerequisite: MATH 417.

ECE 558 **Digital Imaging** credit: 4 hours.
Multidimensional signals, convolution, transforms, sampling, and interpolation; design of two-dimensional digital filters; sensor array processing and range-doppler imaging; applications to synthetic aperture radar, optics, tomography, radio astronomy, and beam-forming sonar; image estimation from partial data. Prerequisite: ECE 313 and ECE 410.

ECE 559 **Topics in Communications** credit: 4 hours.
Lectures and discussion related to advanced topics and new areas of interest in the theory of communication systems, including information theory, coding theory, and communication network theory. May be repeated in the same term, if topics vary, to a maximum of 12 graduate hours; may be repeated in separate terms, if topics vary, to a maximum of 16 graduate hours. Credit toward a degree from multiple offerings of this course is not given if those offerings have significant overlap, as determined by the Electrical and Computer Engineering department. Prerequisite: As specified each term. (It is expected that each offering will have a 500-level course as a prerequisite or co-requisite.)

ECE 560 **VLSI in DSP & Communication** credit: 4 hours.
Basic concepts in digital signal processing, VLSI design methodologies, VLSI DSP building blocks; algorithm transformation and mapping techniques, high-speed, low-power transforms, applications to digital filtering; basics of finite-field arithmetic, forward-error correction algorithms, and architectures; DSP implementation platforms, programmable DSPs, media processors, FPGAs, ASICs, case studies of multimedia communications systems, video codecs, xDSL, and cable modems. Homework and a term project apply these concepts in the design of VLSI architectures for digital signal processing and communication systems. Prerequisite: ECE 410.

**ECE 561 Detection & Estimation Theory** credit: 4 hours.
Introduction to detection and estimation theory, with applications to communication, control, and radar systems; decision-theory concepts and optimum-receiver principles; detection of random signals in noise, coherent and noncoherent detection; parameter estimation, linear and nonlinear estimation, and filtering. Prerequisite: ECE 534.

**ECE 562 Advanced Digital Communication** credit: 4 hours.
Digital communication systems modulation, demodulation, signal space methods, channel models, bit error rate, spectral occupancy, synchronization, equalization, trellis-coded modulation, wireless channels, multiantenna systems, spread spectrum, and orthogonal frequency modulation. ECE 361 or ECE 459.

**ECE 563 Information Theory** credit: 4 hours.
Mathematical models for channels and sources; entropy, information, data compression, channel capacity, Shannon's theorems, and rate-distortion theory. Same as CS 578 and STAT 563. Prerequisite: One of ECE 534, MATH 464, MATH 564.

**ECE 567 Communication Network Analysis** credit: 4 hours.
First high-level course in performance analysis and design of multiple-user communication systems; emphasizes rigorous formulation and analytical and computational methods; includes queuing networks, decentralized minimum delay routing, and dynamic network flow control. Prerequisite: CS 438; one of ECE 534, MATH 464, MATH 564.

**ECE 568 Model & Cntrl Electromech Syst** credit: 4 hours.
Fundamental electrical and mechanical laws for derivation of machine models; simplifying transformations of variables in electrical machines; power electronics for motor control; time-scale separation; feedback linearization and nonlinear control as applied to electrical machines. Typical electromechanical applications in actuators, robotics, and variable speed drives. Same as ME 565. Prerequisite: ECE 431 and ECE 515.

**ECE 569 Diffraction, Coherence & Info** credit: 4 hours.
Analysis of information encoding, transmission, and decoding in spatially complex optical systems. Analysis of digital and analog imaging, holography, and interferometry. Analysis of physical and electronic transformations in imaging systems. Discussion of multiplex imaging and imaging transformations. Prerequisite: ECE 460.

**ECE 570 Nonlinear Optics** credit: 4 hours.
Light propagation in anisotropic crystals; second- and third-order nonlinear susceptibility and electro-optic effect; discussion of the relationship of these effects along with such applications as light modulation, harmonic generation, and optical parametric amplification and oscillation. Prerequisite: ECE 520.

**ECE 571 EM Waves in Inhomogen Media** credit: 4 hours.
Electromagnetic waves in layered media; plane wave expansion of electromagnetic point source field; Sommerfeld integrals; transient response; WKB method with asymptotic matching; scattering by junction discontinuity; surface integral equation; volume integral equation; inverse problems. Prerequisite: MATH 446; ECE 520 or PHYS 505.

**ECE 572 Quantum Opto-Electronics** credit: 4 hours.
Theoretical introduction to quantum mechanics and atomic physics, with many applications in spin resonance and modern maser theory. Prerequisite: PHYS 485 recommended.

**ECE 573 Power System Control** credit: 4 hours.
Energy control center functions, state estimation and steady state security assessment techniques, economic dispatch, optimal power flow, automatic generation control, and dynamic equivalents. Same as CSE 545. Prerequisite: ECE 476; credit or concurrent registration in ECE 530.

**ECE 576 Power System Dynm & Stability** credit: 4 hours.
Detailed modeling of the synchronous machine and its controls, such as excitation system and turbine-governor dynamics; time-scales and reduced order models; non-linear and linear multi-machine models; stability analysis using energy functions; power system stabilizers. Same as CSE 544. Prerequisite: ECE 476; credit or concurrent registration in ECE 530.

**ECE 577 Advanced Antenna Theory** credit: 4 hours.
Selected topics from recent engineering literature on antennas supplemented by advanced topics in electromagnetic theory needed for comprehension; current techniques for analysis of wire, slot, horn, frequency independent, quasi-optical, and array antennas. Prerequisite: ECE 520.

**ECE 579  Computational Complexity**  credit: 4 hours.
Same as CS 579 and MATH 578. See CS 579.

**ECE 580  Optimiz by Vector Space Methods**  credit: 4 hours.
Introduction to normed, Banach, and Hilbert spaces; applications of the projection theorem and the Hahn-Banach Theorem to problems of minimum norm, least squares estimation, mathematical programming, and optimal control; the Kuhn-Tucker Theorem and Pontryagin's maximum principle; introduction to iterative methods. Same as MATH 587. Prerequisite: MATH 415 or MATH 482; MATH 447.

**ECE 581  Advanced Analog IC Design**  credit: 4 hours.
Advanced topics in modern analog IC design. Emphasis will be placed on CMOS building blocks and circuit techniques as a result of fabrication technology advancement. Extensive computer simulations are required in both the homework and the final project. The major topics include: noise in linear analog circuits; linear feedback theory and stability; harmonic distortion in weakly nonlinear circuits; switched-capacitor circuit technique and realization; Nyquist-rate and oversampled data converters. Prerequisite: ECE 410 and ECE 483.

**ECE 582  Physical VLSI Design**  credit: 4 hours.
Basic physical design requirements for VLSI; performance-oriented formulation and optimization of chip partitioning, module placement and interconnection; optimized design and layout of on-chip modules; circuit extraction; high-speed VLSI circuits; yield and reliability analysis; advanced VLSI packaging and parametric testing. Prerequisite: ECE 425 or ECE 482.

**ECE 583  Semiconductor Nanotech Lab**  credit: 4 hours.
Practical aspects of design and testing of nanometer-scale, MOS circuit technology. Emphasis on process integration and the interrelationship between the process flow and device/circuit performance. Experience with state-of-the-art, process and device simulation tools; nanostructure characterization using atomic force and transmission electron microscopies; capacitance, conductance and scattering parameter measurements used to extract parameters for circuit models. Prerequisite: ECE 444; PHYS 485 or PHYS 486.

**ECE 585  MOS Device Modeling & Design**  credit: 4 hours.
Techniques for characterizing gate oxide and interface properties and reliability, I-V models for circuit simulation, design for control of short channel effects, silicon-on-insulator, and new device structures. Prerequisite: ECE 441.

**ECE 586  Topics in Decision and Control**  credit: 4 hours.
Lectures and discussions related to advanced topics and new areas of interest in decision and control theory, including hybrid, sampled-data, and fault tolerant systems, control over networks, vision-based control, system estimation and identification, and dynamic games. May be repeated up to 12 hours within a term, and up to 20 hours total for the course. Credit towards a degree from multiple offerings of this course is not given if those offerings have significant overlap, as determined by the ECE department. Prerequisite: As specified each term. It is expected that each offering will have a 500-level course as prerequisite or co-requisite.

**ECE 588  Electricity Resource Planning**  credit: 4 hours.
Techniques in electricity resource planning including methodologies for reliability evaluation and assessment, production costing, marginal costing, supply-side and demand-side planning, integrated planning, and planning under competition. Prerequisite: MATH 415, ECE 313, and ECE 476.

**ECE 589  Robot Control Theory**  credit: 4 hours.
Same as GE 522. See GE 522.

**ECE 590  Grad Sem in Special Topics**  credit: 0 TO 2 hours.
Lectures and discussions on current research and literature on advanced topics in electrical engineering. Approved for S/U grading only. May be repeated. Prerequisite: Consent of instructor.

**ECE 594  Math Models of Language**  credit: 3 OR 4 hours.
Mathematical models of linguistic structure and their implementation in computational algorithms used in automatic speech understanding and speech synthesis. Statistical and automata-theoretic techniques are studied allowing a quantitative description of acoustic-phonetics, phonology, phonotactics, lexicons, syntax, and semantics. The methods are used to build components of a speech understanding system. Same as LING 594. For 4 hours credit, an extended project is required. Prerequisite: ECE 537.

**ECE 596  Master's Project**  credit: 1 TO 8 hours.
Individual or team projects in electrical and computer engineering emphasizing advanced engineering analysis and design. May be repeated to a maximum of 16 hours. Only 4 hours of ECE 496 can be included in the 32 hours required for the M. S. degree in Electrical Engineering. Credit in ECE 496 cannot be included in the 64 post-M. S. hours required for the Ph.D. degree in Electrical Engineering. Students with deferred credit for ECE 599 may not register in ECE 596 without consent of the ECE department.

**ECE 597 Individual Study in ECE** credit: 1 TO 8 hours.
Individual projects. Approved written application to department as specified by department or instructor is required. May be repeated. Prerequisite: Consent of instructor.

**ECE 598 Special Topics in ECE** credit: 0 TO 4 hours.
Subject offerings of new and developing areas of knowledge in electrical and computer engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

**ECE 599 Thesis Research** credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
Economics

Head of Department: J. Fred Giertz
Department Office: Graduate Department Office: 330 Wohlers Hall, 1206 South Sixth, Champaign; Undergraduate Department Office: 225 David Kinley Hall, 1407 W. Gregory, Urbana
Phone: Graduate Department: 333-0120; Undergraduate Department: 333-2682
www.cba.uiuc.edu/economics

ECON 101 Introduction to Economics credit: 4 hours.
General survey of the operation of the economic system; emphasizes the determination of the level of national income, the pricing and allocation of products, and factors of production under existing conditions in the United States. This is an honors course limited to students currently enrolled in the Chancellor's Scholar Program. Students with credit in ECON 102 or ECON 103 may receive 2 hours credit in ECON 101. Students with credit in both ECON 102 and ECON 103 may not receive credit for ECON 101.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ECON 102 Microeconomic Principles credit: 3 hours.
Introduction to the functions of individual decision-makers, both consumers and producers, within the larger economic system. Primary emphasis on the nature and functions of product markets, the theory of the firm under varying conditions of competition and monopoly, and the role of government in prompting efficiency in the economy. Students receiving credit for ACE 100 may not receive credit for ECON 102.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ECON 103 Macroeconomic Principles credit: 3 hours.
Introduction to the theory of determination of total or aggregate income, employment, output, price levels, and the role of money in the economy. Primary emphasis on monetary and fiscal policy, inflation, unemployment, economic growth, and international economics. Students with credit in ECON 101 may receive 1 hour of credit in ECON 103.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ECON 110 Current Economics Problems credit: 1 hours.
Economic analysis of specific economic problems dealing with poverty, economic development, international economics, and other contemporary issues. Prerequisite: Credit or concurrent registration in ECON 102 or ECON 103.

ECON 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

ECON 202 Economic Statistics I credit: 3 hours.
Introduction of basic concepts in statistics including the presentation of data, descriptive statistics, probability theory, discrete and continuous distributions, sampling distributions, estimation, and hypothesis testing. The approach of the class includes both learning the concepts behind basic statistics and also how to apply these concepts in "real-life" situations. Utilizes a practical project format. To complete the Business Statistics sequence, students must also complete ECON 203. Students may not receive credit for this course if they have received credit for a college-level introductory statistics course such as PSYC 235; SOC 280; or STAT 100. Prerequisite: Credit or registration in one of MATH 220, MATH 221, MATH 234.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

ECON 203 Economic Statistics II credit: 3 hours.
Continuation of ECON 202. Builds upon point and interval estimation as well as hypothesis testing skills first introduced in ECON 202. Utilizes a practical project format to extend the student skill set to include simple and multiple linear regression and time series techniques. Prerequisite: ECON 202; one of MATH 220, MATH 221, MATH 234.

ECON 210 Environmental Economics credit: 3 hours.
Same as ACE 210, ENVS 210, NRES 210, and UP 210. See ACE 210.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
ECON 220  **Intl Economic Principles**  credit: 3 hours.

Principles-level course in international economics for non-majors. The first half of course, international trade, covers such topics as comparative advantage, protectionism (tariff and nontariff), impact on income distribution, and industrial policies. The second half, international finance, covers topics such as balance of payments, exchange-rate determination, currency crises, dollarization, and macroeconomic policy in an open economy. Issues relating to globalization will be covered in both halves. Prerequisite: ECON 101; or ECON 102 (or ACE 100) and ECON 103. Credit in ECON 220 is not applicable toward graduation in the Economics Major.

ECON 302  **Inter Microeconomic Theory**  credit: 3 hours.

Microeconomic analysis including value and distribution theory; analysis of the pricing of the factors of production integrated in a micro-general equilibrium context which builds towards explaining the resource allocation process. Prerequisite: ECON 102 or equivalent. Recommended: MATH 125; one of MATH 220, MATH 221, MATH 234.

ECON 303  **Inter Macroeconomic Theory**  credit: 3 hours.

The modern theory of the determination of the level and rate of growth of income, employment, output, and the price level; discusses alternate fiscal and monetary policies to facilitate full employment and economic growth. Prerequisite: ECON 102, ECON 103. Recommended: MATH 125; one of MATH 220, MATH 221, MATH 234.

ECON 311  **Introduction to Public Finance**  credit: 3 hours.

General survey of the economics of the public sector at the federal, state, and local levels, including government expenditures, public budgeting, cost-benefit analysis, principles of taxation, tax reform, and intergovernmental fiscal relations. Credit is not given for ECON 311 if the student has credit for ECON 411. Current or prospective economics majors are encouraged to take ECON 411. Prerequisite: ECON 102 or equivalent.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ECON 331  **American Economic History**  credit: 3 hours.

Traces the course of growth and development of the economy from the colonial period to World War I; emphasizes conceptualization of key issues of the American experience and analysis of significant episodes and turning points. Prerequisite: ECON 102 and ECON 103 or consent of instructor.

ECON 332  **European Economic History**  credit: 3 hours.

Economic structure and development of Europe since 1000 with respect to agriculture, industry, trade, technology, finance, and government; emphasis on those forces which contribute to the economic development of Europe and on the spread of these forces throughout the world. Prerequisite: ECON 102 and ECON 103 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

ECON 333  **History of Economic Thought**  credit: 3 hours.

The development of economics; the examination of contributions of individual writers and schools of thought as they influenced economic thought and national policy. Prerequisite: ECON 102 and ECON 103 or equivalent.

ECON 340  **Labor Problems**  credit: 3 hours.

Survey of the problems and analysis of U.S. labor markets and unions; topics include labor force participation, occupations, hours, wage determination, development and attributes of U. S. labor unions, and overview of collective bargaining and the effects of unions, unemployment, wages and inflation, and racial and sex discrimination; and selected current policy problems. Current or prospective majors are encouraged to take ECON 440. Credit is not given for ECON 340 if student has credit for or is currently enrolled in ECON 440. Prerequisite: ECON 102 or equivalent.

ECON 342  **Women in the Labor Market**  credit: 3 hours.

Changing role of women in the labor market and the economy; supply and demand for women: nature, extent, and legal remedies for sex discrimination in employment; "earnings gaps" and variable employment costs, men versus women; new role of multi-earner families; and comparative use of women as a professional resource. Same as GWS 342. Prerequisite: ECON 102 or equivalent.

ECON 343  **Unions, Bargaining & Pub Pol**  credit: 3 hours.

Analyzes the legal background and economic issues associated with unions and collective bargaining in the United States including theory of the labor movement; process of union wage determination; analysis of strikes; background, strategies, and principal issues in collective bargaining; and problems and policies of government intervention. Prerequisite: ECON 102 and ECON 103 or equivalent.

ECON 351  **Economic Development in Japan**  credit: 3 hours.
Analyzes Japan's international trade, economic structure, standards of living, policy-making process, and future prospect; additional attention to U.S.-Japanese economic relations and Japan's role in Asia. Prerequisite: ECON 102 and ECON 103 or consent of instructor.

ECON 356  **The Economy of China**  credit: 3 hours.
Discusses changes in the patterns of production, exchange, and distribution in Communist China, with emphasis on their relation to social transformation; survey of Chinese economic history over the past century, dealing with the institutional background to and the structure of economic activities in China. Prerequisite: ECON 102 and ECON 103 or consent of instructor.

ECON 397  **Senior Research I**  credit: 2 TO 4 hours.
Research and readings course for students majoring in economics; may be taken by students in the college honors program in partial fulfillment of the honors requirements. Prerequisite: Cumulative grade-point average of 3.0 or honors in the junior year, or consent of instructor; senior standing.

ECON 398  **Senior Research II**  credit: 2 TO 4 hours.
Research and readings course for students majoring in economics; may be taken by students in the college honors program in partial fulfillment of the honors requirements. Prerequisite: Cumulative grade-point average of 3.0 or honors in the junior year; senior standing.

ECON 399  **Undergraduate Open Seminar**  credit: 0 TO 9 hours.
Independent study course covering topics not treated by regular course offerings. This class does not satisfy departmental graduation requirements. Approved for both letter and S/U grading. May be repeated. Prerequisite: Junior or senior standing. ECON 101 or equivalent is recommended. ECON 102 or equivalent is recommended.

ECON 411  **Public Sector Economics**  credit: 2 TO 4 hours.
Economic analysis of government tax and expenditure policies; topics include public good and externality theory, public choice theory, income distribution, cost-benefit analysis, principles of taxation, tax incidence, economic effects and optimal structures of major taxes, and taxation in developing economies. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 302 or consent of instructor; consent of instructor required for student with credit in ECON 311.

ECON 412  **Economics of Poverty**  credit: 2 TO 4 hours.
Analyzes the nature and causes of poverty with special emphasis on critical evaluation of programs to combat poverty in the United States. Same as LIR 412. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 102 and ECON 103 or equivalent.

ECON 414  **Urban Economics**  credit: 3 OR 4 hours.
Analyzes the urban economy. Topics include: economic reasons for the existence of cities; the theory of urban spatial structure; the effects of taxation on housing decisions; the economics of freeway congestion; economics analysis of local public goods and services; economic analysis of rent control, slum policies and land-use controls. Same as FIN 414. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated. Prerequisite: ECON 102 or equivalent; ECON 302 is strongly recommended.

ECON 415  **Dynm Simul of Nat Res Problems**  credit: 3 OR 4 hours.
Same as ESES 467 and GEOG 467. See GEOG 467.

ECON 420  **International Economics**  credit: 2 TO 4 hours.
Introduction to the theory of international trade and finance with selected application to current problems of trade policy, balance of payments adjustment, the international monetary system, and globalization issues. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 302 or equivalent, or consent of instructor; ECON 303 is recommended.

ECON 421  **Cont Issues in Intl Econ**  credit: 2 TO 4 hours.
In depth analysis of selected current issues and policy problems of the international economy, including (but not restricted to) the following: new approaches to the theory of international trade, reform of the international monetary system, role of the General Agreement on Tariffs and Trade and the United Nations Conference on Trade and Development in expanding trade between developed and undeveloped economies, problems of stabilizing international commodity markets, and balance of payments problems of the United States and other selected countries. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 420 or equivalent.

ECON 422  **The European Economies**  credit: 3 OR 4 hours.
Analyzes the theory, history, and policy issues in the economics of the European Community, including the customs union, common agricultural policy, single market, and economic and monetary union. Discusses the economic interests and concerns of the individual nation-states of Europe. Treats current economic issues of concern to both Europe and the United States. Computer literacy is expected. 3 undergraduate hours. 4 graduate hours. Prerequisite: Credit or current registration in ECON 302 and ECON 303.

ECON 440  **Economics of Labor Markets**  credit: 2 TO 4 hours.
Studies the microeconomic determinants of labor demand and supply, economic effects of unions, and macroeconomic labor market problems. Same as LIR 440. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 302 or equivalent.
ECON 441  **Economics of Human Resources**  credit: 2 TO 4 hours.

Education and training in economic growth; labor force characteristics; occupational structure and future human resources requirements; job information networks; economics of discrimination and underutilization; national human resources policies and programs; and private industry and union human resources planning. Same as LIR 441. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 302 or equivalent.

ECON 450  **Development Economics**  credit: 2 TO 4 hours.

Analyzes the economic problems associated with newly developing nations; emphasizes their economic structures, their factor scarcities, and their programs for development. Not open for graduate credit to graduate candidates in economics. 3 undergraduate hours. 2 or 4 graduate hours. Graduate credit is not given for both ECON 450 and ECON 550 or ECON 551. Prerequisite: ECON 102 and ECON 103 or equivalent. ECON 302 strongly recommended.

ECON 451  **Transition Economies**  credit: 2 TO 4 hours.

Analytical survey of the development, structure and performance of central planning economies; problems in central planning and control; comparative evaluation of strategies and problems of transition to a market economy. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 102 and ECON 103 or consent of instructor. ECON 302 strongly recommended.

ECON 452  **The Latin American Economies**  credit: 2 TO 4 hours.

Focusses on the economic history of the region, the recent industrialization process and its impact, the role of the state and foreign capital, the impact of the recent privatization processes, inflation and stabilization policies, and issues surrounding the distribution of income. Same as ACE 452. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 102 or ECON 103. ECON 302 or ECON 303 strongly recommended.

ECON 462  **Macroeconomic Policy**  credit: 2 OR 3 hours.

Analyzes current macroeconomic policy issues, problems, and techniques; discusses various policy techniques including monetary, fiscal, incomes, and exchange rate policies, and their effectiveness for treating inflation, unemployment, productivity, resource and exchange rate problems. May emphasize current issues in developed economies or in emerging market economies. 3 undergraduate hours. 2 or 3 graduate hours. Prerequisite: ECON 303 or equivalent.

ECON 465  **Mathematical Economics**  credit: 2 TO 4 hours.

Introduction to game theory with applications to economics; emphasizes the analysis of static and dynamic games with or without complete information. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One of MATH 125, MATH 225, MATH 415; MATH 241 or equivalent; ECON 302.

ECON 471  **Intro to Applied Econometrics**  credit: 2 TO 4 hours.

Introduction to specification, estimation, prediction and evaluation of econometric models, emphasizing the interplay between statistical theory and economic applications. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 203 or equivalent; ECON 302 or ECON 303.

ECON 480  **Industrial Comp and Monopoly**  credit: 2 TO 4 hours.

Analyzes the ways firms and markets are organized, how they interact, outcomes of various types of firm behavior and performance of markets, and causes and types of market failure. Particular emphasis on the contribution of game theory as the equilibrium concept in oligopoly settings. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 302.

ECON 481  **Govt Reg of Economic Activity**  credit: 2 TO 4 hours.

Analysis of economic bases, policies, and consequences of government regulation of economic activity. Reasons for government intervention in market behavior, methods of government intervention, and outcomes are studied. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 302.

ECON 482  **Health Economics**  credit: 3 OR 4 hours.

Economic analysis of the health care industry to explain the demand for and supply of medical care. Includes analysis of behavior of consumers, producers, and insurers; and public policies to regulate the industry and to provide services for the poor and elderly. 3 undergraduate hours. 4 graduate hours. Prerequisite: ECON 302 or consent of instructor.

ECON 483  **Econ of Innovation and Tech**  credit: 2 TO 4 hours.

Examines the economic factors shaping innovation and technical change since the industrial revolution with emphasis on the economic relationship between science and technology and the role of government in technical change. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 102 or equivalent; ECON 302 or consent of instructor.

ECON 484  **Law and Economics**  credit: 2 TO 4 hours.

Applications of economic theory to problems and issues in both civil and criminal law and the effect of legal rules on the allocation of resources; includes property rights, liability and negligence assignment, the use of administrative and common law to mitigate market...
failure, and the logic of private versus public law enforcement. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: ECON 302 or equivalent.

ECON 500  General Microeconomic Theory  credit: 4 hours.
Emphasizes microeconomic theory; principal topics include a review of value and distribution theory, the theory of choice by households and firms, general microeconomic theory, and theoretical developments of current interest. Students may not receive credit for both ECON 500 and ECON 567. Graduate credit for both ECON 302 and ECON 500 is given only upon recommendation of the student's adviser and approval by the Department of Economics. Prerequisite: ECON 102 or equivalent.

ECON 501  Quantitative Analysis for Econ  credit: 4 hours.
Studies topics in optimization: explicit function theorem, multipliers and Kuhn-Tucker conditions; topics in matrix algebra including characteristic roots and vectors, partitioned matrices, quadratic forms, special matrices; topics on difference and differential equations common in economic theory.

ECON 502  Microeconomic Theory I  credit: 4 hours.
Introduction to the models and methods of modern microeconomic theory, concentrating on individual and firm decision making and on industry equilibrium; brief treatment of general equilibrium theory and welfare analysis. Topics include: consumer utility and demand theory; production and cost functions; firm supply, input demand, and price behavior; competitive, monopolistic, and oligopolistic industry analysis; and distribution theory. Prerequisite: ECON 302 and ECON 303, or equivalent; calculus.

ECON 503  Macroeconomic Theory I  credit: 4 hours.
Introduces students to a variety of dynamic general equilibrium models that currently dominate the study of growth and economic fluctuations. These models include: neoclassical growth models, overlapping generations models, CAPM models, search models, and endogenous growth models. In covering these models, the course also seeks to develop a set of techniques for students to use. These techniques include discrete time optimization, continuous time optimization, dynamic programming and model calibration. Prerequisite: ECON 302 and ECON 303, or equivalent; calculus.

ECON 504  Microeconomic Theory II  credit: 4 hours.
General market equilibrium theory and welfare economics; discusses the problems of existence, stability, efficiency, and equity of economic equilibrium; and introduces social choice and the special problems created by public goods, externalities, and uncertainty. Prerequisite: ECON 502.

ECON 505  Macroeconomic Theory II  credit: 4 hours.
Development of modern macroeconomic theory, including disequilibrium theory, optimal short-term stabilization measures, and monetary, fiscal, incomes, and exchange rate policies; large-scale econometric models; linear and neoclassical growth models; aggregate distribution theory; money, capital movements, trade, and growth; optimal growth models; and exhaustible resources and growth. Prerequisite: ECON 503.

ECON 506  Economic Statistics  credit: 4 hours.
Classical statistics and regression analysis; descriptive statistics, probability and point and interval estimation; decision theory; variance analysis; and linear regression and least-squares estimates. Prerequisite: A course in statistics or consent of instructor.

ECON 507  Econometric Analysis  credit: 4 hours.
Part 1: The construction of econometric models; characteristics of models and choice of estimating methods; and estimates of parameters by various methods. Part 2: Bayesian statistics and decision theory. Prerequisite: ECON 506 or equivalent.

ECON 508  Applied Econometrics  credit: 4 hours.
Develops a general methodological basis for searching for quantitative economic knowledge; integrates and gives operational content to the topics of economic, statistical, and econometric theory. Prerequisite: ECON 507 or ECON 574, or equivalent.

ECON 509  General Macroeconomic Theory  credit: 4 hours.
Emphasis on macroeconomic theory; principal topics include a review of Keynesian macroeconomic theory, formal growth theory, and selected business cycle theory. Credit is not given for both ECON 509 and ECON 568. Graduate credit for both ECON 303 and ECON 509 is given only upon recommendation of the student's adviser and approval by the Department of Economics. Prerequisite: ECON 102 and ECON 103 or equivalent.

ECON 511  Public Goods Theory  credit: 4 hours.
In-depth analysis of the theory of public goods; includes public goods and externality theory, public choice, theory of cost-benefit analysis, optimal income redistribution, and fiscal federalism. Prerequisite: ECON 302 or equivalent.

ECON 512  Economics of Taxation  credit: 4 hours.
Theoretical and empirical analysis of the impact of taxation on the economic system; topics include tax equity and excess burden, incentive effects of taxation, tax incidence, structure of major types of taxes (income, consumption, and wealth), normative tax analysis, and taxation in developing economies. Prerequisite: ECON 302 or equivalent.

ECON 513  Demand/Supply/Firms/Households  credit: 4 hours.
Same as ACE 502. See ACE 502.

ECON 514  Urban Economics  credit: 4 hours.
Examines the microeconomic theory of urban land-use and spatial structure (static and dynamic models); analyzes externalities caused by traffic congestion; normative and positive analysis of the provision of local public goods; and public policy issues (i.e., slums and urban decline, pollution). Prerequisite: ECON 502.

ECON 515  Adv Natural Resource Economics  credit: 4 hours.
Same as ACE 510, ENVS 510, and NRES 510. See ACE 510.

ECON 516  Environmental Economics  credit: 4 hours.
Examines both theory and policy applications in the environmental area; selectively reviews the literature to provide a framework for understanding the relevant economic relationships and the criteria appropriate for policy assessment; emphasizes the characteristics of major environmental problems and policy choices; and considers the valuation of environmental amenities and the conflict between environmental quality and growth. Same as ACE 516 and ENVS 511. Prerequisite: ECON 302 or consent of instructor.

ECON 517  Political Economy  credit: 4 hours.
Microeconomic analysis of political decision making processes. Includes social choice, models of political competition, game-theoretic analysis of political institutions and lobbying. Same as PS 548. Prerequisite: ECON 500 or equivalent, or instructor's consent.

ECON 520  International Trade Theory  credit: 4 hours.
The pure theory of international trade, general equilibrium income and welfare, tariffs, the theory of policy ranking, strategic trade policy, customs unions, international trade law and the WTO. Prerequisite: ECON 302 and ECON 303, or equivalent.

ECON 521  Topics in International Econ  credit: 4 hours.
Frontier advanced topics in international economics; subject matter varies. May not be repeated for credit. Prerequisite: ECON 520 and ECON 522, or consent of instructor.

ECON 522  International Financial Econ  credit: 4 hours.
Examines the balance of payments, exchange rate, capital flows and international monetary system; fiscal and monetary policy in open economies. Prerequisite: ECON 302 and ECON 303, or equivalent.

ECON 523  Business International Econ  credit: 4 hours.
Provides the business student with a working knowledge of the principles of international economics, issues in the current international business environment, U. S. and international trade law, and current policy issues and debates. Considers the basic causes and consequences of international trade, the foreign exchange market and theory of exchange rate determination, the U. S. trade deficit, the international monetary system, and antidumping and countervailing duty law, copyright and patent infringement law, the General Agreement on Tariffs and Trade, the rudiments of strategic trade theory, and selected policy issues varying by year. Prerequisite: Familiarity with intermediate microeconomics at the level of ECON 302.

ECON 530  General Economic History  credit: 4 hours.
Treatment of selected topics in the economic history of industrialized economics by applying economic theory and quantitative methods of analysis to historical problems; exploration of the implications for contemporary work in economics. Prerequisite: Graduate standing in economics or consent of instructor.

ECON 531  American Economic History  credit: 4 hours.
Emphasizes, but is not limited to, the reading and criticism of current literature in American economic history; attempts to facilitate understanding of the use of economic analysis in interpreting events framed in historical context; includes British colonial policy, trade and tariffs, industrialization, technology, slavery and the southern economy, land policy, agriculture, transportation and internal improvements, capital mobilization and financial organization, and the measurement of economic growth. Prerequisite: Graduate standing in economics or consent of instructor.

ECON 532  Economic History of Europe  credit: 4 hours.
Major lines of development since 1450; comparative study of forces and institutions inimical or favorable to growth; and selected readings on organization of economic activity, role of governments and the entrepreneur, commercial policy, monetary systems, land tenure, process of capital formation, industrialization, etc. Prerequisite: Consent of instructor.

ECON 540  Labor Economics I  credit: 4 hours.
Survey of recent trends in the labor force, of real and money earnings, and of the distribution of national income used as the basis for a critical economic analysis of contemporary English and American wage theory. Same as LIR 540. Prerequisite: ECON 302 and ECON 303.

ECON 541 Labor Economics II credit: 4 hours.
Economic issues and implications involved in hours of work, employment and unemployment, and trade union institutionalism (the impact of the trade union upon the basic institution of a free enterprise economy); emphasis in all cases on the development of appropriate public policy. Same as LIR 541. Prerequisite: ECON 302 and ECON 303.

ECON 542 Collective Bargaining credit: 4 hours.
Same as LIR 542. See LIR 542.

ECON 543 Workplace Dispute Resolution credit: 3 OR 4 hours.
Same as LAW 665 and LIR 543. See LIR 543.

ECON 545 Econ of Ed, Hlth & Hum Capital credit: 4 hours.
Same as EOL 518. See EOL 518.

ECON 546 Econ of Development and Growth credit: 4 hours.
Review and analysis of the theories and patterns of growth in developed and underdeveloped economies; the process and impact of import substitution industrialization; trade and economic development; the role of the state and privatization in the development process; agricultural stagnation and modernization. Prerequisite: ECON 302 and ECON 303, or equivalent.

ECON 547 Topics in Development Econ credit: 4 hours.
Analyzes the newly developing economies, with emphasis on institutional factors affecting development and economic policy relating to development. Prerequisite: ECON 550.

ECON 548 Computable G E Modeling credit: 4 hours.
Discusses problems and methods of building social accounting matrices and computable general equilibrium (CGE) models; provides hands-on experience with CGE models with a series of PC-based exercises. The exercises demonstrate a number of techniques for constructing CGE models and show applications of these models to a variety of economic policy problems in developing countries such as food subsidies, international trade restrictions, foreign debt, and sectoral investment priorities. Prerequisite: ECON 500 and ECON 509 or equivalent; MATH 220 or MATH 221, or equivalent.

ECON 549 Economics of Transition credit: 4 hours.
Examines the processes of changes taking place in transition economies, with a focus on organizational and institutional issues. Focus on developing an understanding of mechanisms and constraints of economic transition and demonstrating how economic tools can be used for developing such an understanding. Students may not receive credit for both this course and ECON 451. Prerequisite: ECON 302.

ECON 550 Adv Topics in Econ Theory I credit: 4 hours.
Study at an advanced level of one or more of the following possible topics: economics of externalities, advanced aggregate economic theory, theory of central planning, investment theory, consumer behavior theory, capital theory, welfare economics, inflation theory, income distribution theory, or other topics. May be repeated. Prerequisite: ECON 502 and ECON 503, or consent of instructor.

ECON 551 Adv Topics in Econ Theory II credit: 4 hours.
Study at an advanced level of one or more of the following possible topics: economics of externalities, advanced aggregate economic theory, theory of central planning, investment theory, consumer behavior theory, capital theory, welfare economics, inflation theory, income distribution theory, or other topics. May be repeated. Prerequisite: ECON 502 and ECON 503, or consent of instructor.

ECON 552 Monetary Theory credit: 4 hours.
Micro- and macroeconomic theories of the supply of and demand for money; money substitutes and their significance; review of current empirical research; money in closed economy, macroeconomic, and static general equilibrium models; and analysis of inflation and unemployment. Prerequisite: Consent of instructor.

ECON 553 The Theory of Monetary Policy credit: 4 hours.
Theories of money; money in dynamic models; money in open economy macroeconomic models; stabilization policy; and international aspects of monetary theory. Prerequisite: Consent of instructor.

ECON 554 Math Econ I credit: 4 hours.
Studies quantitative techniques useful in economic analysis and decision making; mathematical programming; input-output analysis; point-set theory and game theory; existence, optimality, and stability conditions for static general equilibrium; and activity analysis, including welfare economics. Prerequisite: MATH 415; ECON 502 and ECON 503, or equivalent.
ECON 566  **Math Econ II**  credit: 4 hours.
Studies quantitative techniques useful in economic analysis and decision making; single and systems of difference and differential equations; dynamic programming; Pontryagin maximum principle; interaction of multiplier and accelerator; von Neumann model; Turnpike theorem; growth models; and control systems. Prerequisite: MATH 415; ECON 502 and ECON 503, or equivalent.

ECON 567  **Microeconomics for Business**  credit: 4 hours.
Microeconomics for professional business students. Shows relevance of value and distribution theories for business managers. Includes demand and supply theory, consumer choice, production and cost theory, industrial structure, and wage and capital theory. Intended for students in the Master of Business Administration program. Students may not receive credit for both ECON 567 and ECON 302 or ECON 500. Prerequisite: Enrollment is often restricted to students in specialized programs.

ECON 568  **Macroeconomics for Business**  credit: 4 hours.
Development of short run macroeconomic models. Analysis of private sector behavior functions, and government policy alternatives. Extensions for open economy models and growth models. Intended for students in the Master of Business Administration program. Students may not receive credit for both ECON 568 and ECON 303 or ECON 509. Prerequisite: Enrollment is often restricted to students in specialized programs.

ECON 574  **Econometrics I**  credit: 4 hours.
Estimation of parameters for single-equation models; tests of hypotheses and confidence regions for regression models; large-sample theory in single-equation models; and Bayesian statistics in regression models. Prerequisite: MATH 415 and STAT 400.

ECON 575  **Econometrics II**  credit: 4 hours.
Considers the specification of models with systems of simultaneous equations; identification problem, distributed lag models, K-class estimators, maximum likelihood estimators, three-stage least-squares, and effects of specification errors. Prerequisite: ECON 574.

ECON 576  **Time Series Analysis in Econ**  credit: 4 hours.
Modern time series analysis techniques for handling economic data which arises in a happenstance fashion through time and their application to specific economic problems. Prerequisite: ECON 507 or STAT 578, or equivalent.

ECON 577  **Topics in Econometrics**  credit: 4 hours.
Examines some standard econometric problems from the Bayesian perspective and compares Bayesian and classical inference. Prerequisite: ECON 574.

ECON 580  **Industrial Organization**  credit: 4 hours.
Theory of the organization of markets and firms, behavior of firms, functioning of competitive systems, and performance of markets.

ECON 581  **Govt Regulation of Industry**  credit: 4 hours.
Microeconomic and econometric analyses of market failure and government response in selected industries; topics include economic effect of regulation, bureaucratic behavior, optimal policy, and strategies for regulatory reform. Prerequisite: ECON 502; ECON 580; or consent of Instructor.

ECON 582  **Empirical Ind Organization**  credit: 4 hours.
Empirical Methods in Industrial Organization. Topics include: detection of anticompetitive behavior; estimation techniques that allow for product differentiation, endogenous entry and intertemporal decision-making; estimation and testing of auctions and other asymmetric information models.

ECON 590  **Individual Study and Research**  credit: 0 TO 4 hours.
Directed reading and research. Approved for both letter and S/U grading.

ECON 598  **Workshop and Research Seminar**  credit: 2 hours.
Workshops are offered in all areas of specialization in which graduate students are writing Ph.D. dissertations. The specific format varies, but in general workshop sessions include presentations by graduate students of thesis research, by faculty members of their current research, and by occasional outside speakers. A minimum of 4 hours of ECON 598 is required of all students in the Ph.D. program. Approved for S/U grading only. Prerequisite: Admission to the Department of Economics Ph.D. program.

ECON 599  **Thesis Research**  credit: 0 TO 16 hours.
Preparation of thesis required of all students writing master's or doctoral theses in economics. Approved for S/U grading only. May be repeated.
Educational Practice

Teacher Education, Council on
Executive Director: Chris Roegge

: CTE Office, 505 E. Green, Ste. 203, Champaign; Offices for Student Teaching: Agricultural Education, 133 Bevier Hall; Visual Arts Education, 118 Art & Design Building; Early Childhood and Elementary Education, 398 Education Building; Foreign Language, 2070B FLB; Kinesiology, 129 Freer Hall; Library Science, 501 E. Daniel, Rm 320; Music Education, 3022 Music Building; Secondary Education (English, Mathematics, Sciences, and Social Science), 398 Education Building; Special Education, 288 Education Building.
Phone: See web site for phone numbers.
www.ed.uiuc.edu/cte

EDPR 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Approved for S/U grading only. May be repeated.

EDPR 250  **School & Community Experiences**  credit: 0 TO 4 hours.
Early field experiences in teacher education, including observation and laboratory experiences in public schools: designed to provide opportunities for career exploration, professional orientation, the development of insight into the interrelationship of theory and practice, and the place of the student in the educational process. Approved for S/U grading only. Prerequisite: Consent of instructor.

EDPR 420  **Ed Prac Students with Sp Needs**  credit: 2 TO 12 hours.
Course in practice teaching which provides teaching experience with exceptional children. May be repeated for 18 hours, 12 of which may be taken in the same term. Approved for S/U grading only. Prerequisite: Satisfactory completion of all requirements of the Council on Teacher Education Undergraduate or Graduate Common Assessment Plan for Initial Certification (http://www.cote.uiuc.edu).

EDPR 432  **Ed Prac in Elementary Ed**  credit: 2 TO 8 hours.
Course in practice teaching to meet certification requirements for teaching in the elementary school. Approved for S/U grading only. Prerequisite: CI 420 or CI 406 as required by the student's curriculum; Satisfactory completion of all requirements of the Council on Teacher Education Undergraduate or Graduate Common Assessment Plan for Initial Certification (http://www.ed.uiuc.edu/cte/cap).

EDPR 438  **Ed Prac in Sp Fields in Ele Ed**  credit: 2 TO 8 hours.
Course in student teaching to meet requirements for certification in special fields at the elementary school level. Approved for S/U grading only. Prerequisite: For students in the early childhood education curriculum, CI 420 required and concurrent enrollment in CI 421; Satisfactory completion of all requirements of the Council on Teacher Education Undergraduate or Graduate Common Assessment Plan for Initial Certification (http://www.cote.uiuc.edu).

EDPR 442  **Ed Prac in Secondary Ed**  credit: 2 TO 8 hours.
Course in practice teaching to meet certification requirements for teaching in the secondary schools. Sections ALB, ALC, ALE, ALM, ALP may be repeated once for credit. Approved for S/U grading only. Prerequisite: Satisfactory completion of all requirements of the Council on Teacher Education Undergraduate or Graduate Common Assessment Plan for Initial Certification (http://www.cote.uiuc.edu).
Education

College of Education
Asst Dean for Academic Affairs: Brenda M. Clevenger
120 Education, MC-708: 1310 S. 6th Street, Champaign, IL 61820
Phone: 217-333-2800
www.ed.uiuc.edu/saao

EDUC 101  **Education Orientation Seminar**  credit: 1 hours.
Informational orientation seminar for Education majors to enhance their understanding of college life and the field of education as a profession.
EIL 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
      May be repeated.

EIL 214  TESL in the Elementary School  credit: 2 hours.
      On-site practical experience in an elementary school, involving at least 100 hours of classroom observations, consultations, teaching, tutoring, and assisting, to acquaint students with the many facets of ESL/bilingual education in a public school setting. Hours to be arranged with the cooperating teacher. Satisfies one requirement for those who wish to obtain an Illinois ESL endorsement on an Illinois teaching certificate.

EIL 215  TESL in the Secondary School  credit: 2 hours.
      On-site practical experience in a secondary school, involving at least 100 hours of classroom observations, consultations, teaching, tutoring, and assisting, to acquaint students with the many facets of ESL/bilingual education in a public school setting. Hours to be arranged with the cooperating teacher. Satisfies one requirement for those who wish to obtain an Illinois ESL endorsement on an Illinois teaching certificate.

EIL 405  Intro to Applied Linguistics  credit: 2 TO 4 hours.
      Same as LING 405. See LING 405.

EIL 411  Intro to TESL Methodology  credit: 3 OR 4 hours.
      Introduction to TESL/TEFL, including the concept of "communicative competence" and its components; teaching contexts; current research on teaching second language skills; syllabus, lesson, and materials design; and classroom techniques. Includes a teaching practicum. 3 undergraduate hours. 4 graduate hours.

EIL 422  Engl Grammar for ESL Teachers  credit: 3 OR 4 hours.
      Adaptation of modern English grammar to meet the needs of the ESL/EFL teacher, with special emphasis on the development of knowledge and skills that can be used in the analysis of the syntax, lexis and pragmatics of English. Same as ENGL 404. 3 undergraduate hours. 4 graduate hours.

EIL 435  Neuroling of Bilingualism  credit: 3 OR 4 hours.
      Same as LING 435 and SLS 435. See LING 435.

EIL 445  Second Lang Reading & Writing  credit: 3 OR 4 hours.
      Introduces students to second language reading and writing, including theory, research, and practical application. 3 undergraduate hours. 4 graduate hours. May be taken concurrently with EIL 489 with consent of instructor. Prerequisite: Consent of instructor.

EIL 450  Sociolinguistics I  credit: 2 TO 4 hours.
      Same as LING 450. See LING 450.

EIL 456  Lang and Social Interaction I  credit: 3 OR 4 hours.
      The course goals are to develop an understanding of the characteristics of naturally-occurring talk; several methodologies for collecting and studying it; the relationship of talk to human conduct, society and culture, including cross-cultural (mis)understanding; and to relate these insights to language learning, language teaching methodologies, and materials design. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of instructor.

EIL 460  Principles of Language Testing  credit: 3 OR 4 hours.
      Studies theoretical and practical aspects of language testing. Examines purposes and types of language tests in relation to theories of language use and language teaching goals; discusses testing practices and procedures related to language teaching and language research; and includes the planning, writing, and administration of tests, basic descriptive statistics, and test analysis. A project is required. Same as EPSY 487, FR 460, GER 460, ITAL 460, PORT 460, SLS 460, and SPAN 460. 3 undergraduate hours. 4 graduate hours. Prerequisite: EIL 489 or consent of instructor.

EIL 482  Computer Foreign Lang Tchg  credit: 4 hours.
EIL 487  **Topics in Second Lang Studies**  credit: 2 OR 4 hours.
Topics on practical applications of second language studies for classroom practice. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

EIL 488  **English Phon & Morph for TESL**  credit: 3 OR 4 hours.
Applications of linguistics to language learning with special emphasis on learning the sound system of English. Same as LING 488. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of instructor.

EIL 489  **Theoretical Foundations of SLA**  credit: 3 OR 4 hours.
General introduction to second language acquisition (SLA) theory. Examines nativist, interactionist and cognitive approaches to SLA and explores the role of learner characteristics. Same as FR 481, GER 489, ITAL 489, LING 489, PORT 489, SLS 489, and SPAN 489. 3 undergraduate hours. 4 graduate hours. Prerequisite: An introductory course in linguistics or consent of instructor.

EIL 511  **Task Based Language Teaching**  credit: 4 hours.
Introduces students to current issues in the theory and practice of communicative language teaching. Discusses the notion that communication is a social event from three perspectives: theoretical linguistics; applied linguistics; and classroom teaching. Specific questions addressed range from a consideration of the nature of applied linguistics to issues related to student autonomy. Prerequisite: EIL 411 and consent of instructor.

EIL 556  **Lang and Social Interaction II**  credit: 2 OR 4 hours.
Enables students to pursue advanced studies of the characteristics of naturally occurring talk and of research methodology for analyzing this talk. The goals are to develop understanding of the relationship of talk to human conduct, human society and culture, and to develop research skills in the collection and analysis of naturally occurring talk. Same as ITAL 587, PORT 587, and SPAN 587. Prerequisite: EIL 450 or EIL 456.

EIL 563  **College Teaching Foreign Langs**  credit: 2 OR 4 hours.
Same as FR 563, GER 563, ITAL 563, PORT 563, RUSS 563, and SPAN 563. See FR 563.

EIL 574  **Design & Stats in Lang Study**  credit: 4 hours.
Same as LING 514. See LING 514.

EIL 575  **Topics in Applied Linguistics**  credit: 4 hours.
Same as LING 515. See LING 515.

EIL 580  **Classroom Lang Acquisition**  credit: 4 hours.
Same as FR 580, GER 580, ITAL 580, PORT 580, SLS 580, and SPAN 580. See SPAN 580.

EIL 584  **Theories in SLA**  credit: 4 hours.
Same as CI 584, EALC 584, EPSY 563, FR 584, GER 584, ITAL 584, LING 584, PORT 584, SLS 584, and SPAN 584. See SPAN 584.

EIL 587  **Seminar in Second Lang Studies**  credit: 2 OR 4 hours.
May be repeated if topics vary. Prerequisite: Consent of instructor.

EIL 588  **Generative Phon in Engl Tchg**  credit: 4 hours.
Generative phonological analyses of English and the teaching of English pronunciation: reevaluation of teaching goals, content, presentation, and methodology; required projects involve research into English phonology leading to the development and evaluation of lesson materials for ESL classes. Prerequisite: EIL 411 and EIL 488.

EIL 590  **Sem Second Lang Learn**  credit: 4 hours.
Same as EALC 588, FR 588, GER 588, ITAL 588, LING 588, PORT 588, SLS 588, and SPAN 588. See SPAN 588.

EIL 591  **Research in Special Topics**  credit: 1 TO 4 hours.
Independent study under guidance of a member of the graduate faculty. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

EIL 599  **Thesis Research**  credit: 0 TO 8 hours.
Individual direction of research and thesis writing. Approved for S/U grading only. May be repeated to a maximum of 8 hours. Prerequisite: Consent of thesis supervisor.
ENG 100  Engineering Orientation  credit: 0 hours.
Orientation required of new freshmen in the College of Engineering. Approved for S/U grading only.

ENG 198  Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in engineering intended to augment the existing curriculum. See Class Schedule or college course information for topics and prerequisites. Approved for both letter and S/U grading. May be repeated in the same or separate terms if topics vary.

ENG 199  Undergraduate Open Seminar  credit: 0 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

ENG 201  Cooperative Engrg Seminar  credit: 0 hours.
Discussion seminar addressing insights students have gained as a result of their co-op experience. Includes presentations by co-op participants and discussion of presentation skills. Approved for S/U grading only. For on-campus Cooperative Education students only.

ENG 202  Cooperative Engrg Practice  credit: 0 hours.
Full-time practice of engineering in an off-campus government, industrial or research laboratory environment. Written work report, on-line Internship and Co-op Experience Report, and on-line ABET report required. Approved for S/U grading only. Approval of the Director of College of Engineering Experiential Learning Programs is required. For Cooperative Education students only.

ENG 210  Engineering Apprenticeship  credit: 0 hours.
Part-time practice of engineering science in an on-campus research laboratory environment; summary report required. Approved for both letter and S/U grading. May be repeated. Approval of the Director of College of Engineering Work Experience Programs is required.

ENG 298  Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in engineering intended to augment the existing curriculum. See Class Schedule or college course information for topics and prerequisites. Approved for both letter and S/U grading. May be repeated in the same or separate terms if topics vary.

ENG 299  Engineering Study Abroad  credit: 0 TO 18 hours.
Provides placeholder Illinois credit for foreign study and/or a mechanism to maintain continuous Illinois enrollment while studying abroad. A detailed proposal must be submitted by the student for approval by the department in which the student is studying and the college office prior to such study abroad. Final determination of credit and its application toward the degree is made after a review of the student's work abroad by the college office. (Summer Session, 0 to 6 hours).

ENG 300  Engrg Transfer Orientation  credit: 0 hours.
Orientation required of off-campus transfer students in the College of Engineering. Approved for S/U grading only.

ENG 310  Engineering Internship  credit: 0 hours.
Full-time practice of engineering in an off-campus government, industrial, or research laboratory environment. Written work report, on-line Internship and Co-op Experience report and on-line ABET report required. Approved for S/U grading only. Approval of the Director of College of Engineering Experiential Learning Programs is required. May be repeated.

ENG 360  Lect in Engrg Entrepreneurship  credit: 1 hours.
Fundamental concepts of entrepreneurship and commercialization of new technology in new and existing businesses. Guest speaker topics vary, but typically include evaluation of technologies and business ideas in genera; commercializing new technologies; financing through private and public sources; legal issues; product development; marketing; international business issues. Same as TE 360.

ENG 398  Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in engineering intended to augment the existing curriculum. See Class Schedule or college course information for topics and prerequisites. Approved for both letter and S/U grading. May be repeated in the same or separate terms if topics vary.

ENG 491 Interdisciplinary Design Proj credit: 1 TO 4 hours.
Provides a disciplined, multi-department, team-structured project design experience which has an overall (or major phase) completion date at the end of the term. Students participate in engineering activities with individual as well as team responsibilities. Projects involve design specification through a proposal, analyses of cost and other tradeoffs among alternative designs, design review, fabrication and assembly, functional and environmental testing, and demonstrations (as applicable). Reports are prepared and presentations are made at the end of each term. Lecture-lab format. 1 to 4 undergraduate hours. Senior standing required. May be repeated. Credit toward the degree is determined by the student's major department. Prerequisite: Consent of instructor.

ENG 498 Special Topics credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in engineering intended to augment the existing curriculum. See Class Schedule or college course information for topics and prerequisites. Approved for both letter and S/U grading. May be repeated in the same or separate terms if topics vary.

ENG 510 Engineering Practice credit: 0 hours.
Full-time practice of engineering in an off-campus government, industrial or research laboratory environment. Written work report, on-line Internship and Co-op Experience report, and on-line ABET report required. Approved for S/U grading only. Approval of the Director of College of Engineering Experiential Learning Programs is required. May be repeated.

ENG 565 Technol Innovation & Strategy credit: 2 hours.
Introduces concepts and frameworks for analyzing how firms can create, commercialize and capture value from technology-based products and services. Focuses on business, commercialization, and management aspects of technology. Highlights why some firms that have successfully commercialized technology products and services as a new entrant fail to sustain their success as technology changes and evolves. Same as TE 565. Prerequisite: STAT 400.

ENG 566 Finance for Engineering Mgmt credit: 2 hours.
Cornerstone financial concepts for engineering management to enable analysis of engineering projects from a financial perspective: income statements; the balance sheet; cash flow statements; corporate organization; the time value of money; net present value; discounted cash flow analysis; portfolio theory. Same as TE 566. Prerequisite: STAT 400.

ENG 598 Special Topics credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in engineering intended to augment the existing curriculum. See Class Schedule or college course information for topics and prerequisites. Approved for both letter and S/U grading. May be repeated in the same or separate terms if topics vary.
Engineering Honors

Engineering Honors
Program Administrator: Charles L. Tucker III
Program Office: 206 Engineering Hall, 1308 West Green, Urbana
Phone: 333-2280
www.engr.uiuc.edu

ENGH 195  **Honors Seminar**  credit: 1 TO 4 hours.
Special lecture sequences and/or discussion groups for freshman James Scholars to enable them to explore various aspects of technology.

ENGH 397  **Honors Independent Study**  credit: 1 TO 4 hours.
Individual investigations of any phase of engineering selected by James Scholars in engineering and approved by the Engineering Academic Affairs Office. May be repeated. Prerequisite: Consent of instructor.
ENGL 101  **Intro to Poetry**  credit: 3 hours.
Reading and discussion of representative poems of several periods and types. Credit is not given for both ENGL 101 and ENGL 107.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ENGL 102  **Intro to Drama**  credit: 3 hours.
Reading and discussion of representative plays of several periods and types.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ENGL 103  **Intro to Fiction**  credit: 3 hours.
Reading and discussion of representative fiction of several periods and types. Credit is not given for both ENGL 103 and ENGL 109.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ENGL 104  **Intro to Film**  credit: 3 hours.
Thoughtful viewing of diverse films (in required weekly screenings), along with ample discussion and critical reading and writing, to gain understanding of cinematic expression and of film's capacity to entertain and to exert artistic and social influence. Same as CINE 104.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ENGL 106  **Literature and Experience**  credit: 3 hours.
Understanding of the relationship between literature and human experience through the study of significant, recurrent themes. May be repeated one time if topics vary.

ENGL 109  **Intro to Fiction-ACP**  credit: 3 hours.
Course is identical to ENGL 103 except for the additional writing component. Credit is not given for both ENGL 109 and ENGL 103.
Prerequisite: Completion of campus Composition I general education requirement.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Advanced Composition

ENGL 110  **Intro Lit Study for Non-Majors**  credit: 3 hours.
Introduction to literary genres and literary interpretation, with an emphasis on close reading for non-English majors. Students may not receive credit for both ENGL 110 and ENGL 200.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ENGL 112  **Literature of Global Culture**  credit: 3 hours.
Through literature and films, studies the impact of historical change on individuals and on cultures, the breakdown of borders, the building of new hierarchies of domination and exploitation, the contact and collision between the local and the global, and the transnational and problematic processes of cultural globalization. Same as CWL 112. This course can be used to fulfill either Western or Nonwestern general education categories, but not both.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

ENGL 113  **Intro to Comedy**  credit: 3 hours.
Selective introduction to the theory and practice of comedy; examines a number of influential theories of comedy and a variety of comic forms including poetry, novels, essays, plays, and short stories.

ENGL 114  Bible as Literature  credit: 3 hours.
Same as CWL 111 and RLST 101. See RLST 101.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ENGL 115  Intro to British Literature  credit: 3 hours.
Study of selected major writings.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

ENGL 116  Intro to American Literature  credit: 3 hours.
Study of selected major writings.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

ENGL 117  Shakespeare on Film  credit: 3 hours.
Close study of a selection of Shakespeare's plays as literary and dramatic texts and as adaptations for cinema and television. Same as CINE 117.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ENGL 119  Literature of Fantasy  credit: 3 hours.
Surveys masterworks in the romance tradition from Shakespeare's time to the present; as distinct from science fiction, the materials feature magic and the supernatural rather than technology; and include stage romance, fairy tale, horror tale, and fantasy-novel. Individual works are set in their historical and literary contexts. Same as CWL 119.

ENGL 120  Science Fiction  credit: 3 hours.
Literary and historical study of science fiction from Mary Shelley to Ursula K. LeGuin with particular emphasis on the achievement of science fiction as a literary form in the romance tradition.

ENGL 150  Black Literature in America  credit: 3 hours.
Same as AFRO 105. See AFRO 105.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

ENGL 191  Freshman Honors Tutorial  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars. May be repeated one time. Prerequisite: Consent of honors advisor.

ENGL 198  Freshman Honors Seminar  credit: 4 hours.
Introduction to the study of literature, with emphasis on individual work in fundamental problems of literary analysis; works studied are usually a combination either of short poems and short stories or of novels and plays. May be repeated one time if topics vary. Prerequisite: James Scholar standing or other designation as a superior student.

ENGL 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

ENGL 200  Intro to the Study of Lit  credit: 3 hours.
Introduction to the study of literature, with an emphasis on interpretive theories and methods as well as the formal distinctions between the major literary genres. For majors only.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ENGL 202  Medieval Lit and Culture  credit: 3 hours.
British and continental authors (including Chaucer) read in modern English. Same as CWL 253 and MDVL 201. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

**ENGL 204  Renaissance Lit and Culture  credit: 3 hours.**
Readings in English and continental literary masterpieces with attention to significant cultural influences. Same as CWL 255. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

**ENGL 206  Enlightenment Lit and Culture  credit: 3 hours.**
Readings in English and continental literature of the eighteenth century, with attention to significant cultural influences. Same as CWL 257. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

**ENGL 207  Romantic Lit and Culture  credit: 3 hours.**
Study of literature, philosophy, visual arts, and social criticism of the British Romantic period, with attention to broader cultural issues. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

**ENGL 208  Victorian Lit and Culture  credit: 3 hours.**
Study of literature, philosophy, visual arts, and social criticism of the British Victorian period, with attention to broader cultural issues. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

**ENGL 209  British Literature to 1798  credit: 3 hours.**
Historical and critical study of selected works of British literature to 1798 in chronological sequence. Prerequisite: Completion of the Composition I requirement and ENGL 200.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

**ENGL 210  British Lit 1798 to Present  credit: 3 hours.**
Historical and critical study of selected works of British literature after 1798 in chronological sequence. Prerequisite: Completion of the Composition I requirement and ENGL 200.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

**ENGL 211  Intro to Mod African Lit  credit: 3 hours.**
Same as AFST 210 and CWL 210. See AFST 210.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

**ENGL 213  Modernist Lit and Culture  credit: 3 hours.**
Study of literature, philosophy, visual and performing arts, social criticism, and popular sciences of the Anglo-American Modern period (1880-1920), with attention to broad cultural issues. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

**ENGL 218  Introduction to Shakespeare**  credit: 3 hours.
Representative readings of Shakespeare's drama and poetry in the context of his age, with emphasis on major plays; selections vary from section to section. Does not fulfill Shakespeare requirement for the English major. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 223  Jewish Storytelling**  credit: 3 hours.
Same as CWL 221, RLST 220, and YDSH 220. See YDSH 220.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 241  Beginnings of Modern Poetry**  credit: 3 hours.
American and British poets including Frost, Robinson, Sandburg, Lindsay, Hardy, Hopkins, Housman, Yeats, Lawrence, the Imagists, and the early Pound and Eliot. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

**ENGL 242  Poetry Since 1940**  credit: 3 hours.
Prerequisite: Completion of the Composition I requirement.

**ENGL 243  Modern Drama I**  credit: 3 hours.
Ibsen to O'Neill. Same as CWL 265. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 244  Modern Drama II**  credit: 3 hours.
Pirandello to the present. Same as CWL 266. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 245  The Short Story**  credit: 3 hours.
Historical and critical study of the short story (American and European) from the early nineteenth century to the present. Same as CWL 267. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 247  The British Novel**  credit: 3 hours.
Critical study of representative British novels from different literary periods. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 248  Brit, Amer & Contin Fiction**  credit: 3 hours.
Examination of important thematic and structural relationships - influences, parallels, and variations - among selected major works of the nineteenth and twentieth centuries; readings chosen from works of Bronte, Hardy, Lawrence, Woolf, James, Faulkner, Bellow, Oates, Dostoievsky, Tolstoy, Stendhal, Flaubert, Camus, Kafka, Mann, Hesse, Moravia, and Pavese. All works read in English. Same as CWL 269. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 250  The American Novel to 1914**  credit: 3 hours.
Critical study of selected American novels from the late eighteenth century to 1914. Prerequisite: Completion of the Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

ENGL 251  The American Novel Since 1914  credit: 3 hours.
Critical study of selected American novels from 1914 to the present. Prerequisite: Completion of the Composition I requirement.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

ENGL 255  Survey of American Lit I  credit: 3 hours.
American literature and its cultural backgrounds to 1870. Prerequisite: Completion of the Composition I requirement and ENGL 200 or ENGL 101.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

ENGL 256  Survey of American Lit II  credit: 3 hours.
American literature and its cultural backgrounds after 1870. Prerequisite: Completion of the Composition I requirement and ENGL 200 and ENGL 101.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

ENGL 259  Afro-American Literature I  credit: 3 hours.
Historical and critical study of Afro-American literature in its social and cultural context from the beginning to 1915. Same as AFRO 259 and CWL 259. Prerequisite: Completion of the Composition I requirement.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

ENGL 260  Afro-American Literature II  credit: 3 hours.
Historical and critical study of Afro-American literature in its social and cultural context since 1915. Same as AFRO 260 and CWL 260. Prerequisite: Completion of the Composition I requirement.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

ENGL 265  Intro to American Indian Lit  credit: 3 hours.
Same as AIS 265. See AIS 265.

ENGL 267  Grimms' Fairy Tales in Context  credit: 3 hours.
Same as CWL 250 and GER 250. See GER 250.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult
UIUC: Advanced Composition

ENGL 268  The Holocaust in Context  credit: 3 hours.
Same as CWL 271 and GER 260. See GER 260.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult
UIUC: Advanced Composition

ENGL 272  Minority Images in Amer Film  credit: 4 hours.
Writing-intensive course which explores how a range of films made in the United States have represented diverse ethnicities and cultures in relation to each other and to dominant American media conventions and social ideas. A comparative, case study approach examines racial and gender stereotyping, historical and economic factors, and reactions of various audiences to the films. Same as AFRO 272. Prerequisite: Fulfillment of the Composition I English requirement; sophomore standing or above.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)
UIUC: Advanced Composition

**ENGL 273  American Cinema Since 1950**  credit: 3 hours.
Explores key issues in American cinema from 1950 to the present, structured around central problems of film studies (such as authorship, genre, narratology, film style, gender analysis, and the spectacle of violence), contextualizing them within moments of major transition in the American film industry. Viewing and discussion of a major film each week. Same as CINE 273. Prerequisite: Completion of the Composition I requirement.

**ENGL 274  Literature and Society**  credit: 3 hours.
Major literary works presented within the context of social issues of their time. Prerequisite: Completion of the Composition I requirement.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 275  American Indians and Film**  credit: 3 hours.
Same as AIS 275 and CINE 275. See AIS 275.

**ENGL 276  Women Writers**  credit: 3 hours.
Study of British and American women authors. Same as GWS 280. May be repeated to a maximum of 6 hours if topics vary. Prerequisite: Completion of the Composition I requirement.

**ENGL 277  Women in the Lit Imagination**  credit: 3 hours.
Study of the way various writers, both men and women, have portrayed woman's image, social role, and psychology in English or American literature. Same as GWS 281. May be repeated to a maximum of 6 hours if topics vary. Prerequisite: Completion of the Composition I requirement.

**ENGL 278  Jewish Sacred Literature**  credit: 3 hours.
Same as CWL 283 and RLST 283. See RLST 283.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 279  Modern Jewish Literature**  credit: 3 hours.
Surveys imaginative literature by Jewish authors from the Enlightenment to the present, including fiction, poetry, drama, and autobiography written in English or translated from other languages. Same as CWL 284 and RLST 284. Prerequisite: Completion of the Composition I requirement.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 280  Postcolonial Lit in English**  credit: 3 hours.
Examination of selected postcolonial literature, theory, and film as texts that "write back" to dominant European representations of power, identity, gender and the Other. Postcolonial writers, critics and filmmakers studied may include Franz Fanon, Edward Said, Aime Cesaire, Ousmane Sembene, Chinua Achebe, Michelle Cliff, Maheshweta Devi, Buchi Emecheta, Derek Walcott and Marlene Nourbese-Philip. Prerequisite: Completion of the Composition I requirement.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**ENGL 281  Asian American Literature**  credit: 3 hours.
Introduction to Asian American literary studies and culture through the reading of major works of literature selected from but not limited to the following American ethnic subgroups: Chinese, Filipino, Japanese, Korean, Indian, Pakistani, and Vietnamese. Same as AAS 286. Prerequisite: Completion of the Composition I requirement.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

**ENGL 282  Individual Study**  credit: 0 TO 3 hours.
Study of selected topics. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours. Students may register in more than one section per term. Prerequisite: Consent of instructor.

**ENGL 283  Writing About Literature**  credit: 3 hours.
Writing-intensive, variable topic course designed to improve the student's ability to write clear, well-organized, analytically sound and persuasively argued essays relevant to the discipline of the study of literature. Introduces students to some strategies of literary criticism and research through examination of critical texts appropriate to its subject. Prerequisite: Completion of the Composition I requirement; one year of college literature or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ENGL 301  Critical Approaches to Lit  credit: 3 hours.
Introduction to influential critical methods and to the multiple frameworks for interpretation as illustrated by the intensive analysis of selected texts. Prerequisite: ENGL 200 or ENGL 101.

ENGL 325  Topics in LGBT Lit & Film  credit: 3 hours.
Explores topics on representations of non-heteronormative sexuality in canonical and recovered historical texts and in contemporary literature, on literature by LGBT authors, and on theories of sexuality that pertain to systems of textual and cultural meaning. May be repeated in separate terms to a maximum of 6 hours.

ENGL 359  Lit Responses to the Holocaust  credit: 3 hours.
Same as CWL 320, RLSR 320, and YDSH 320. See YDSH 320.

ENGL 362  Introduction to Oral Tradition  credit: 3 hours.
Same as CLCV 363 and CWL 363. See CLCV 363.

ENGL 363  Jewish Immigrant Literature  credit: 3 hours.
Same as YDSH 380. See YDSH 380.

ENGL 373  Special Topics in Film Studies  credit: 3 hours.
Extended investigation of major subjects and issues in cinema and other media; topics vary and typically include studies of author/directors, genres, historical movements, critical approaches, and themes. Same as CINE 373. May be repeated as topics vary to a maximum of 6 hours. Prerequisite: One college-level course in film studies or literature.

ENGL 380  Topics in Writing Studies  credit: 3 hours.
Advanced-level work in the field of Writing Studies. Building upon a traditional disciplinary understanding of writing as rhetoric, this course invites students to call upon sociological, anthropological, and/or ideological approaches to the study of writing in order to understand the myriad ways that writing makes meaning(s). See Class Schedule for topics. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: RHET 105 or equivalent.

ENGL 391  Honors Individual Study  credit: 3 hours.
Study of selected topics. Restricted to English and English education majors with a 3.25 average who are working towards the degree with distinction in English or in English education. May be repeated to a maximum of 6 hours. Prerequisite: Enroll in undergraduate advising office.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ENGL 396  Honors Seminar I  credit: 3 hours.
Themes, Movements, and Forms in British and American Literature. May be repeated if topics vary. Offered every term with varying topics. Prerequisite: A 3.25 grade-point average or consent of the chair of the English Honors Committee. Preference to students in the English Honors program and to English concentrators.

ENGL 397  Honors Seminar II  credit: 3 hours.
Periods in British and American Literature. May be repeated if topics vary. Offered every term with varying topics. Prerequisite: A 3.25 grade-point average or consent of the chair of the English Honors Committee. Preference to students in the English Honors program and to English concentrators.

ENGL 398  Honors Seminar III  credit: 3 hours.
Major British and American Authors. Each seminar considers one or two major authors. May be repeated if topics vary. Prerequisite: A 3.25 grade-point average or consent of the chair of the English Honors Committee. Preference to students in the English Honors program and to English concentrators.

ENGL 401  Intro to Study of Engl Lang  credit: 3 OR 4 hours.
Language theories and modes of language study applied to English. 3 undergraduate hours. 4 graduate hours.

ENGL 402  Descriptive English Grammar  credit: 3 OR 4 hours.
Introduction to the variety and structure of the English language. Same as BTW 402. 3 undergraduate hours. 4 graduate hours.

ENGL 403  History of the English Lang  credit: 3 OR 4 hours.
Language variation and change from the earliest forms of English to the present day, with emphasis on the rise of Standard English and the social, geographic, and cultural aspects of linguistic change in English. 3 undergraduate hours. 4 graduate hours.

ENGL 404  Engl Grammar for ESL Teachers  credit: 3 OR 4 hours.
Same as EIL 422. See EIL 422.

ENGL 407  Introduction to Old English  credit: 3 OR 4 hours.
Introduction to the English language before AD 1100. Same as MDVL 407. 3 undergraduate hours. 4 graduate hours.

ENGL 411  Chaucer  credit: 3 OR 4 hours.
A selection read in Middle English. Same as MDVL 411. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 415  Early Renaiss Poetry & Prose  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 416  Drama of Shakespeare's Contemp  credit: 3 OR 4 hours.
Tudor and Stuart drama. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 418  Shakespeare I  credit: 3 OR 4 hours.
Earlier tragedies, comedies, and history plays. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 419  Shakespeare II  credit: 3 OR 4 hours.
Mature tragedies, dark comedies, and late romances. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 421  Later Renaiss Poetry & Prose  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 423  Milton  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 426  Earlier 18th C Literature  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 427  Later 18th C Literature  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 428  British Drama 1660-1800  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 429  18th Century Fiction  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 431  British Romantic Literature  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 434  Victorian Poetry & Prose  credit: 3 OR 4 hours.
Study of such major poets as Tennyson, Browning, Arnold, and Hardy; and of prose writers including Carlyle, Mill, Arnold, Pater, and Huxley. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.
ENGL 435  19th C British Fiction  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 441  British Lit 1900-1930  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 442  British Lit Since 1930  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 449  American Lit 1820-1865  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 450  American Lit 1865-1914  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 451  American Lit 1914-1945  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 452  American Lit 1945-Present  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 455  Major Authors  credit: 3 OR 4 hours.
Intensive study of the work of one or two major authors. 3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Prerequisite: One year of college literature or consent of instructor.

ENGL 459  Topics in American Indian Lit  credit: 3 OR 4 hours.
Same as AIS 459.  See AIS 459.

ENGL 460  Lit of American Minorities  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. May be repeated as topics vary to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 461  Topics in Literature  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Prerequisite: One year of college literature or consent of instructor.

ENGL 462  Topics in Modern Fiction  credit: 3 OR 4 hours.
Topics including theme, genre, and literary movements, predominantly in English or American nineteenth- and twentieth-century fiction, with occasional consideration of continental fiction in English translation; topics may vary from term to term. 3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Prerequisite: One year of college literature or consent of instructor.

ENGL 463  Approaches to Oral Tradition  credit: 3 hours.
Same as CLCV 463 and CWL 466.  See CLCV 463.

ENGL 465  Stage Comedy  credit: 3 OR 4 hours.
History and theory of stage comedy. Same as CWL 465. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 466  Topics in Modern Drama  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Prerequisite: One year of college literature or consent of instructor.

ENGL 470  Modern African Fiction  credit: 3 OR 4 hours.
Same as AFST 410, CWL 410, and FR 410.  See AFST 410.

ENGL 475  Lit and Other Disciplines  credit: 3 OR 4 hours.
See Class Schedule for current topics. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: One year of college literature or consent of instructor.

ENGL 476  Topics in Lit & Environment  credit: 3 OR 4 hours.
From the developing field of "ecocriticism" to new historical examinations of canonical writers such as Thomson, Thoreau, or the "nature poets", to the new field of Science Studies, examines a range of specialized topics related to literature and the environment.
3 undergraduate hours. 4 graduate hours. May be repeated in separate terms to a maximum of 6 undergraduate hours or 8 graduate hours.

**ENGL 481  Comp Theory and Practice**  credit: 3 OR 4 hours.
History and theory of written composition; basic rhetorical principles; and guidance and criticism of student writing. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

**ENGL 482  Writing Technologies**  credit: 3 OR 4 hours.
Examines the relationship of computer technology to the larger field of writing studies. Topics include a historical overview of computers and other writing technologies; current instructional practices and their relation to various writing theories; research on word processing, computer-mediated communication, and hypermedia; and the computer as a research tool. Same as LIS 482. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior standing and consent of instructor. Students must have a basic knowledge of word processing.

**ENGL 485  Literature for the High School**  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature or consent of instructor.

**ENGL 500  Intro to Criticism & Research**  credit: 4 hours.
Introductory course in methods and techniques in research and literary criticism.

**ENGL 503  Historiography of Cinema**  credit: 4 hours.
Same as CINE 503 and CWL 503. See CINE 503.

**ENGL 504  Theories of Cinema**  credit: 4 hours.
Same as CINE 504 and CWL 504. See CINE 504.

**ENGL 505  Writing Studies I**  credit: 4 hours.
Reviews theory and research on the social and historical development of writing systems, including consideration of the relationship between oral and written language, writing and other graphic representation systems, alternative technologies, the evolution of writing systems, and the social functions of literacy. Same as CI 563. Prerequisite: Admission to the graduate programs of a unit offering the graduate specialization in Writing Studies, or consent of instructor.

**ENGL 506  Writing Studies II**  credit: 4 hours.
Reviews theory and research on the acquisition of writing, including consideration of cognitive processes employed during writing, the acquisition of writing competence, assessment of writing skill, and methods of instruction in basic and advanced written communication skills. Same as CI 564.

**ENGL 508  Beowulf**  credit: 4 hours.
Same as MDVL 508. Prerequisite: ENGL 507 or consent of instructor.

**ENGL 511  Chaucer**  credit: 4 hours.
Intensive study of important works by Chaucer with emphasis on The Canterbury Tales or Troilus and Criseyde. Same as MDVL 511. May be repeated to a maximum of 8 hours if topics vary.

**ENGL 514  Seminar in Medieval Literature**  credit: 4 hours.
Same as MDVL 514. May be repeated if topics vary. Prerequisite: A college course devoted entirely to an aspect of medieval studies or consent of instructor.

**ENGL 519  Seminar in Shakespeare**  credit: 4 hours.
May be repeated if topics vary. Prerequisite: A college course devoted entirely to an aspect of Shakespeare's work or consent of instructor.

**ENGL 520  Seminar 16th C Literature**  credit: 4 hours.
May be repeated if topics vary. Prerequisite: A college course devoted entirely to an aspect of Renaissance studies or consent of instructor.

**ENGL 524  Seminar in 17th C Literature**  credit: 4 hours.
May be repeated if topics vary. Prerequisite: A college course devoted entirely to an aspect of Renaissance studies or consent of instructor.

**ENGL 527  Seminar in 18th C Literature**  credit: 4 hours.
May be repeated if topics vary. Prerequisite: A college course devoted entirely to an aspect of eighteenth-century studies or consent of instructor.
ENGL 533  Seminar Romantic Lit  credit: 4 hours.
May be repeated if topics vary. Prerequisite: A college course devoted entirely to an aspect of Romantic studies or consent of instructor.

ENGL 537  Seminar Victorian Lit  credit: 4 hours.
May be repeated if topics vary. Prerequisite: A college course devoted entirely to an aspect of Victorian studies or consent of instructor.

ENGL 543  Seminar Mod British Lit  credit: 4 hours.
May be repeated if topics vary. Prerequisite: One college course devoted entirely to an aspect of modern British studies or consent of instructor.

ENGL 547  Seminar Earlier American Lit  credit: 4 hours.
May be repeated if topics vary. Prerequisite: One college course devoted entirely to an aspect of American studies or consent of instructor.

ENGL 553  Seminar Later American Lit  credit: 4 hours.
May be repeated if topics vary. Prerequisite: One college course devoted entirely to an aspect of American literature or consent of instructor.

ENGL 559  Seminar Afro-American Lit  credit: 4 hours.
May be repeated if topics vary. Prerequisite: One college course devoted entirely to an aspect of American literature or consent of instructor.

ENGL 563  Seminar Themes and Movements  credit: 4 hours.
May be repeated if topics vary. Prerequisite: One year of graduate study of literature or consent of instructor.

ENGL 564  Seminar Lit Modes and Genres  credit: 4 hours.
May be repeated if topics vary. Prerequisite: One year of graduate study of literature or consent of instructor.

ENGL 578  Seminar Lit & Other Disciplines  credit: 4 hours.
May be repeated if topics vary. Prerequisite: One year of graduate study of literature or consent of instructor.

ENGL 581  Seminar Literary Theory  credit: 4 hours.
May be repeated if topics vary. Prerequisite: A college course devoted entirely to criticism or consent of instructor.

ENGL 582  Topics Research and Writing  credit: 4 hours.
Focuses on the diverse research paradigms that are often employed in the study of writing processes. Topics will vary each term. Examines past and current writing research in the topic area with an emphasis on the critical examination of research designs and the influence of epistemologies on the interpretation of data. Same as CI 565. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in writing studies or consent of instructor.

ENGL 583  Topics Writ Pedagogy & Design  credit: 4 hours.
Examines the relationships among writing studies, theories of pedagogy, and the practice of the writing teacher and administrator. Also focuses on particular problems or particular schools of thought. Typical topics include Writing Program Design and Administration; Writing, Thinking, and Problem Solving; The Classroom as a Research Site; Collaborative Learning; and Writing Across the Curriculum and Discourse Communities. Requirements will vary with instructors and topics. Same as CI 566. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in writing studies or consent of instructor.

ENGL 584  Topics Discourse and Writing  credit: 4 hours.
Focuses on the modes of inquiry central to writing research. The course topic will vary each term and may address such issues as cognitive research and writing, ethnographic research and writing, and discourse analysis and writing. Same as CI 569. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in writing studies or consent of instructor.

ENGL 591  Research in Special Topics  credit: 4 hours.
Independent study under the guidance of a member of the graduate faculty. May be repeated to a maximum of 8 hours.

ENGL 592  Masters Exam Tutorial  credit: 6 OR 12 hours.
Reading for the Master's Area Examination under the guidance of the candidate's graduate adviser. May be taken once for 12 hours or twice for 6 hours each. Credit may not be used toward a graduate degree.

ENGL 593  Prof Seminar College Tchg  credit: 0 TO 4 hours.
Approved for both letter and S/U grading. May be repeated by Ph.D. candidates as topics vary, but without credit, after 8 hours have been earned in this course. Students needing the proseminar for their programs will be given priority enrollment. Prerequisite: Graduate standing in the Department of English or consent of instructor.

ENGL 599  **Thesis Research**  credit: 0 TO 16 hours.
Guidance in writing theses for doctoral degrees. Approved for S/U grading only. Course may be repeated up to a maximum of 16 hours. Prerequisite: Doctoral candidate standing.
**Entomology**

Entomology  
Head of Department: May R. Berenbaum  
Department Office: 320 Morrill Hall, 505 South Goodwin, Urbana  
Phone: 333-2910  
www.life.uiuc.edu/Entomology/home.html

**ENT 599  Thesis Research  credit: 0 TO 16 hours.**

Work may be taken in the following subjects: insect genetics; insect behavior; applied entomology; systematic entomology; biology and ecology of insects; and insect physiology. Approved for S/U grading only. May be repeated.
Environmental Studies

Environmental Council
Director: William C. Sullivan
Council Office: 350 National Soybean Research Center, 1101 West Peabody Drive, Urbana
Phone: 333-4178
www.environ.uiuc.edu

ENVS 101  Introduction to Energy Sources  credit: 3 hours.
Same as NPRE 101. See NPRE 101.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

ENVS 161  Global Environmental Change  credit: 3 hours.
Same as HIST 101 and NRES 161. See HIST 101.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences
UIUC: Western Compartv Cult

ENVS 180  Natural Disasters  credit: 3 hours.
Same as GEOL 118 and GLBL 118. See GEOL 118.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ENVS 201  Environmental History  credit: 3 hours.
Same as HIST 201. See HIST 201.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

ENVS 210  Environmental Economics  credit: 3 hours.
Same as ACE 210, ECON 210, NRES 210, and UP 210. See ACE 210.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ENVS 220  Presenting Information  credit: 3 hours.
Same as AGCM 220 and NRES 220. See AGCM 220.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ENVS 241  Intro to Radiation Protection  credit: 2 hours.
Same as NPRE 241. See NPRE 241.

ENVS 299  Ind Studies of Env. Topics  credit: 0 TO 4 hours.
Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

ENVS 301  Environmental Issues Today  credit: 3 hours.
Seminar exposing students in the Environmental Fellows Program to different disciplinary perspectives on specific environmental issues, as revealed in the scholarly literature. Specific problems will vary from term to term. This seminar helps students make the transition from disciplinary to interdisciplinary thinking. Team-taught. Prerequisite: Admission to Environmental Fellows Program or consent of EFP Director.

ENVS 310  Natural Resource Economics  credit: 3 hours.
Same as ACE 310, and NRES 310. See ACE 310.

ENVS 330  Environmental Communications  credit: 3 hours.
ENVS 336  **Tomorrow's Environment**  credit: 3 hours.
Same as CHLH 336 and CPSC 336. See CPSC 336.

ENVS 350  **Environmental Studies Workshop**  credit: 4 hours.
Team-taught workshop in which students and faculty work together in teams to analyze a particular environmental problem and develop potential solutions. The course will focus on a selected environmental problem and seek solutions through integration of the humanities and the social, physical and biological sciences. The integrated approach will be compared to the process of framing the problem from the perspective of the individual disciplines, evaluating the assumptions inherent in each approach. This workshop is part of the capstone experience for students in the Environmental Fellows Program. Prerequisite: Admission to Environmental Fellows Program or consent of the EFP Director.

ENVS 380  **Environmental Geology**  credit: 4 hours.
Same as GEOL 380. See GEOL 380.

ENVS 398  **Special Topics in Env Studies**  credit: 1 TO 4 hours.
Lectures in topics of current interest. See Class Schedule for current topics. May be repeated. Prerequisite: Varied, depending on topic, and/or consent of instructor.

ENVS 406  **Urban Ecology**  credit: 4 hours.
Same as UP 406. See UP 406.

ENVS 420  **Conservation Biology**  credit: 4 hours.
Same as CPSC 436 and IB 451. See IB 451.

ENVS 430  **Comm in Env Social Movements**  credit: 3 hours.
Same as AGCM 430, NRES 430, and SOC 464. See AGCM 430.

ENVS 431  **Environmental Toxicology**  credit: 3 hours.
Same as CHLH 461, CPSC 435, and IB 485. See IB 485.

ENVS 432  **Genetic Toxicology**  credit: 3 hours.
Same as CPSC 432. See CPSC 432.

ENVS 433  **Pesticide Toxicology**  credit: 3 OR 4 hours.
Same as IB 486 and VB 534. See IB 486.

ENVS 444  **Social Impact Assessment**  credit: 3 OR 4 hours.
Same as LA 444, RST 444, NRES 444, RSOC 444, and UP 444. See RST 444.

ENVS 447  **Environmental Sociology**  credit: 3 OR 4 hours.
Same as RSOC 347 and SOC 447. See SOC 447.

ENVS 450  **Atmospheric Chemistry**  credit: 3 hours.
Same as ATMS 420 and CEE 447. See CEE 447.

ENVS 469  **Environmental Health**  credit: 3 OR 4 hours.
Same as CHLH 469. See CHLH 469.

ENVS 474  **Principles of Epidemiology**  credit: 4 hours.
Same as CHLH 474 and PATH 474. See CHLH 474.

ENVS 480  **Basic Toxicology**  credit: 3 hours.
Same as CPSC 433, FSHN 480, and VB 449. See FSHN 480.

ENVS 482  **Current Problems in Env Geol**  credit: 4 hours.
Same as GEOL 482. See GEOL 482.

ENVS 510  **Adv Natural Resource Economics**  credit: 4 hours.
Same as ACE 510, ECON 515, and NRES 510. See ACE 510.

ENVS 511  **Environmental Economics**  credit: 4 hours.
ENVS 514  Neurotoxicology  credit: 3 hours.
Same as PSYC 515 and VB 514. See VB 514.

ENVS 516  Reprod & Dev Toxicology  credit: 3 hours.
Same as VB 516. See VB 516.

ENVS 527  Statistics in Epidemiology  credit: 4 hours.
Same as CHLH 527 and PATH 525. See CHLH 527.

ENVS 540  Public Involvement in Res Mgmt  credit: 3 TO 4 hours.
Same as LA 540, RST 540, NRES 540, RSOC 540, and UP 540. See NRES 540.

ENVS 545  Aerosol Sampling and Analysis  credit: 4 hours.
Same as ATMS 353, CEE 545, and ME 516. See CEE 545.

ENVS 595  Res Sem Human Enviro  credit: 2 hours.
Trains students to propose, conduct, communicate, and evaluate research in the human dimensions of environmental systems. Participants present and receive feedback on work in progress in formal seminars and in small multidisciplinary groups. May be repeated to a maximum of 20 hours. Prerequisite: HDES Scholar status or consent of instructor.

ENVS 596  Interdisciplinary Tox Sem  credit: 1 hours.
Same as PATH 596 and VB 596. See VB 596.
EOL 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated in the same or separate terms as topics vary.

EOL 367  **The American College**  credit: 3 hours.
Survey of the American college and university; its history, structures, problems, trends, and governance. Provides an opportunity to explore the nature and scope of higher education in the United States.

EOL 440  **Prof Issues for Teachers**  credit: 1 hours.
Provides the basic common understanding of schools as social organizations and the professional role of teachers in public schools; analyzes selected legal issues relating to student rights, employment and teacher rights, and collective bargaining in schools; and serves as an introduction to instructional supervision, teacher evaluation, and continuing professional development of teachers. Concurrent enrollment in EDPR 432 or EDPR 442. Prerequisite: Admission into a teacher preparation program.

EOL 518  **Econ of Ed, Hlth & Hum Capital**  credit: 4 hours.
Basic economic analysis of human capital and the value of human time, with applications to the economics of education and health; theory and analysis of consumer investment in human and physical capital over the life cycle; the returns to education and health, and their effects on growth; the theory of nonmarket time; public finance of education and health; and implications for the analysis of the distribution of income. Same as ECON 545. Prerequisite: A course in microeconomic theory and a course in statistics, or consent of instructor.

EOL 540  **Intro to Edu Admin.**  credit: 4 hours.
Provides the basic common understanding of theory and practice in operation and control of schools useful to teachers and other citizens; analyzes both formal and informal influences on governance; and serves as an introductory course for prospective administrative officers and supervisors. Prerequisite: Graduate standing in the College of Education or consent of instructor.

EOL 541  **Instructional Supervision**  credit: 4 hours.
Methods, theories, and research applying to the supervision and evaluation of classroom instruction; includes analysis and application of research in effective teaching practices, formative and summative evaluation, staff development, data collection techniques, and alternative feedback methods. Prerequisite: EOL 540 or consent of instructor.

EOL 542  **The Principalship**  credit: 4 hours.
Provides an overview and analysis of the administrative, supervisory, and leadership functions of building-level administrators; emphasizes the design and implementation of effective educational programs on a school-wide basis; analyzes administrative tasks and processes through case studies, interviews with practitioners, simulations, and readings. Prerequisite: EOL 540 or consent of instructor.

EOL 543  **School Improvement**  credit: 4 hours.
Study of major ideas on school improvement, past and present, and of emerging research on the condition of public education in the United States. In-depth examination of reform proposals for changing the organization of schools, the instructional program, and the roles of students, teachers, and school administrators. Prerequisite: Graduate standing in the College of Education or consent of instructor.

EOL 544  **School Dist Improvement**  credit: 4 hours.
Course will provide an in-depth examination of reform proposals for changing the organization of school systems, the instructional programs, and the roles of educators to improve learning; will share insights and experiences in building-level and district-level improvement planning; and will explore the pivotal role of the superintendent in district improvement and building a community of learners. Prerequisite: Students must be admitted to the EOL Superintendent Endorsement program or consent of instructor.

EOL 546  **Educational Finance**  credit: 4 hours.
Advanced graduate study of financing public education systems in the United States; focuses on the social, economic, political, legal, and technical dimensions of developing school finance policy for federal, state, and local governments; relates theory and research in
public school finance to administrative practice in budgeting and financial administration. Prerequisite: Graduate standing in the College of Education or consent of instructor.

EOL 547  Educational Law  credit: 4 hours.
Examines the range of federal and state constitutional and statutory sources that apply to the constituents (pupils, parents, teachers, administrators, and board members) engaged in public schools. Emphasizes development of legal analytical skills. Prerequisite: Graduate standing in the College of Education or consent of instructor.

EOL 548  Poli & Cultural Context of Ed  credit: 4 hours.
The political and social environment of public education in the United States; analysis of the power structure and its influence on educational policy making at the district level; examination of the evolving roles of state and federal agencies, the courts, private organizations, and interest groups in school governance. Studies the tension between the ideal of a democratically controlled public school system and the growing power of educational experts. Prerequisite: Graduate standing in the College of Education or consent of instructor.

EOL 549  Administration Theory  credit: 4 hours.
Study of theoretical perspectives and empirical research drawn from the social sciences relating to educational organizations and administrative leadership with an emphasis on application of theory to practice. Prerequisite: Student must be admitted to the EOL Superintendent Endorsement program or consent of instructor.

EOL 560  Clinical Experience Admin  credit: 1 TO 12 hours.
Direct experience in the study of educational problems of concern to administrators; features an action component whereby the student is provided with opportunities for assuming responsibility for decision making in a live or simulated setting; each student works under the supervision of a professor, and where possible and appropriate, a practicing administrator. Approved for S/U grading only. May be repeated to a maximum of 12 hours. No more than 4 hours earned at the master’s level. Prerequisite: Students must be admitted to the EOL General Administrative or Superintendent Endorsement program and must have completed at least four EOL required courses, or consent of instructor.

EOL 561  Ed Politics and Policies  credit: 4 hours.
Examines the legislative and political processes in the formulation of current federal and state educational policies, together with the evaluation of policy and the formulation of policy alternatives. Prerequisite: EOL 548 or consent of instructor.

EOL 562  School District Management  credit: 4 hours.
Course will introduce students to the literature on school district management from the perspectives of theory, research, and practice. Effective strategies for managing school districts will be presented, including in-depth study of educational facilities management, planning, and decision making. Prerequisite: Students must be admitted to the EOL Superintendent Endorsement program or consent of instructor.

EOL 563  The School Superintendency  credit: 4 hours.
Course examines the legal and fiscal responsibilities of school superintendents, the relationship of superintendents with school boards and employee groups, the importance of public relations and partnerships with community stakeholders, the process for selecting superintendents, and the effect of the position on individuals. Prerequisite: Students must be admitted to the EOL Superintendent Endorsement program or consent of instructor.

EOL 564  Democracy/Politics  credit: 4 hours.
Course examines the foundations and basic concepts of democratic theory and governance and their relationship to administrative practice; considers various approaches in political theory to administration; addresses moral and ethical issues in administration; and develops principles of governance and ethics for educational leadership. Prerequisite: EOL 548 or consent of instructor.

EOL 565  Human Resource Management  credit: 4 hours.
Principles, problems, and trends in the administration of professional public school personnel; organization of personnel; the legal framework of the personnel function; selection, evaluation and development of staff; collective bargaining, contract administration and personnel policy; and the personnel administrator's role as a catalyst for school improvement. Prerequisite: EOL 547 or consent of instructor.

EOL 566  Financial Administration  credit: 4 hours.
Role of financial administration in public schools; analysis of the budgetary and accounting systems used in American public education agencies; examination of the principles of school fiscal administration, including organizing the fiscal function and intergovernmental fiscal relations; emphasizes the role of financial decision making in public school administration. Prerequisite: EOL 546 or consent of instructor.

EOL 567  Program Planning & Evaluation  credit: 4 hours.
Open only to persons who have been admitted to doctoral study in the Department of Educational Organization and Leadership. Prerequisite: EOL 540 or equivalent or consent of instructor.

**EOL 570  Organization of Higher Ed**  credit: 4 hours.
Organizational patterns whereby colleges and universities seek to accomplish their purposes; agencies involved in the governance of higher education. Prerequisite: EOL 571 or equivalent.

**EOL 571  Foundation of Higher Edu**  credit: 4 hours.
Introduction to higher education as a subject. Its history, purposes, leaders, and literature; attention to conceptual framework in which further development of this subject can progress.

**EOL 572  The College Student**  credit: 4 hours.
Study of the characteristics and development of college students, the institutional contexts in which they operate, and the interaction of students with the college environment.

**EOL 573  The Community College**  credit: 4 hours.
Community and technical colleges; their purposes, function, and objectives; social forces related to their development and evaluation; characteristics and needs of students; educational programs and teaching strategies; and organization, control, and financing. Same as HRE 501.

**EOL 574  Diversity in Higher Education**  credit: 4 hours.
Explores critical topics and issues related to diversity in higher education, including race/ethnicity, class, and gender. Covers current research that explores diversity in higher education, institutional diversity policies and organizational behaviors, campus constituents, and the role of external groups. The course consists of reading, in-class discussion, group exercise, and completing a research project that is of interest to the student.

**EOL 575  Higher Education Finance**  credit: 4 hours.
Explores the foundations of higher education finance by analyzing key theories, structures, and challenges of college and university financing. Students will examine readings, present papers and actively participate in class discussions, so as to better comprehend the financial complexities dictating current institutional policies and practices. Prerequisite: EOL 571.

**EOL 577  Public Policy in Higher Ed**  credit: 4 hours.
Intended primarily for doctoral students in higher education, this course will enable students to analyze contemporary public policy issues confronting American higher education. Selected policy issues will be probed in depth, drawing upon scholarly sources and public reports. Students will comprehend the interaction and tension among higher education leaders, and local, state, and federal policymakers. Prerequisite: EOL 571 or consent of instructor.

**EOL 578  Higher Education Law**  credit: 4 hours.
Provides graduate students with core knowledge of the law affecting the administration of colleges and universities. Students become versed in legal issues to enhance administrative effectiveness and to address legal issues that confront the administrator in the operation of an institution of higher education. Importantly, the course does not aspire to invest the student with legal knowledge sufficient to operate without advice of professional legal counsel. Prerequisite: EOL 571.

**EOL 580  Critical Issues in Higher Ed**  credit: 4 hours.
The examination of critical trends that impact higher education from various perspectives, including legal, organizational, and political. May be repeated to a maximum of 8 hours.

**EOL 582  College Student Development**  credit: 4 hours.
Provides students with an understanding of theories and research involving the cognitive, intrapersonal and interpersonal development of college students. Special attention is paid to the application of student development research in educational settings and the intentional creation of educational environments along developmental principles. Prerequisite: EOL 572 or consent of instructor.

**EOL 583  Student Affairs Admin**  credit: 4 hours.
Theory, research, and practice of student affairs administration, including philosophical foundations, management, professional development and organizational issues.

**EOL 585  College Teaching**  credit: 4 hours.
Scholarly approach to curriculum and pedagogy at the college level: models of student development, instructional methods, active and cooperative learning, advising, evaluation and assessment, classroom research. Faculty roles and responsibilities. This course is intended for students who plan to pursue academic careers. Prerequisite: Completion of a campus or departmental orientation for teaching assistants.

**EOL 586  Changing College Curriculum**  credit: 4 hours.
Examines the historical roots, contemporary controversies, current trends, and possible futures of the curriculum in American postsecondary education. It is a graduate seminar built on small group discussions and conversations about important literature on the changing college curriculum. Increases student understanding of historical and contemporary curricular issues in higher education with the additional goal of fostering the consideration of the possibilities of challenges to enacting curricular change. Prerequisite: EOL 571 or consent of instructor.

EOL 587  Quality Process Improvement  credit: 4 hours.
Same as HRE 531. See HRE 531.

EOL 589  Internship in Higher Ed  credit: 4 hours.
Supervised direct experience in the administration of higher education. With the aid of the faculty, students select the internship relevant to their career goals. Approved for S/U grading only. May be repeated to a maximum of 8 hours. No more than 8 hours may be earned toward an advanced degree. Prerequisite: Consent of instructor.

EOL 590  Advanced Seminar  credit: 0 TO 8 hours.
Open only to persons who have been admitted for doctoral study in the Department of Educational Organization and Leadership. Prerequisite: Consent of instructor.

EOL 595  Independent Study  credit: 2 TO 4 hours.
Offers opportunity and challenge of self-directive, independent study, that is, develops the individual's ability as an independent student, and enables the student to pursue needed study in a field in which appropriate courses are not being offered during a given term. May be repeated for credit with consent of advisor and department head. Prerequisite: Approval of study outline by adviser and the department head prior to enrollment.

EOL 598  Thesis Seminar  credit: 4 TO 8 hours.
Assists doctoral candidates in planning field studies and thesis problems; students are expected to present their studies at each of four stages: (1) the inception, delimitation, tentative design stage; (2) the proposed design stage; (3) the revised design stage; and (4) the final design stage. Students are expected to analyze all presentations critically. Approved for S/U grading only. Prerequisite: Consent of instructor.

EOL 599  Thesis Research  credit: 0 TO 16 hours.
Individual direction of research and thesis writing. Approved for S/U grading only. May be repeated.
Educational Policy Studies

Educational Policy Studies
Head of Department: James D. Anderson
Department Office: 360 Education Building, 1310 South Sixth, Champaign
Phone: 333-2446
www.ed.uiuc.edu/EPS

EPS 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
Specific sections approved for S/U grading. May be repeated.

EPS 201 Foundations of Education credit: 3 hours.
Studies some of the problems of formulating and justifying aims and policies in American education, of designing and systematizing the curriculum, of organization and social context of the public school system, and of the teaching-learning process; examined in terms of perspectives provided by social philosophy, history, sociology, and philosophy of education.

EPS 202 Foundations of Education-ACP credit: 4 hours.
Course is identical to EPS 201 except for the additional writing component. Students may not receive credit for both EPS 202 and EPS 201. Prerequisite: Completion of campus Composition I general education requirement.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

EPS 310 Race and Cultural Diversity credit: 4 hours.
Study of race and cultural diversity from Colonial era to present; the evolution of racial ideology in an ethnically heterogeneous society; the impact of race on the structures and operations of fundamental social institutions; the role of race in contemporary politics and popular culture. Same as AAS 310, AFRO 310, and LLS 310. Prerequisite: Completion of campus Composition I general education requirement.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)
UIUC: Advanced Composition

EPS 390 Undergraduate Advanced Seminar credit: 0 TO 9 hours.
Advanced undergraduate seminar that builds upon introductory work in EPS 410 and includes historical, philosophical, legal, and social science perspectives on education. Requests for activation of this course may come from students or faculty. Approved for both letter and S/U grading. May be repeated. Prerequisite: EPS 301 or equivalent, and consent of instructor.

EPS 391 Thesis credit: 2 hours.
Prerequisite: Senior standing.

EPS 395 Independent Study credit: 2 hours.
Designed for students who wish to do advanced readings and research in greater depth and to investigate further ideas and themes that have been explored in EPS 199 and EPS 201. Prerequisite: EPS 201; and consent of adviser and staff member who supervises the work.

EPS 400 History of American Education credit: 2 hours.
Development of American education in relation to political, social, and cultural developments; attention to the influence of movements in the cultural environment upon evolving conceptions of educational theory and practice.

EPS 401 History of Educational Ideas credit: 2 hours.
Studies selected educational theorists and intellectual movements; provides familiarity with the major educational ideas of the past and historical perspectives on current issues and problems in education; and critical readings of such authors as Aristotle, Plato, Quintilian, St. Augustine, Loyola, Comenius, Rousseau, Pestalozzi, Froebel, Herbart, and Dewey.

EPS 402 Asian American Education credit: 4 hours.
Examination and analysis of Asian American education from the late 1800's to the present. Same as AAS 402.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)
UIUC: Advanced Composition
**EPS 403  European Education to 1600  credit: 2 OR 3 hours.**
Cultural history of western European educational practice with special focus on Classical Greece, the Hellenistic world, Rome, early Christianity, the middle ages, the twelfth century renaissance, scholasticism and the fourteenth century renaissance. Same as HIST 444 and MDVL 403. 3 undergraduate hours. 2 graduate hours. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
UIUC: Advanced Composition

**EPS 404  European Education since 1600  credit: 2 OR 3 hours.**
Cultural history of western European educational practice with special focus on the fifteenth century renaissance, the Reformation and Counter-reformation, Enlightenment, and 19th century national schooling systems in Germany, France, and England. Same as HIST 457. 3 undergraduate hours. 2 graduate hours. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
UIUC: Advanced Composition

**EPS 405  Historical & Social Barriers  credit: 2 OR 4 hours.**
Examines the relationship between ability, race, class, and gender to citizenship and schooling. Particular emphasis is placed on how the construction of "citizenship" has been used as a tool to further deny equal participation in the public sphere such as schools. To that end, an application of historical understanding of social barriers to educational access is analyzed from the Colonial period to the present. Not offered for undergraduate credit. May be repeated to a maximum of 4 hours.

**EPS 410  Philosophy of Education  credit: 2 hours.**
Philosophical examination of selected educational issues; conveys a grasp of the complexities of the issues and some philosophical methods for dealing with them.

**EPS 411  School and Society  credit: 2 hours.**
Analyzes normative and conceptual aspects of the interrelationship of school and society, and of reciprocal influences between schools and major social trends and forces.

**EPS 412  Critical Thinking for Teachers  credit: 2 hours.**
Examination of critical thinking dispositions and abilities as an approach to the foundations of knowledge and structure of thinking in subject-matter areas.

**EPS 413  Aesthetic Education  credit: 2 hours.**
Theoretical introduction to the problems involved in teaching critical appreciation of the arts; examines materials from aesthetics, art history, and criticism for their relevance to the problems of aims, curriculum, organization, and teaching-learning.

**EPS 414  Aesthetics and Communications  credit: 2 hours.**
Theoretical introduction to the problems involved in teaching a critical understanding of mass communications; examines materials from aesthetics, communication theory, and the social sciences for their relevance to the problems of aims, curriculum, organization, and teaching-learning.

**EPS 415  Information Technology Ethics  credit: 4 hours.**
Course examines the ethical and policy issues raised by the use of new information and communication technologies in education. The course is interdisciplinary, drawing from social and historical as well as philosophical perspectives on these issues.

**EPS 420  Sociology of Education  credit: 2 hours.**
Education as a social process in various cultures and historical periods, emphasizing current systems in Westernized countries. Same as SOC 420. Prerequisite: SOC 100; or six hours of anthropology, social geography, political science, or sociology

**EPS 421  Racial and Ethnic Families  credit: 2 hours.**
Graduate-level sociological examination of how gender, race, ethnicity, cultural diversity and class function in the development of diverse American families, which are important foundations of education. Primary attention will be given to African American and Hispanic families. Secondary attention will be given to Asian American, Native American and other racial and ethnic family groups. Same as AFRO 421, HDF 542, and SOC 421. Prerequisite: SOC 100, a 200-level SOC course, or consent of instructor.

**EPS 422  Race, Ed Pol, and Soc Science  credit: 3 OR 4 hours.**
Same as SOC 426. See SOC 426.

**EPS 423  Politics of Education**  credit: 2 hours.
Overview of the political structure and processes through which many of the major issues in education are treated; analyzes nature of the policymaking process in education and discusses the roles of principal participants in the process of educational decision making, but focuses on fundamental recurring issues in education and the ways these issues have been resolved or not resolved by the overall system. Particular attention to the role that both the federal and state judiciary as well as legislative authority have had in shaping educational policy.

**EPS 424  Economics of Education**  credit: 2 hours.
Introduction to economic concepts and their application to education, including investment and consumption theories of education and the role of human capital in economic growth and development; cost-benefit analyses in education, education and the distribution of income, and manpower and educational planning. Prerequisite: Consent of instructor.

**EPS 425  Anthropology of Education**  credit: 2 OR 4 hours.
Introduction to the contribution of anthropology to the cross-cultural study of education, including discussion of material from representative cultures ranging from primitive social groups to present-day national states; special attention to education of minority ethnic and subordinate cultures; and emphasis on both informal and formal education as cultural process in relation to culture transmission, evolution, change, and development. Same as ANTH 425 and EPSY 466. Prerequisite: A course in anthropology or sociology, or consent of instructor.

**EPS 426  Comparative Education**  credit: 2 hours.
Introduction to the cross-cultural, cross-national study of educational institutions and their relationship to society. Topics may vary.

**EPS 427  Philosophy of Middle School**  credit: 2 hours.
This course is intended as an introduction to the philosophical, social, and cultural foundations of middle level education.

**EPS 431  New Learning**  credit: 4 hours.
An introduction to the changing social and cultural contexts of education. What changes are afoot today in workplaces, civic life and everyday community life? What are their implications for education? Examines the possible impacts of contemporary social transformations on teaching and learning - including in the areas of technology, media, globalization, diversity, changing forms of work in the ‘knowledge society’, and, in these contexts, changing learner needs and sensibilities. Contrasts canonical and classical theories and practices of education with new and emerging educational institutions and pedagogies. 4 graduate hours only. Prerequisite: Acceptance into the Master of Education with an emphasis on New Learning and New Literacies program.

**EPS 481  History of Amer Indian Educ**  credit: 3 OR 4 hours.
Same as AIS 481. See AIS 481.

**EPS 500  Topics in Educational Policy**  credit: 2 TO 4 hours.
Seminar on topics not treated by regularly scheduled courses; requests for initiation may be made by students or faculty members. May be repeated to a maximum of 8 hours.

**EPS 501  History of U.S. Ed Thought**  credit: 4 hours.
Studies the evolution of educational theories and philosophies since the eighteenth century; particular reference to their impact upon educational developments in the United States; a broad view of the general growth of American educational thought; and attention to selected major educational theorists, or schools of thought, exploration of their fundamental ideas, and the relation of these ideas to significant intellectual currents in American culture. Prerequisite: Consent of instructor.

**EPS 502  Education in the 20th Century**  credit: 4 hours.
Historical study of significant educational trends during the past sixty years, with special reference to their influence on American education; an analytical examination of the principal transition movements in the last decade of the nineteenth century and of efforts to solve the problems since 1900.

**EPS 503  Seminar in the History of Ed**  credit: 4 hours.
Intensive group study of a small number of selected problems to assist individual students to develop an understanding of and the ability to use the techniques of historical research in furthering such study; problems studied are selected in the light of the interests and previous training of the group of students enrolled. Prerequisite: Two courses in the history of education or consent of instructor.

**EPS 510  Traditions in Philosophy of Ed**  credit: 4 hours.
Analyzes major trends and primary sources in philosophy of education, drawing mainly from the 20th century. Movements covered will include pragmatism, concept analysis, phenomenology, feminism, and Marxism/Critical theory. This course is required of all Philosophy of Education graduate students. Prerequisite: An appropriate 300- and 400-level coursework in philosophy, philosophy of education, or consent of the instructor.
EPS 511  **Contemporary Philosophy of Ed**  credit: 4 hours.
Analyzes exemplary current work in the field, covering a range of contrasting philosophical issues and approaches. The course goal is to provide familiarity with notable contemporary authors from a variety of perspectives. Prerequisite: Coursework in philosophy or philosophy of education, or consent of instructor.

EPS 512  **Western Educational Classics**  credit: 4 hours.
Reading and group discussion of a limited number of the most important writings in educational philosophy which have had a profound influence on the progress of educational thought and practice. Prerequisite: EPS 401 or equivalent; consent of instructor.

EPS 513  **Modern Theories of Education**  credit: 4 hours.
Analyzes the assumptions about knowledge and values that provide a basis for different conceptions of educational theory, research and practice. Prerequisite: Coursework in philosophy, philosophy of education, or consent of instructor.

EPS 514  **John Dewey's Philosophy**  credit: 4 hours.
Focuses on Dewey's Philosophy of Education emphasizing the intensive study of original works. Prerequisite: Coursework in philosophy or philosophy of education, or consent of instructor.

EPS 515  **Philosophy and Ed Research**  credit: 4 hours.
Examines some crucial assumptions and concepts of contemporary research in education from the point of view both of the consumer and the practitioner of educational research. Topics include paradigm conflicts, causal attributions in social science, assessment, ethical problems in the conduct of research, and the assumptions of quantitative research. Prerequisite: Coursework in philosophy or philosophy of education, or consent of instructor.

EPS 516  **Social Theories and Education**  credit: 4 hours.
Examines philosophical issues in social and political theory as they pertain to educational problems. The course includes topics such as autonomy, democratic education, educational reform, and social change. Prerequisite: Coursework in philosophy or philosophy of education, or consent of instructor.

EPS 517  **Ethics and Education**  credit: 4 hours.
Examines issues in moral philosophy as they pertain to education. Topics include current theories of moral education, ethical problems in teaching, or topics of moral dispute in educational policy. Prerequisite: Coursework in philosophy or philosophy of education, or consent of instructor.

EPS 518  **Theories of Knowledge**  credit: 4 hours.
Examines philosophical issues in the construction, justification and transmission of knowledge, as they pertain to educational processes. Prerequisite: Coursework in philosophy or philosophy of education, or consent of instructor.

EPS 519  **Philosophy of Language and Ed**  credit: 4 hours.
Examines philosophical issues in language meaning, and use, as they pertain to educational problems. Topics range from issues in logic, analysis, or critical thinking to contemporary discourse theory. Prerequisite: Coursework in philosophy, philosophy of education, or consent of instructor.

EPS 520  **Foundations of Aesthetic Ed**  credit: 4 hours.
Philosophical approach to the problems of teaching for appreciation in formal education; appraisal of the status of aesthetic education, its nature and function, and its relation to other types of education. Prerequisite: EPS 413 or equivalent.

EPS 522  **Ethics and Educational Policy**  credit: 4 hours.
Designed to prepare students to analyze ethical issues involved in educational policy making, policy administration, and policy evaluation; includes topics such as educational equity, privacy, due process, and compliance; draws upon multiple disciplines to analyze issues developed out of practice. Prerequisite: Open to students who have fulfilled their social foundations requirements and other students with consent of instructor.

EPS 523  **Religious Educational Policy**  credit: 4 hours.
Course examines the philosophical, historical and political issues that are involved in formulating religious education policy in liberal, democratic societies such as the United States. Its primary focus is on church state relations and on the arguments that are made to advance religious secular education. Prerequisite: Two EPS courses at 300-level or two religious courses at 300-level, or consent of instructor.

EPS 528  **Liberalism and Western Ed**  credit: 4 hours.
Course explores classical and contemporary liberal texts and critics as they relate to public schooling and other forms of education. Course will deal with issues such as church and state, equality of educational opportunity, multiculturalism, educational authority,
educational autonomy, progress, nationalism, and freedom. Prerequisite: A 300-level course in philosophy or philosophy of education, or consent of instructor.

**EPS 530  Education and Globalization**  credit: 4 hours.
Analysis of the role and functions of education in social, political, and economic development, with particular reference to the new and developing countries. Prerequisite: Consent of instructor.

**EPS 531  Critical Race Theory & Educ**  credit: 4 hours.
Focuses on critical race theory as a critique of racism and the law in U.S. society and discusses its current applications to education policy and research in K-12 schooling and higher education. Also looks at how critical race theory can be used as a methodological lens for policy analysis and educational research.

**EPS 532  Knowledge, Learning & Pedagogy**  credit: 4 hours.
Investigates a variety of pedagogical paradigms, including didactic, authentic and transformative pedagogies. Develops the concept of a pedagogical repertoire, as a way of interpreting the ways in which learners engage in a variety of "knowledge processes" or task types. The course introduces major philosophies or theories of knowledge. As a counterpoint, it also reflects on the practicalities of learning knowledge-making in informal as well as consciously designed learning environments. Prerequisite: Acceptance into the Master of Education with an emphasis on New Learning and New Literacies program.

**EPS 536  Race, Gender & Sexuality Issu**  credit: 4 hours.
Examines contemporary theories of race, gender, class, and sexuality, as well as analyzing how their dynamics play out in U.S. public schooling and history. In an attempt to discuss a range of disciplinary and theoretical approaches to diversity, we will shift among historical, sociological, political, theoretical and pedagogical issues. Traces the place of diversity in forming notions of citizenship, community, identity, and political affiliation/alliance. While two extended examples will focus on the interplay of race, class, and gender in the school-based issues of drop out rates and gendered interactions in the classroom and playground, we will also consider contemporary theories of diversity in local and global contexts. Prerequisite: Acceptance into the Master of Education with an emphasis on Diversity and Equity in Education Program or instructor approval.

**EPS 539  Youth, Culture and Society**  credit: 4 hours.
Same as AAS 539 and HCD 539. See HCD 539.

**EPS 540  Intersectional Pedagogies**  credit: 4 hours.
Same as GWS 540. See GWS 540.

**EPS 575  Cult Studies and Crit Interp**  credit: 4 hours.
Same as MDIA 575. See MDIA 575.

**EPS 576  Intro to Diversity & Equity**  credit: 4 hours.
Same as SPED 513. See SPED 513.

**EPS 590  Advanced Graduate Seminar**  credit: 4 hours.
Seminar in educational policy studies; sections offered in the following fields: (a) history of education; (b) philosophy of education; (c) comparative education; (d) social foundations of education; (e) philosophy of educational research; and (f) historical methods in education. May be repeated. Prerequisite: Consent of instructor.

**EPS 591  Field Study and Thesis Seminar**  credit: 4 TO 8 hours.
Assists doctoral candidates in planning field studies and thesis problems; students are expected to present their studies at each of four stages: (1) the inception, delimitation, tentative design stage; (2) the proposed design stage; (3) the revised design stage; and (4) the final design stage. Students are expected to analyze all presentations critically. Prerequisite: Open only to students who have been admitted for doctoral study.

**EPS 595  Independent Study**  credit: 2 OR 4 hours.
Offers opportunity and challenge of self-directive, independent study; develops the individual's ability as an independent student and enables the student to pursue needed study in a field in which appropriate courses are not being offered during a given term. May be repeated with approval. Prerequisite: Approval of study outline by adviser and the department chairman prior to enrollment.

**EPS 599  Thesis Research**  credit: 0 TO 16 hours.
Individual direction of research and thesis writing. Approved for S/U grading only. May be repeated.
EPSY 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

EPSY 200  Honors Symposium in Education  credit: 1 hours.
Course affords students an opportunity to consider important topics impacting current educational practices. Students select six scholarly presentations from an approved list. The presentations are delivered by outstanding visiting and resident scholars in education and related disciplines. Three times during the term, students gather to consider the issues raised by the presentations. Course expectations include: attending six presentations, attending the three course discussion meetings, reading the course text and selected publications, and developing written reflections based on presentations attended. May be repeated to a maximum of 8 hours.

EPSY 201  Educational Psychology  credit: 3 hours.
Basic undergraduate course in psychology of education for prospective teachers; materials and principles from the various areas of psychology (mental hygiene, psychology of learning, etc.) applied to the practical problems of teaching. Includes limited voluntary participation as a subject in experiments. Prerequisite: PSYC 100.

EPSY 202  Exploring Cultural Diversity  credit: 3 hours.
Introduction to cultural diversity and social justice issues through interdisciplinary readings, discussion, and experiential activities. The course involves a 1-hour lecture and 2-hour lab/discussion section each week. The lecture focus is on raising awareness of key issues, concerns and concepts, providing accurate information on diverse groups, and relating theories and models to critical incidents of social oppression in everyday life. The lab/discussion sections follow a group dialogue and experiential activity format, and focus on relating the readings and lecture material to personal experiences and active learning activities.

This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

EPSY 203  Social Issues Group Dialogues  credit: 1 hours.
Provides students with opportunities to converse on specific diversity and social justice topic areas offered as separate sections under the course heading. Each section uses a structured dialogue format to explore intergroup and intragroup differences and similarities within historical and contemporary contexts. Specific focus will be on participants sharing their experiences and perspectives related to the specific dialogue topic. The dialogue format uses active learning exercises in addition to weekly readings, journal assignments, and topic based dialogues. May be repeated in the same term to a maximum of 2 hours. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: Consent of the instructor.

EPSY 220  Career Theory and Practice  credit: 3 hours.
Design and implementation of an innovative life planning process; a participatory experience that includes a survey of theories, models, and research on life and career planning and that encourages systematic skill identification, values clarification, and the development of job search strategies.

EPSY 222  Lang&Culture Deaf Communities  credit: 3 hours.
Same as SHS 222. See SHS 222.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

EPSY 236  Child Dev For Elemen Teachers  credit: 3 hours.
Study of child growth and development designed particularly for those preparing to teach in the elementary school; special emphasis on the significance of the developmental process for educational programs and procedures; and systematic experience in studying and evaluating children's behavior and in supporting their learning and development. Includes limited voluntary participation as a subject in experiments. Credit is not given for both EPSY 236 and PSYC 216. Prerequisite: PSYC 100.

EPSY 252  American Deaf Culture & Educ  credit: 3 hours.
Explores the American Deaf Culture and the educational systems that have served individuals with hearing loss. Course focuses on sociocultural history of the Deaf community, language development, identity development, community building, artistic expression,
educational access, and the psychological well-being of deaf individuals. Course provides students with deepened understanding and appreciation of the American Deaf Community, a minority culture within the United States. Same as SHS 252 and SPED 252.

This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

**EPSY 280  Elements of Statistics  credit: 4 hours.**
Course content includes descriptive statistics, correlation, regression, the normal curve, statistical interference, and the presentation of statistics. The course does not require calculus, and makes use of examples drawn from education, medicine, social science, business, and the popular media. Designed for professional training of students whose major interests are not in math or science. Students may not receive credit for both this course and STAT 100; ECON 202 or ECON 203; ACE 261; PSYC 233, PSYC 234, or PSYC 235; SOC 285; CPSC 440; or EPSY 480. Prerequisite: MATH 012, MATH 016, or MATH 118.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

**EPSY 330  Development and Relationships  credit: 3 hours.**
Same as PSYC 326. See PSYC 326.

**EPSY 395  Independent Study  credit: 1 TO 4 hours.**
Study of problems not considered in other courses; designed for students who excel in self-direction and intellectual curiosity. Prerequisite: Junior or senior standing; minimum GPA of 3.5; demonstrated writing and research potential as evaluated by advisor, and consent of advisor and consent of staff member who supervises the work.

**EPSY 398  Thesis  credit: 2 hours.**
Prerequisite: Senior standing.

**EPSY 399  Thesis  credit: 2 hours.**
Prerequisite: Senior standing.

**EPSY 400  Psyc of Learning in Education  credit: 2 TO 4 hours.**
Study of the psychology of human learning as it applies to instruction, educational issues, and educational problems. 3 undergraduate hours. 2 or 4 graduate hours. Taking 4 credit hours requires consent of the instructor and the completion of a substantive scholarly project. Undergraduate and graduate work load will be commensurate with the requirements. 2 hours for Latin and Spanish Certification, Elementary Edm Music and GSLIS. Prerequisite: EPSY 201 or equivalent.

**EPSY 401  Child Language and Education  credit: 2 TO 4 hours.**
Provides an overview of current knowledge about children's acquisition of linguistic and communicative competence together with a consideration of the educational import of this developmental process. 3 undergraduate hours. 2 or 4 graduate hours. Taking 4 hours of credit requires consent of the instructor and completion of a substantive scholarly project. Undergraduate and graduate work load will be commensurate with the requirements. 3 hours of ECE Undergraduate certification and 2 hours for ECE graduate certification, Elementary Ed, Music certification and GSLIS. Prerequisite: EPSY 201 or EPSY 236; or equivalent.

**EPSY 402  Sociocultural Infu on Learning  credit: 4 hours.**
Provides a general overview of the relationship of language, culture, and society to the teaching-learning process; gives broad exposure to research and theory concerned with the effects of sociocultural factors on cognition, perception, and motivation; also considers the effects of such factors on classroom interaction. Prerequisite: EPSY 201 or EPSY 236; or equivalent.

**EPSY 404  Adjustment in School Settings  credit: 4 hours.**
Examines theories of adjustment, factors that influence adjustment, and common adjustment problems of children and adolescents in school context. Prerequisite: EPSY 201 or equivalent.

**EPSY 405  Personality and Soc Dev  credit: 3 OR 4 hours.**
Same as PSYC 465. See PSYC 465.

**EPSY 406  Psyc of Classroom Management  credit: 4 hours.**
General overview of theories related to analyzing student behaviors in the classroom; the incidence and etiology of conduct problems and behavior disorders in the classroom, with emphasis upon preventive strategies and guiding principles for maintaining classroom discipline. Prerequisite: EPSY 201 or EPSY 236, or equivalent.

**EPSY 407  Adult Learning and Development  credit: 4 hours.**
Theory of and research on adult learning and development; includes societal context, performance, physiology and health, personality, and learning; and considers stability and change during young adulthood, middle age, and old age. Meets both foundational requirements for EPSY. Prerequisite: EPSY 201, or equivalent, or consent of instructor.
EPSY 408  Learn and Human Dev wi Ed Tech  credit: 4 hours.
Course will provide an understanding of theories of learning and development and how these theories relate to educational technology. Students will also participate in innovative projects that apply concepts of learning, development, and technology to practical research questions in educational settings. Prerequisite: Course fulfills one of the core requirements of the Technology Studies in Education graduate specialization and meets both foundational requirements for EPSY. It is especially appropriate for graduate students participating in the TSE graduate specialization.

EPSY 413  Intelligence Assess and Theory  credit: 3 OR 4 hours.
Study of fundamental concepts relevant to the general problem of the individual testing of learning aptitude; acquisition of psychometric competence in the use of the Binet and the Wechsler tests; acquaintance and limited practice in the administration, scoring, and interpretation of results obtained by performance scales and other devices appropriate for use with individuals having sensory, associative, and/or motor impairments. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of instructor and 6 hours of psychology courses, including one of the following: SPED 424, EPSY 486 or PSYC 490.

EPSY 419  Counseling Pre-Practicum  credit: 2 TO 4 hours.
Study of basic helping skills and professional ethics in professional psychology. The course links theory with practice, as students engage in the exploration of new helping skills and learn to analyze their developing counseling style and performance; includes an examination of relevant ethical standards and counseling theories, and their application in a multicultural context. Discussion and experiential activities are supplemented by films, videotapes, and case studies. Primarily for counseling psychology graduate students, though other students in programs with a mental health focus may be admitted with the consent of the instructor if space is available. May be repeated to a maximum of 8 hours. Prerequisite: Junior standing.

EPSY 420  Theories of Psychotherapy  credit: 4 hours.
Study of counseling and psychotherapeutic processes and theories. Coverage of major models and theories as well as current trends and a review of counseling skills will be included. Same as PSYC 420. Prerequisite: PSYC 238 or equivalent.

EPSY 421  Sex Role Theory in Counseling  credit: 4 hours.
Reviews research on sex role socialization related to career, family, and personal roles for both sexes; discusses counseling strategies aimed at freeing persons from attitudes and behaviors that limit their freedom to choose; and reviews strategies for change at policy, agency and individual levels. Same as GWS 421.

EPSY 430  Early Adolescent Development  credit: 2 OR 4 hours.
Course examines early adolescent development, covering biological, cognitive, and social transitions. Topics include identity, autonomy, peer and family relationships and the role of schooling and the media. Secondary certification students should enroll for 2 hours in spring. Elementary certification students who desire middle school certification should enroll for 2 hours in summer. Students from other majors may enroll for 4 hours in the spring. The 4 hours section includes additional assignments and discussion, and may include voluntary participation in experiments. Same as PSYC 430.

EPSY 457  Computer Use in Education  credit: 3 OR 4 hours.
Overview of the nature and development of automation in education; use of electronic data processing systems for administrative purposes, for instruction, and for research; discussion of problems of computer management, natural language analysis, and simulation CAI applications; and laboratory experience with on-line terminals, remote entry devices, and peripheral equipment. 3 undergraduate hours. 4 graduate hours. Prerequisite: EPSY 480 or equivalent, or consent of instructor.

EPSY 465  Ethnography of Local Cultures  credit: 4 hours.
Introduction to ethnographic modes of researching culture in human activities, events, organizations, and thinking through participant observation in local settings; focus on the central tasks of ethnographic research (discovery, representation, presentation, justification) through mastery of field notes and various equipment. Same as ANTH 464 and SOC 482. Prerequisite: EPSY 402, ANTH 230, or equivalent work in social sciences.

EPSY 466  Anthropology of Education  credit: 2 OR 4 hours.
Same as ANTH 425 and EPS 425. See EPS 425.

EPSY 470  Intro to Evaluation Theory  credit: 4 hours.
Introduction to the major conceptual constructs and theories of evaluation; emphasis on the critical defining components of evaluation, particularly its role in program and policy development, and on critical distinctions among evaluation theories; provides grounding for further study of both evaluation theory and methods.

EPSY 471  Intro to Evaluation Methods  credit: 4 hours.
Introduces the methodology of educational and social program evaluation, including the design of an evaluation, the data collection and analysis, and reporting; emphasis on negotiating the unique facets of evaluative practice, notably evaluator role, working with clients.
and other stakeholders, the political dynamics of evaluation contexts, and utilization of evaluative results. Students collectively conduct a field-based evaluation project. Prerequisite: EPSY 480.

**EPSY 474  Evaluating Learning Technology  credit: 4 hours.**
In this course, students will learn to conduct a variety of evaluations related to learning technologies including needs assessments, consumer-driven evaluations, outcome or impact assessments, comparative or quasi-experimental studies and case studies. As one means of measuring need, growth, or impact, students will also create assessment instruments and strategies related to particular learning technologies. These might include electronic portfolios, web-based surveys, computer adapted tests or performance rubrics. Course requirements include a final evaluation project in which students (individuals or pre-approved small groups) plan and conduct actual evaluations of learning technologies. The course includes both face-to-face and asynchronous and synchronous on-line meetings. Same as HRE 474.

**EPSY 480  Educational Statistics  credit: 4 hours.**
Designed for terminal value for professional training of students not intending to pursue advanced graduate work, and for introductory value for students continuing graduate study in education; descriptive statistics, introduction to correlation and regression, the normal curve, statistical inference, and the presentation and interpretation of statistical data in educational literature.

**EPSY 485  Assessing Student Performance  credit: 2 hours.**
Designed especially for secondary education majors, course introduces students to basic concepts in assessment including: characteristics of traditional and alternative assessment practices, purposes of assessment, aligning curricula and assessment, assessment standards, administration, scoring, and interpretation. The discussion sections are organized by content specialization, they are project-based and provide students with supervised experience in developing, administering, scoring and interpreting traditional and alternative assessments. Prerequisite: EPSY 238; undergraduates should be concurrently enrolled in CI 403.

**EPSY 487  Principles of Language Testing  credit: 3 OR 4 hours.**
Same as EIL 460, FR 460, GER 460, ITAL 460, PORT 460, SLS 460, and SPAN 460. See EIL 460.

**EPSY 490  Developments in Educ Psyc  credit: 2 OR 4 hours.**
Foundational theories and practices of educational psychology, including learning and development. Undergraduate and Graduate workload will be commensurate with the requirements. 2 hours for ECE for graduate certification. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours.

**EPSY 491  Educ Psych Field Instruction  credit: 4 TO 16 hours.**
Individual instruction designed to help the advanced student apply basic principles of education or psychology in institutional settings. Each student is assigned to a school, community agency, or other applied settings for a supervised field experience in some aspect of educational psychology. Approved for both letter and S/U grading. May be repeated to a maximum of 16 hours. Students may register in more than one section per term. No more than 8 hours may be taken in any given term. Prerequisite: Master's degree in educational psychology or equivalent, and consent of instructor.

**EPSY 510  Counseling Psychology Pro Sem  credit: 4 hours.**
Introduction to and critical examination of applied issues within the discipline of counseling psychology. A review of (a) the historical development of counseling psychology, (b) psychologists' professional code of ethics, and (c) major psychotherapy theories and interventions. Issues of race, class, gender, and diversity more broadly are integrated throughout the course.

**EPSY 511  Voc Psych Theories and Assess  credit: 2 OR 4 hours.**
Study of vocational psychology theories, assessment, decision-making, and the job search process; includes an historical overview of the development field. The course links theory with practice, as students engage in the interpretation of vocational assessments, examine relevant ethical standards, and discuss their application. 2 hours credit is for work on either the vocational theories or vocational assessment parts of the course (this must be negotiated). For 4 hours credit, a student must do both aspects. Prerequisite: Admission to the graduate program in counseling psychology or consent of instructor.

**EPSY 512  Resrch Meth in Coun Psych I  credit: 4 hours.**
This course is designed to introduce students to the foundations of research design as they apply to Counseling Psychology research. In addition, students are expected to develop a proposal for their masters thesis or early research requirement in a specific area of Counseling Psychology. This course may not be repeated for credit. Prerequisite: Enrollment in the Counseling Psychology doctoral program or permission of the instructor.

**EPSY 513  Resrch Meth in Coun Psych II  credit: 4 hours.**
This course is the second course sequence for Counseling Psychology graduate students. This course builds on the previous course (EPSY 512) in that students continue work on refining their thesis proposal in the area of Counseling Psychology. They also explore advanced research designs as applied to Counseling Psychology literature. This course may not be repeated for credit. Prerequisite: EPSY 512 or consent of instructor.
EPSY 515  **Multicultural Counseling**  credit: 4 hours.
Overview of multicultural counseling theory, empirical research, and practice; includes didactic as well as experiential learning components. The goal of the course is to enhance students' multicultural counseling competencies, with regard to developing: (a) appropriate knowledge of specific cultural groups and sociopolitical issues, (b) cultural self-awareness, and (c) multiculturally relevant intervention skills. May not be repeated for credit.

EPSY 520  **Counseling Psych Practicum**  credit: 2 TO 8 hours.
Intensive supervised experiences in applied educational psychology; use of a wide variety of diagnostic and observational techniques and treatment. Students may take more than one section. Approved for both letter and S/U grading. Prerequisite: Master's degree in educational psychology or equivalent; consent of instructor.

EPSY 521  **Group Counseling**  credit: 4 hours.
Study of the principles of group process and their application in institutional and other settings; includes a review of the historical development of group processes and study of pertinent research; discussion and experiential activities are supplemented by films, videotapes, and case studies. Prerequisite: EPSY 510 or consent of instructor.

EPSY 530  **Social Development**  credit: 4 hours.
This seminar is an advanced, doctoral-level survey of social development from infancy to adolescence. The range of topics includes attachment, temperament, genes and developmental process, social contexts of cognitive development gender development, moral reasoning and prosocial behavior, aggressive behavior, and the development of ethnic identity and discrimination. Family, peer, community, and cultural ecologies of children and adolescents receive extensive consideration. Developmental theory, methodology, and relations to social policy and intervention are continuing concerns. Same as PSYC 540.

EPSY 531  **Cognitive Dev and Socializatn**  credit: 4 hours.
Addresses basic issues in cognitive development, with special attention to how social interactions impact cognitive development. Two major foci: theories, especially in terms of the role that socialization plays in these theories; and effects of domains of socialization (e.g., peers, school) on cognitive development. Primary age span: preschool thru adolescence. Prerequisite: Consent of instructor.

EPSY 532  **Language Dev and Socialization**  credit: 4 hours.
Addresses basic processes in language development, with special attention to the impact of social and cultural contexts on that process. Includes historical and contemporary theoretical frameworks of language acquisition; crosscultural investigations of communication; acquisition under atypical circumstances. Special focus on how communicative practices generate sociocultural knowledge and competence among children and how children are socialized to use language. Prerequisite: Consent of instructor.

EPSY 550  **Seminar in Cognitive Science**  credit: 2 OR 4 hours.
Same as PSYC 514, ANTH 514, CS 549, LING 570, and PHIL 514. See PSYC 514.

EPSY 552  **Classroom Learning**  credit: 4 hours.
Provides a broad picture of the nature and conditions of classroom learning. Considers analysis of knowledge; institutional constraints on teachers; characteristics of instruction and instructional materials for reading, social studies, and science; social context of learning; motivation and interest; questioning and discussion; and learning strategies and study skills. Intended for doctoral students with a special interest in research leading to the improvement of classroom teaching and learning. Same as PSYC 554. Prerequisite: Consent of instructor required.

EPSY 556  **Analysis of Adv Instruct Tech**  credit: 4 hours.
This seminar will assist in acquiring expertise with advanced technologies for learning. This includes the design of electronic portfolios (e-portfolios) according to state and national standards, design and application of multimedia in teaching and learning, familiarization with web usability and accessibility, and reflection on the uses of technologies in education. Prerequisite: EPSY 457.

EPSY 566  **Adv Psycholinguistics**  credit: 2 OR 4 hours.
Same as PSYC 526. See PSYC 526.

EPSY 570  **Adv Theories of Ed Evaluation**  credit: 4 hours.
This topical seminar is designed for advanced graduate students with a significant interest in the evaluation of educational and social policies and programs. The seminar will engage in some depth an issue of contemporary currency and controversy in evaluation theory and practice. Readings, discussions, guest speakers, and the occasional field trip will frame the seminar. Each student in this seminar will be expected to develop a scholarly paper for conference presentation and/or publication. Prerequisite: EPSY 470, EPSY 471, and coursework in research methods.

EPSY 572  Evaluation of Edu Programs  credit: 4 hours.
Same as CI 518. See CI 518.

EPSY 573  Methods of Educational Inquiry  credit: 4 hours.
Same as CI 550 and SPED 550. See CI 550.

EPSY 574  Quasi-Experimental Design  credit: 4 hours.
Intermediate course for graduate students in education and related fields. Goal is to prepare students to design and conduct quasi-experimental studies and critique the work of others in an informed, systematic way. Students will read and discuss foundational and contemporary issues in design, validity, sampling and loss, regression artifacts, analysis and causal inferences. Prerequisite: EPSY 580 or equivalent.

EPSY 575  Mixed Method Inquiry  credit: 4 hours.
This advanced course addresses the theory and practice of mixing inquiry methodologies in program evaluation and applied research. Topics include selected roots of mixed inquiry, various stances on mixing philosophical traditions while mixing methods, conceptualizations of mixed method design and analysis, and challenges of mixed method practice. Students should have basic familiarity with experimental or survey (quantitative) with and constructivist or interpretivist (qualitative) social science. Familiarity with other social science frameworks (e.g., critical theory, feminism, action science) is also highly desirable. Approved for both Standard and S/U grading. Prerequisite: (1) Ed Psych 574 Quasi-experimental design or Ed Psych 589 Statistical inference in education, or the equivalent, and (2) Ed Psych 577 Foundations of qualitative methods or Ed Psych 578 Qualitative inquiry methods or the equivalent, or (3) permission of the instructor.

EPSY 577  Foundations of Qual Methods  credit: 4 hours.
Introduction to epistemological, methodological, ethical, and political issues characterizing the broad field of qualitative inquiry. Topics covered include an overview of logical positivism and logical empiricism; the Continental philosophers' critique of scientism and the emergence of hermeneutics; sociological theories of Verstehen; interpretive anthropology; feminist qualitative inquiry; social constructionism; contemporary crises of ethics, representation, and justification.

EPSY 578  Qualitative Inquiry Methods  credit: 4 hours.
Introductory course addressing the practice of qualitative inquiry. Topics include developing inquiry questions appropriate for qualitative studies; designing qualitative studies; generating data via interviews, observations, document analyses; analyzing and interpreting qualitative data; judging the quality of inquiry; representing and reporting qualitative inquiry; addressing ethical and political issues in the conduct of qualitative inquiry.

EPSY 580  Statistical Inference in Educ  credit: 4 hours.
Introduction to inferential statistical methods in education; includes probability theory, distribution theory, interval estimation, hypothesis testing, regression and correlational analysis, and analysis of variance. Prerequisite: EPSY 480 or equivalent.

EPSY 581  Applied Regression Analysis  credit: 4 hours.
Emphasis on educational research applications of correlational techniques; special attention to issues in principles of research design underlying appropriate uses of such techniques as multiple, partial, and part (semipartial) correlation and factor analysis; and illustration of techniques by examples drawn from published studies and projects conducted on this campus. Emphasis will be placed on application and interpretation of techniques rather than on theoretical rationales. Same as PSYC 581. Prerequisite: EPSY 580 or equivalent; consent of instructor.

EPSY 582  Advanced Statistical Methods  credit: 4 hours.
Advanced topics in analyses of variance and covariance, and principles of experimental design; brief introduction to multivariate analysis, including rudiments of matrix algebra. Prerequisite: EPSY 580, PSYC 407, or equivalent.

EPSY 583  Single Subject Research Design  credit: 4 hours.
Same as SPED 583. See SPED 583.

EPSY 584  Multivar Anlys in Psych and Ed  credit: 4 hours.
Same as PSYC 594 and SOC 584. See PSYC 594.

EPSY 585  Theories of Measurement I  credit: 4 hours.
Classical test theory (true score, error of measurement, reliability and validity of test scores, composite measures); proposed alternatives to the classical model (generalizability theory, matrix sampling, latent trait theory, criterion-referenced measurement). Same as PSYC 595. Prerequisite: EPSY 580 or PSYC 407, or equivalent; EPSY 486 or PSYC 490, or equivalent.

**EPSY 587  Hierarchical Linear Models**  credit: 4 hours.
This course provides an overview of the use of multilevel models. Students will learn the techniques and theory of hierarchical linear models and apply the methods to data from studies in education, psychology and social sciences. Topics covered include multilevel analyses, random intercept and slope models, 2- and 3-level models, hypothesis testing, model assessment, longitudinal (repeated measures) data, and generalized hierarchical models for categorical variables. Same as PSYC 587 and STAT 587. Approved for both S/U and letter grading. Prerequisite: EPSY 581 and EPSY 582, or PSYC 406 and PSYC 407.

**EPSY 588  Covar Struct and Factor Models**  credit: 4 hours.
Same as PSYC 588, SOC 588, and STAT 588. See PSYC 588.

**EPSY 589  Categorical Data in Ed/Psyc**  credit: 4 hours.
Concepts and methods for analyzing categorical data with an emphasis placed on building and applying models in education, sociology and psychology. Generalized linear models covered including logistic and Poisson regression models, loglinear, logit, and probit models, and models for ordinal data. Same as PSYC 589 and SOC 579. Approved for letter and S/U grading. Credit is not given for both EPSY 589 and STAT 426. Prerequisite: EPSY 581 or PSYC 507.

**EPSY 590  Advanced Seminar in Educ Psyc**  credit: 0 TO 4 hours.
Seminar in educational psychology; topics relate to the areas of specialization represented by the various divisions within the department. Approved for both letter and S/U grading. Prerequisite: Consent of instructor required.

**EPSY 591  Field Study and Thesis Seminar**  credit: 4 TO 8 hours.
Assists doctoral candidates in planning field studies and thesis problems. Students are expected to present their studies at each of four stages: (1) the inception, delimitation, tentative design stage; (2) the proposed design stage; (3) the revised design stage; and (4) the final design stage. Students are expected to analyze critically all presentations. Prerequisite: Limited to students who have been admitted for doctoral study.

**EPSY 595  Independent Study**  credit: 0 TO 4 hours.
Offers opportunity and challenge of self-directive, independent study; develops the individual's ability as an independent student; and enables the student to pursue needed study in a field in which appropriate courses are not being offered during a given term. Approved for both letter and S/U grading. May be repeated with approval. Prerequisite: Approval of study outline by adviser and the department chairperson prior to enrollment.

**EPSY 599  Thesis Research**  credit: 0 TO 16 hours.
Individual direction of research and thesis writing. Approved for S/U grading only. May be repeated.
ESES 103  Earth's Physical Systems  credit: 4 hours.
Same as GEOG 103. See GEOG 103.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ESES 104  Geology of the National Parks  credit: 3 hours.
Same as GEOL 104. See GEOL 104.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ESES 106  Geographies of Globalization  credit: 3 hours.
Same as GEOG 106. See GEOG 106.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences
UIUC: Western Compartv Cult

ESES 117  The Oceans  credit: 3 hours.
Same as GEOL 117. See GEOL 117.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ESES 120  Severe and Hazardous Weather  credit: 3 hours.
Same as ATMS 120. See ATMS 120.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ESES 140  Climate and Global Change  credit: 3 hours.
Same as ATMS 140. See ATMS 140.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ESES 143  History of Life  credit: 3 hours.
Same as GEOL 143. See GEOL 143.
This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

ESES 200  ESES Colloquium  credit: 2 hours.
Interdisciplinary seminar series intended to bring together majors and faculty for exposure to and discussion of diverse perspectives on issues related to the Earth Systems. Offered for S/U grading only. May be repeated to a maximum of 4 hours.

ESES 208  History of the Earth System  credit: 4 hours.
Same as GEOL 208. See GEOL 208.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ESES 210  Contemp Social & Env Problems  credit: 3 hours.
Same as GEOG 210. See GEOG 210.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ESES 222  Big Rivers of the World  credit: 3 hours.
Same as GEOG 222. See GEOG 222.

ESES 333  Earth Materials and the Env  credit: 4 hours.
Same as GEOL 333. See GEOL 333.

ESES 379  Introduction to GIS  credit: 4 hours.
Same as GEOG 379. See GEOG 379.

ESES 381  Environmental Perspectives  credit: 3 hours.
Same as GEOG 381. See GEOG 381.

ESES 401  ESES Capstone  credit: 3 hours.
Capstone experience for majors in Earth System, Environment, and Society.

ESES 411  Geomorphology  credit: 4 hours.
Same as GEOL 401. See GEOL 401.

ESES 421  Earth Systems Modeling  credit: 4 hours.
Same as ATMS 421, GEOG 421, GEOL 481, and NRES 422. See ATMS 421.

ESES 466  Environmental Policy  credit: 3 OR 4 hours.
Same as GEOG 466. See GEOG 466.

ESES 467  Dynm Simul of Nat Res Problems  credit: 3 OR 4 hours.
Same as ECON 415 and GEOG 467. See GEOG 467.

ESES 470  Introduction to Hydrogeology  credit: 4 hours.
Same as GEOL 470. See GEOL 470.
### ESL 110  **Engl Pronun for Acad Purposes**  credit: 0 hours.
Designed to improve the international student's ability to speak and understand English at normal conversational speed and to give the student the ability to continue improving pronunciation skills after the course is finished. Focus on the rhythm, stress, intonation, and sounds of natural speech, and the use of ordinary English spelling to guide the pronunciation of newly encountered words. Approved for S/U grading only. Student must be an undergraduate to receive credit. Students should consult their college concerning use of credit from this course. Prerequisite: Recommendation from UIUC English as a Second Language Placement Test.

### ESL 113  **Engl Structure & Paragraph Dev**  credit: 3 hours.
Introduction to the process of writing; fundamentals of paragraph development; development of oral skills. Students should consult their college concerning use of credit from this course toward graduation. Prerequisite: Recommendation from UIUC English as a Second Language Placement Test.

### ESL 114  **Intro to Academic Writing**  credit: 3 hours.
Review of the fundamentals of paragraph writing and introduction to the multi-paragraph essay; instruction on basics of library research. The ESL 114/ESL 115 sequence fulfills the campus Composition I requirement for non-native speakers of English. Prerequisite: ESL 113 or recommendation from UIUC English as a Second Language Placement Test. This course satisfies the General Education Criteria for a:
- UIUC: Freshman Composition I

### ESL 115  **Principles of Academic Writing**  credit: 3 hours.
Introduction to the research paper, including a variety of writing and skill-building tasks; development of peer and self-editing skills. The ESL 114/ESL 115 sequence fulfills the campus Composition I requirement for non-native speakers of English. Prerequisite: ESL 114 or equivalent, recommendation from UIUC English as a Second Language Placement Test. This course satisfies the General Education Criteria for a:
- UIUC: Freshman Composition I

### ESL 500  **Oral and Written Communication**  credit: 0 hours.
Introduction to the conventions of group discussions and formal oral presentations; introduction to paragraph development and organization of American academic writing. Approved for both letter and S/U grading. Credit may not be used toward a graduate degree. Prerequisite: Recommendation from UIUC English as a Second Language Placement Test.

### ESL 501  **Intro to Academic Writing**  credit: 0 hours.
Introduction to the use of rhetorical modes typical of academic writing; introduction to the research paper; review of strategies for effective and critical reading. Approved for S/U letter grading only. Credit may not be used toward a graduate degree. Prerequisite: ESL 500, or recommendation from UIUC English as a Second Language Placement Test.

### ESL 502  **Advanced Academic Writing I**  credit: 0 hours.
Integration of the four skills of reading, writing, listening, and speaking; special focus on advanced academic writing at the graduate level, including writing such as proposals, research reports, theses, as appropriate; review of principles of writing including writing from sources. Approved for S/U grading only. Credit may not be used toward a graduate degree. Prerequisite: ESL 501, or recommendation from UIUC English as a Second Language Placement Test.

### ESL 503  **Advanced Academic Writing II**  credit: 0 hours.
Continuation of ESL 502 with emphasis on seminar presentation and thesis- and dissertation-related skills. Approved for S/U grading only. Credit may not be used toward a graduate degree. Prerequisite: ESL 502.

### ESL 504  **English Pronunciation for ITAs**  credit: 0 hours.
Sounds, rhythm, and melody of spoken English for current and potential international teaching assistants who are required to teach in English. Includes word and phrase level study; special emphasis on the pronunciation of English vocabulary in students' own academic disciplines. Approved for S/U grading. Prerequisite: Placement based on SPEAK.

### ESL 505  **Intl Business Communication**  credit: 0 hours.
Course seeks to improve student's English usage for both professional and academic purposes. Skills covered include business letter writing, writing of resumes, research paper writing, formal oral presentations, and informal discussion with special focus on the needs of non-native English speakers. Approved for S/U grading only.

ESL 506  **Oral Communication for ITAs**  credit: 0 hours.
Focuses on use of English at the discourse level, with videotaping and critique of student presentation and development of teaching strategies related to university classroom and laboratory contexts. Approved S/U grading only. Prerequisite: Consent of instructor.

ESL 507  **Adv Academic writing MATSEL**  credit: 0 hours.
Focus on advanced academic writing in the field of Teaching English as a Second Language at the graduate level. Introduces rhetorical modes of writing in TESL, critical reading in the field and includes source-based writing, including critical reviews, proposals, and research reports. Approved for S/U grading only. Credit may not used toward a graduate degree. Credit is not given for both ESL 507 and any of ESL 500, ESL 501, and ESL 502.

ESL 510  **Engl Pronun for Acad Purposes**  credit: 0 hours.
Designed to improve the international student's ability to speak and understand English at normal conversational speed and to give the student the ability to continue improving pronunciation skills after the course is finished. Focus on the rhythm, stress, intonation, and sounds of natural speech, and the use of ordinary English spelling to guide the pronunciation of newly encountered words. Approved for S/U grading only. Credit may not be used toward a graduate degree. Prerequisite: Recommendation of UIUC English as a Second Language Placement Test.
European Union Studies

European Union Center
Coordinator: Laura A. Hastings
Program Office: 302 E. John Street, Suite 1705, Champaign
Phone: 265-7515
www.ips.uiuc.edu/eu/

EURO 501  Proseminar: European Union  credit: 4 hours.
A graduate-level introduction to the European Union, its history, decision-making processes, legal framework and economic effects.

EURO 502  European Union Topics  credit: 4 hours.
European Union history, politics, law, culture and identity. May be repeated in separate terms to a maximum of 8 hours.
Fine and Applied Arts

Dean and Program Administrator: Michael J. Andrejasich
College of Fine and Applied Arts: 110 Architecture Building, 608 East Lorado Taft Drive, Champaign
Phone: 333-6061
www.faa.uiuc.edu

FAA 130  International Arts  credit: 3 hours.
Study of the fine and applied arts as an intellectual approach to understanding other cultures, societies and their social identities. Course is open to all UIUC undergraduate students. This course can be used to fulfill either Western or Nonwestern general education categories, but not both.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures
UIUC: Western Compartv Cult

FAA 199  Undergraduate Open Seminar  credit: 0 TO 3 hours.
Approved for both letter and S/U grading. May be repeated in the same or separate semesters to a maximum of 6 hours.

FAA 291  Civic Engagement Seminar  credit: 1 hours.
Introduces students to community development practices and the participatory approach followed by the East St. Louis Action Research Project (ESLARP). Detailed information about the course is available at www.eslarp.uiuc.edu. Enrollment in this class requires attendance in two in-class sessions and one outreach weekend. Approved for both letter and S/U grading. May be repeated in separate terms to a maximum of 3 hours.

FAA 299  FAA Study Abroad  credit: 0 TO 18 hours.
Provides campus credit for foreign study and/or travel. A detailed proposal for study abroad must be submitted for approval by the appropriate committee of the department in which the student is studying and the college dean's office prior to such study abroad. Final determination of credit and its application toward the degree is made after a review of the student's work abroad by the above committee and college office. (summer session, 0 to 6 undergraduate hours). Approved for both letter and S/U grading. Prerequisite: Junior standing in the department; approval of the student's proposal by the departmental committee and the college office.

FAA 300  Entrepre & Self Promo in Arts  credit: 3 hours.
Focuses on tailoring written and verbal presentations to a variety of audiences. Students explore case studies of self-promotional package, conduct job searches and apply for arts-administration or design positions. Guest lecturers include experts in copyright law, grant writing, and tax issues for the self-employed. Prerequisite: Students must be Juniors or Seniors and majors in FAA.

FAA 391  Action Research Seminar  credit: 3 hours.
Introduction to applied action research within the social sciences and humanities with the subject of research selected from partner organizations in East St. Louis, Illinois. Students establish a research question, conduct fieldwork using qualitative and/or quantitative methods, and complete a project of sufficient quality for publication or presentation. May be repeated to a maximum of 12 hours in subsequent terms. Prerequisite: Junior standing or consent of instructor.
Finance

Finance
Chair of Department: David Ikenberry
Department Office: 340 Wohlers Hall, 1206 South Sixth, Champaign
Phone: 244-2239
www.business.uiuc.edu/finance/

FIN 100  **Survey of Finance**  credit: 1 hours.
An introductory course, for both current majors and non-majors, intended to give the flavor of Finance. The course will present brief introductions to such topics as personal finance, investments, corporate finance, real estate, and insurance. It is intended for students who are just beginning their studies. Approved for S/U grading only.

FIN 199  **Undergraduate Open Seminar**  credit: 0 TO 5 hours.
Approved for both letter and S/U grading. Course may be repeated for credit.

FIN 221  **Corporate Finance**  credit: 3 hours.
Introductory study of corporate financial management, in particular how the financial manager’s choices add value to shareholder wealth through investment financing and operating decisions. Prerequisite: Credit or concurrent registration in ACCY 202 and ECON 203.

FIN 230  **Introduction to Insurance**  credit: 3 hours.
Introductory course on the role of insurance in society; covers insurance terminology, common personal insurance policies (auto, health, life and homeowners) and current issues.

FIN 232  **Personal Wealth Management**  credit: 3 hours.
Studies personal wealth management techniques with an emphasis on life insurance products; covers life insurance policies, annuities, trusts, buy- sell arrangements, investing in stocks, bonds and mutual funds, banking and borrowing, purchasing residential and commercial real estate, income and estate taxation and management of personal financial portfolio.

FIN 241  **Fundamentals of Real Estate**  credit: 3 hours.
A survey of real estate finance, appraisal, investment, law, brokerage, management, development and economics. Special attention is given to the analysis of aggregate real estate and mortgage markets, to the individual transactions within these markets, and to the legal and institutional factors which affect these markets. Prerequisite: ECON 102.

FIN 300  **Financial Markets**  credit: 3 hours.
Theory and applications associated with the functioning of financial markets to include the conceptual foundations of portfolio theory, risk management, and asset valuation. The stock, money, bond, mortgage, and futures and options markets are examined. Prerequisite: FIN 221; CS 105 or demonstration of electronic spreadsheet competency.

FIN 311  **Investments**  credit: 3 hours.
Current theories of portfolio management are covered in considerable detail to provide a conceptual framework for the evaluation of investment strategies. Applications and implementation are covered in depth, including performance evaluation and international diversification. 3 undergraduate hours. Prerequisite: FIN 300.

FIN 321  **Advanced Corporate Finance**  credit: 3 hours.
Theories of firms’ investment and financing decisions are covered. Topics include dividend policy, capital budgeting, capital structure, bankruptcy, long- term debt and leasing decisions. Prerequisite: FIN 300.

FIN 412  **Options and Futures Markets**  credit: 3 hours.
Introduction of options and futures markets for financial assets; examination of institutional aspects of the markets; theories of pricing; discussion of simple as well as complicated trading strategies (arbitrage, hedging and spread); applications for asset and risk management. 3 undergraduate hours. Prerequisite: FIN 300 or consent of instructor.

FIN 413  **Financial Engineering**  credit: 3 hours.
This course will present and analyze modern tools for identification, measurement, and management of financial risk faced by corporations and institutional investors; in particular as related to the application of futures, forwards, options, swaps, and other derivatives. The focus will be evenly split between theoretical models and practical applications, and will include careful consideration of parameter estimation and numerical implementation. 3 undergraduate hours. Prerequisite: FIN 300 or consent of instructor.

FIN 414  **Urban Economics**  credit: 3 OR 4 hours.
FIN 419  **Real Client Managed Portfolios**  credit: 3 hours. 
Applies academic topics on financial markets, security analysis/valuation and portfolio management to hands-on investment management. Students will form and review objectives, constraints, and investment policy as it relates to the client's money under management. They will purchase securities, monitor performance of the portfolio, and make recommendations for any adjustments to the holdings. They will be fully educated and responsible to the fiduciary and ethical standards of professional money management as guided by the Association for Investment Management and Research (AIMR). 3 undergraduate hours. May be repeated to a maximum of 9 hours. Prerequisite: FIN 311 or consent of instructor.

FIN 422  **Cases in Corporate Finance**  credit: 3 hours. 
Course totally devoted to the study of financial management cases, provides students a hands-on learning experience. The case work helps students to develop their analytical and interpretative skills in solving unstructured real world problems. The theoretical concepts and tools learned in the introductory finance courses provide the foundation for the case studies. Topics discussed include financial forecasting and working capital management; capital budgeting and cost of capital; and capital structure, dividend policy, corporate financing, financial restructuring, financial distress, mergers, acquisitions and firm valuation. 3 undergraduate hours. Prerequisite: FIN 300 and FIN 321.

FIN 423  **Financing Emerging Businesses**  credit: 3 OR 4 hours. 
The study of the business environment, alternative methods of organization and financing, use of financial statements as a management tool, valuation methods and approaches to ethical dilemmas from the perspective of an owner-manager. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: FIN 300 or consent of instructor.

FIN 431  **Property-Liability Insurance**  credit: 3 OR 4 hours. 
Examines in detail the functions of property-liability insurers, including marketing, underwriting, claims, ratemaking and administration, and the major current issues facing this industry. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: FIN 230.

FIN 432  **Managing Fin Risk for Insurers**  credit: 3 OR 4 hours. 
Introduces basic concepts in financial economics used in the analysis and management of financial risks, with an emphasis on the applications by insurers and pension plans; topics include decision making under uncertainty, economic statistics, deterministic and stochastic interest rate models, derivative securities, valuation, binomial models and option pricing models. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: FIN 300; either FIN 230 or FIN 232; MATH 245 or equivalent; MATH 409; MATH 415; electronic spreadsheet proficiency.

FIN 433  **Corporate Risk Management**  credit: 3 OR 4 hours. 
Case study course examining how corporations deal with pure risk. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: FIN 221, FIN 431, and FIN 434.

FIN 434  **Employee Benefit Plans**  credit: 3 OR 4 hours. 
Studies the purpose, structure, and financial aspects of employee benefit plans, including pensions, health insurance, life insurance, and disability plans. Same as LIR 434. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: FIN 300 or consent of instructor.

FIN 443  **Legal Issues in Real Estate**  credit: 3 OR 4 hours. 
Overview of legal concepts, issues, and principles involving real estate. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

FIN 444  **Urban Real Estate Valuation**  credit: 3 OR 4 hours. 
The terminology, theory and techniques of real estate valuation (appraisal); a modern view of the three approaches to estimating value - sales comparison, cost and income. Special requirements include local field trips to appraise at least one single-family property and one income property. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: FIN 221, or FIN 241, or consent of instructor.

FIN 445  **Real Estate Investment**  credit: 3 OR 4 hours. 
An approach to the evaluation of real estate investment opportunities. Begins with the identification of the investor's goals and ends with an investment decision. Considers legal, physical, locational, and financial constraint, aggregate real estate and financial markets, tax considerations and investment criteria. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: FIN 221 and FIN 241 and electronic spreadsheet proficiency, or consent of instructor.

FIN 446  **Real Estate Financial Markets**  credit: 3 OR 4 hours. 
Discusses real estate financing techniques and the secondary market for real estate financial assets including mortgage backed securities and mortgage backed finance. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: FIN 300 or consent of instructor.

FIN 451  **Intl Financial Markets**  credit: 3 hours. 
This course covers the three major international financial markets; the foreign exchange market, the eurocurrency market, and the international equity and bond market. The course looks at international financial decisions including operations, structure and valuation. 3 undergraduate hours. Prerequisite: FIN 300 and FIN 321.

FIN 461  **Financial Intermediation**  credit: 3 hours.
Financial intermediaries survey of the structure, functions, regulation, and risk management activities of financial intermediaries; central banking and monetary policy effects on financial intermediaries. 3 undergraduate hours. Prerequisite: FIN 300 or consent of instructor.

FIN 490  **Special Topics in Finance**  credit: 1 TO 3 hours.
May be repeated in the same term to a maximum of 6 hours. May be repeated in subsequent terms to a maximum of 9 hours. Prerequisite: FIN 300 or consent of instructor.

FIN 494  **Senior Research**  credit: 2 TO 4 hours.
Research and reading course for students concentrating in finance, insurance, urban land economics, or related areas who meet one of the following requirements: (1) have a cumulative grade-point average of 3.0 or better; (2) have attained Honors Day recognition in the junior year; or (3) have consent of instructor. May be taken by students in the college honors program in partial fulfillment of the honors requirements. 2 to 4 undergraduate hours. No graduate credit. May be repeated as topics vary. Prerequisite: Senior standing.

FIN 501  **Financial Economics**  credit: 2 OR 4 hours.
Theory and logic of microeconomics, taught with applications to financial markets. First half of course covers the way in which efficient markets work to allocate resources; second half covers the way in which markets fail. Also includes selected topics in macroeconomics. Approved for both letter and S/U grading. May be repeated in the same or separate terms to a maximum of 4 hours if topic varies.

FIN 511  **Investments**  credit: 2 OR 4 hours.
Introduction to investment analysis, including the theory and implementation of portfolio theory; empirical evidence on the performance of financial assets; evaluation of portfolio investment strategies; and the extension of diversification to international markets. Prerequisite: FIN 520; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 512  **Financial Derivatives**  credit: 4 hours.
Introduction to options, futures, swaps and other derivative securities; examination of institutional aspects of the markets; theories of pricing; discussion of simple as well as complicated trading strategies (arbitrage, hedging, and spread); applications for asset and risk management. Prerequisite: FIN 520; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 513  **Financial Engineering I**  credit: 4 hours.
Provides an introduction to modern techniques for pricing options, swaps, and related financial instruments; the use of such instruments in managing financial risk; and the measurement and management of their risks. Prerequisite: FIN 520; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 514  **Financial Engineering II**  credit: 4 hours.
Presents the main ideas and techniques of modern option pricing theory, including: the Black-Scholes-Merton analysis; risk-neutral probabilities and the probabilistic solution; numerical techniques for computing option prices; an introduction to term structure modeling; and perhaps other topics, at the discretion of the instructor. Prerequisite: Prior or concurrent registration in FIN 513 or consent of instructor.

FIN 515  **Fixed Income Portfolios**  credit: 2 OR 4 hours.
Conceptual foundations and implementation of strategies for the selection, evaluation, and revision of portfolios of fixed-income financial assets (bonds); examination of related research. Prerequisite: FIN 520; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 516  **Term Structure Models**  credit: 4 hours.
Extensive coverage of several models of the term structure of interest rates, including their implementation, calibration, and use in valuing interest rate derivatives. Will include applications of both Monte Carlo methods and finite-difference or "tree" methods. Approved for both letter and S/U grading. Prerequisite: FIN 500 and FIN 512, or equivalents.

FIN 517  **Credit Risk and Instruments**  credit: 4 hours.
Principal approaches to modeling credit/default risk and the most important credit derivatives and structured credit instruments, with a focus on using the modeling approaches to value collateralized debt obligations and other structured credit instruments. Approved for both letter and S/U grading. Prerequisite: FIN 500 and FIN 512, or equivalents.

FIN 520 Financial Management credit: 4 hours.
Introduction to financial management and decision making. Topics include risk-return relationships for financial securities; financial statement analysis and forecasting; working capital management; capital budgeting and the resource allocation process; capital structure and the cost of capital; dividend policy. Prerequisite: Enrollment in the Executive MBA, MSBA, or MS program.

FIN 521 Advanced Corporate Finance credit: 4 hours.
Addresses both the theoretical and applied aspects of firms' financing decisions; topics include capital structure and cost of capital theories; mergers, acquisitions and leveraged buyouts; options, warrants, and convertibles; venture capital and initial public offerings; and pensions. Prerequisite: FIN 520, plus either ECON 506 or BADM 572 or concurrent registration in either course; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 522 Cases in Financial Strategy credit: 4 hours.
Course focuses on financial management cases. Provides students with an active learning experience. Case work is based on concepts learned in introductory corporate finance. Topics discussed include measuring and interpreting cash flow performance, financial forecasting and turnaround management; capital investment and cost of capital; dividend policy; and firm valuation. Prerequisite: FIN 520, plus either ECON 506 or BADM 572 or concurrent registration in either course; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 524 Mergers and Acquisitions credit: 4 hours.
The primary objective of this course is to give students experience in valuing firms. While the primary focus of the course is on mergers and acquisitions, the course will also cover topics such as initial public offerings, leveraged buyouts, spin-offs, and divestitures. Prerequisite: FIN 520; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 541 Real Estate Economics credit: 4 hours.
Discusses the theory and practice of real estate and urban land economics; emphasizes real estate market analysis, finance, appraisal, and investment. Prerequisite: FIN 520, plus ECON 302, ECON 500, or equivalent; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 551 International Finance credit: 4 hours.
Explores the characteristics of the international financial market and examines various aspects of corporate financial management. Topics may include international parity conditions, exchange rate risk management, country risk, cross-border investment analysis, multi-national firm budgeting, hedging in foreign currency markets, accessing international financial markets for financing, and competitive strategy in a global marketplace. Prerequisite: FIN 520; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 561 Financial Intermediation credit: 4 hours.
Studies financial intermediation emphasizing analysis of problems faced by commercial bank managers. The three main areas covered are: the role of financial intermediation and its relation to the macro-economy, information technology, and government regulation; examination of the problems of pricing and evaluating the risk of bank financial services such as loans, loan commitments, and swaps; and consideration of bank portfolio risk management. Prerequisite: FIN 520; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 562 Macrofinance credit: 4 hours.
Overview of the workings of the financial sector of the macro economy; includes the roles of financial institutions, financial markets, macroeconomic policies, interest rates, and the flows of funds. Prerequisite: FIN 520; or MBA 505 - Section G (Finance II); or consent of instructor.

FIN 563 Special Topics in Finance credit: 0 TO 4 hours.
Approved for both letter and S/U grading. May be repeated to a maximum of 18 hours in a semester. May be repeated to a maximum of 32 hours in subsequent semesters. Prerequisite: Varies by section.

FIN 569 Individual Study and Research credit: 0 TO 4 hours.
Directed reading and research. Approved for both letter and S/U grading.

FIN 591 Theory of Finance credit: 4 hours.
Examines theoretical frameworks for financial decision making under certainty and uncertainty, as well as perfect and imperfect capital markets; discusses state preference, mean-variance, and continuous time models; emphasizes the structure of individual utility functions. Prerequisite: ECON 502; STAT 400; and admission to doctoral program or consent of instructor.

FIN 593 Seminar in Investments credit: 4 hours.
Investigates portfolio theory, CAPM, OPM, and arbitrage pricing theory theoretically and empirically; uses both mathematical statistics and modern econometric models to empirically analyze investment decisions and portfolio management. Prerequisite: FIN 591 and ECON 507.

FIN 594  Seminar in Corporate Finance  credit: 4 hours.
Theories, paradigms, and models of nonfinancial corporations; investigates the theoretical foundations and empirical evidence regarding corporate resource allocation, capital structure decisions, and dividend policies; covers in detail contingent claim analysis, signaling theory, and agency theory. Prerequisite: FIN 591 and ECON 507.

FIN 595  Seminar in Insurance  credit: 4 hours.
Reviews recent contributions to the insurance literature concentrating upon current issues and research methodology; requires students to review selected recent articles on a variety of topics; gives attention to application of finance and economic theory to insurance issues and to empirical techniques for testing hypotheses. Examples of issues include the application of asset pricing models to insurance pricing, portfolio optimization for insurance companies, capital markets and insurance cycles, moral hazard and adverse selection. Prerequisite: FIN 591.

FIN 596  Seminar in Fin Intermediation  credit: 4 hours.
Reports and explores research in areas of commercial bank models and behavior, bank structure and regulation, interest rate theories, financial markets, and the impact of macroeconomic policies and procedures on financial markets and institutions; discusses current research and research procedures. Prerequisite: FIN 591 and ECON 503.

FIN 597  Seminar in Real Estate Finance  credit: 4 hours.
Examines theoretical and empirical research into selected problems in urban land economics. Prerequisite: FIN 241 and ECON 302; or FIN 541; or consent of instructor.

FIN 599  Thesis Research  credit: 0 TO 16 hours.
Required for those writing master's and doctoral theses in finance. Approved for S/U grading only. May be repeated to a maximum of 16 hours.
French

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Department Office: 2090 Foreign Languages Building, 707 South Mathews Avenue, Urbana
Phone: 333-2020
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FR 101  Elementary French I  credit: 4 hours.
Four-skill course leading toward elementary proficiency in oral expression, listening comprehension, reading, writing, and cultural understanding. Open only to students with no previous study of French. Online language laboratory and internet assignments required. Credit is not given for both FR 101 and FR 105.

FR 102  Elementary French II  credit: 4 hours.
Continuation of FR 101. Introduces cultural and supplementary enrichment materials; requires online laboratory sessions as in FR 101. Credit is not given for both FR 102 and FR 105 or FR 106. Prerequisite: FR 101 or one year of high school French.

FR 103  Intermediate French I  credit: 4 hours.
Continuation of FR 102. Introduces students to a full range of structures to complete their initial study of the grammatical system; emphasizes the development of all four skills and cultural understanding through readings and audiovisual enrichment materials. Online language laboratory and internet assignments required. Students planning to major or minor in French should take FR 133 in lieu of FR 103. Credit is not given for both FR 103 and FR 106. Prerequisite: FR 102 or equivalent, or a placement score showing high school achievement equivalent to FR 102.

FR 104  Intermediate French II  credit: 4 hours.
Continuation of FR 103. Comprehensive grammar review with emphasis on oral expression and the continued development of reading and written skills. Completion satisfies graduation requirement in the College of Liberal Arts and Sciences. Students planning to take advanced French courses should take FR 134 in lieu of FR 104. Prerequisite: FR 103 or equivalent, or a placement score showing high school achievement equivalent to FR 103.

FR 105  French Active Review I  credit: 4 hours.
Reviews materials covered in FR 101 and FR 102 in preparation for entrance into FR 103 or FR 133. Open to students with high school French or by placement score or consent of department only. Not open to students with credit in FR 101 or FR 102. Prerequisite: One or two years of high school FR and placement score in 101 range.

FR 106  French Active Review II  credit: 4 hours.
Reviews materials covered in FR 102 and FR 103 in preparation for entrance into FR 104 or FR 134. Not open to students with credit in FR 101, FR 102, FR 103 or FR 105. Open to students with high school French or by placement score or consent of department only. Prerequisite: Three or four years of high school FR with placement at 102 level.

FR 133  Accel Intermediate French I  credit: 4 hours.
Similar to FR 103, but accelerated for those interested in pursuing French in advanced courses; includes comprehensive grammar review and readings in literature and culture. Prerequisite: FR 102, FR 105 or two semesters of college French, or a placement score showing high school achievement equivalent to FR 102. Normally for students with a "B" average in French or with consent of instructor.

FR 134  Accel Intermed French II  credit: 4 hours.
Continuation of FR 133. Comprehensive grammar review and readings in French literature and culture preparatory for continued work at the advanced level; emphasizes all four skills and culture. Prerequisite: FR 133 or FR 106, or FR 103 with department approval, or three semesters of college French, or a placement score showing high school achievement equivalent to FR 103.

FR 156  Exploring Paris  credit: 3 hours.
Examines the role of Paris at the heart of French culture and the idea of the "French exception." Focus will be on the city and its representation in French culture. Attention will be given to Parisian notions of food, the arts, sexualities, and the role of the individual. All readings are in English. All films will be shown with subtitles. No knowledge of French required.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

FR 179  Migration & Fr Nat ID  credit: 3 hours.
Studies books and films that emphasize culture difference and the complexities of the post colonial world, focusing on the impact of migration and cultural interaction on contemporary France. Stresses themes of immigration and exile, tensions between relations of domination and exploitation and between colonizing and colonized peoples, and the cultural pluralities of community and nation.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

**FR 191 Freshman Honors Tutorial**  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars and Associates. May be repeated one time. Prerequisite: Consent of departmental honors advisor.

**FR 199 Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

**FR 205 Oral French**  credit: 2 hours.
Developing oral facility and aural comprehension, focusing on everyday events. Prerequisite: FR 104 or FR 134 or equivalent.

**FR 207 Grammar and Composition**  credit: 3 hours.
Training in French syntax, translation from English into written French, and directed composition. Prerequisite: Four years of high school French or equivalent, or FR 134 or, with departmental approval, FR 104.

**FR 208 Critical Writing and Reading**  credit: 3 hours.
Intensive practice of writing and reading skills in French, emphasizing vocabulary and critical concepts important to analyzing literary and cultural texts. Prerequisite: FR 207 or equivalent must be taken prior to this course.

**FR 209 Intro to French Lit I**  credit: 3 hours.
Survey of French literature from the Middle Ages to the French Revolution. Prerequisite: FR 207 or equivalent. FR 208 must be taken prior to or concurrently with this course.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**FR 210 Intro to French Lit II**  credit: 3 hours.
Survey of French literature since the French Revolution. Prerequisite: FR 207 or equivalent. FR 208 must be taken prior to or concurrently with this course.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**FR 213 French Phonetics**  credit: 2 hours.
Practical introduction to French phonetics, stressing pronunciation. Prerequisite: FR 104 or FR 134 or equivalent.

**FR 217 Advanced Oral French**  credit: 2 hours.
Intensive practice in oral French to improve fluency, vocabulary, comprehension, pronunciation, and syntax. Activities include reports, discussion, and role-play in professional situations. Also includes written assignments based on class activities. May be repeated in separate terms (but not for credit in the major or minor) to a maximum of 4 hours. Prerequisite: FR 205 and FR 213 or equivalent.

**FR 219 Intro to Francophone Lit**  credit: 3 hours.
Interpretation and analysis of major works written in French from Quebec, the Caribbean, Sub-Saharan Africa, and the Maghreb and Mashrek. Same as CWL 222. May be repeated to a maximum of 6 hours if topics vary. Prerequisite: FR 207.

**FR 240 Constr Afr and Carib Identity**  credit: 3 hours.
Introduces students to cultural pluralism by comparing and contrasting African and Caribbean identities, as they are represented in literature and film. Taught in English. Same as AFST 209, CWL 225, and LAST 240. Credit is not applicable to the major or minor in French.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

**FR 299 Study Abroad**  credit: 0 TO 18 hours.
Lectures, seminars, and practical work in French language, literature, civilization, and in other academic areas appropriate to the student's course of study. Maximum of 34 hours per academic year. Approved for both letter and S/U grading. Prerequisite: FR 209 and two of the following: FR 205, or 207; 2.75 overall average; 3.0 average in French courses.
FR 309  **Poetry**  credit: 3 hours.
The study of major movements and figures in French poetry. Traditions and innovations. Poetic genres. Introduction to versification and 
metrics. Close readings of individual poems. Topics will vary. May be repeated to a maximum of 6 hours. Prerequisite: FR 207, FR 208, 
FR 209, and FR 210; or equivalents.

FR 311  **Narrative Literature**  credit: 3 hours.
Reading and interpretation of selected French novels and short narratives from all periods. History and analysis of narrative literature 
as a genre. Topics will vary. May be repeated to a maximum of 6 hours. Prerequisite: FR 207, FR 208, FR 209, and FR 210; or 
equivalents.

FR 312  **Theater and Performance**  credit: 3 hours.
Reading and interpretation of plays and other performative genres, with attention to historical development and critical analysis. Topics 
will vary. May be repeated to a maximum of 6 hours. Prerequisite: FR 207, FR 208, FR 209, and FR 210; or equivalents.

FR 322  **Movements and Perspectives**  credit: 3 hours.
Focused study and discussion of a major literary movement or critical perspective. Topics will vary. May be repeated to a maximum of 6 
hours. Prerequisite: FR 207, FR 208, FR 209, and FR 210; or equivalents.

FR 323  **Major Literary Figures**  credit: 3 hours.
Presents the works of one or several major figures of French or francophone literary traditions in their cultural contexts. Topics will vary. 
May be repeated to a maximum of 6 hours. Prerequisite: FR 207, FR 208, FR 209, and FR 210; or equivalents.

FR 324  **Literature and the Other Arts**  credit: 3 hours.
Explores relationships between French literature and such fields as art, architecture, and music. Topics will vary. May be repeated to a 
maximum of 6 hours. Prerequisite: FR 207, FR 208, FR 209, and FR 210; or equivalents.

FR 385  **Politics of the European Union**  credit: 3 hours.
Same as GER 385 and PS 385. See PS 385.

FR 390  **Indiv Study Major Tutorial**  credit: 1 TO 12 hours.
Tutorial taken by students during two of their last four terms of undergraduate study. Students read the works on a departmental 
reading list with the guidance of a tutor. May be repeated to a maximum of 12 hours. Approved for both letter and S/U grading. 
Prerequisite: FR 205, FR 207, FR 209, and FR 210, or equivalent; a declared major in French; junior standing.

FR 410  **Modern African Fiction**  credit: 3 OR 4 hours.
Same as AFST 410, CWL 410, and ENGL 470. See AFST 410.

FR 413  **French Phonetics and Phonology**  credit: 3 hours.
Introduction to theoretical aspects of French phonetics and phonology, research methods, and pronunciation exercises on speaking 
styles in French. Prerequisite: FR 213 or equivalent.

FR 414  **Advanced Grammar and Style**  credit: 3 hours.
Advanced theoretical and practical study of present-day French, with free composition and some consideration of stylistics. 
Prerequisite: FR 207 (with a grade of C or better), or equivalent.

FR 416  **Structure of French Language**  credit: 3 hours.
General survey of the linguistic structure of modern standard French, including phonology, morphology, and syntax; emphasis on the 
differences between its spoken and written forms. Same as LING 416. Prerequisite: FR 413 or equivalent training in phonetics.

FR 417  **History of the French Language**  credit: 3 OR 4 hours.
Introduction to the historical development of the French language, from its Latin origins to the present. Analysis of texts from a variety 
of genres across the written history of the language, and an examination of the social role of the language in the definition of France. 
Same as MDVL 417. 3 undergraduate hours. 4 graduate hours. Prerequisite: FR 414.

FR 418  **Language & Minorities in Europe**  credit: 3 OR 4 hours.
Introduction to political, judicial, linguistic, and cultural issues concerning indigenous and migrant/immigrant languages in Europe, 
in particular in France, Germany, Russia, and Hungary. Focuses on political and judicial issues, such as legal aspects of bilingual 
education and minority language use, as well as linguistic and cultural aspects, such as assimilation, language-mixing, and language 
change. Same as GER 418, LING 418, PS 418 and SLAV 418. 3 undergraduate hours. 4 graduate hours.

FR 419  **Techniques in Translation I**  credit: 2 OR 3 hours.
Practical course in the techniques of translating technical, commercial, scientific, and literary texts from English into French and vice versa. 3 undergraduate hours. 2 graduate hours. Prerequisite: FR 414 or consent of instructor.

FR 421  **Techniques in Translation II**  credit: 2 OR 3 hours.
Continuation of FR 419. Practical exercises in translating from French to English and vice versa in a variety of texts, along with an introduction to theoretical aspects of translation. 3 undergraduate hours. 2 graduate hours. Prerequisite: FR 419 or consent of instructor.

FR 435  **French Civilization I**  credit: 3 hours.
Survey of French life and French institutions, intended as a background for literary studies and as a preparation for the teaching of French; given in French. No graduate credit. Prerequisite: FR 205, FR 207, FR 209, and FR 210, or equivalent.

FR 436  **French Civilization II**  credit: 3 hours.
Continuation of FR 435. May be taken independently of FR 435. No graduate credit. Prerequisite: FR 205, FR 207, FR 209, and FR 210, or equivalent.

FR 443  **Studies in French**  credit: 3 TO 4 hours.
See Schedule for current topics. 3 undergraduate hours. 3 to 4 graduate hours. May be repeated in the same or separate terms to a maximum of 12 undergraduate hours or 16 graduate hours. Prerequisite: Junior standing.

FR 460  **Principles of Language Testing**  credit: 3 OR 4 hours.
Same as EIL 460, EPSY 487, GER 460, ITAL 460, PORT 460, SLS 460, and SPAN 460. See EIL 460.

FR 462  **Intro Romance Ling**  credit: 3 OR 4 hours.
Same as ITAL 435, LING 462, PORT 435, RMLG 435, and SPAN 435. See SPAN 435.

FR 471  **Intro Second Lang Learn Tchg**  credit: 4 hours.
Same as CHIN 471, GER 469, HUM 471, JAPN 471, LAT 471, RUSS 471, and SPAN 471. See SPAN 471.

FR 475  **Intro to Comm Lang Tchg**  credit: 4 hours.
Same as CHIN 475, GER 475, JAPN 475, LAT 475, RUSS 475, and SPAN 475. See SPAN 475.

FR 478  **Topics Secondary Lang Tchg**  credit: 4 hours.
Same as CHIN 478, GER 478, JAPN 478, LAT 478, RUSS 478, and SPAN 478. See SPAN 478.

FR 479  **Studies in Francophonie**  credit: 3 OR 4 hours.
Studies of various genres, periods, and topics of French literature outside of France, with a different geographical emphasis each term. Regions include black Africa, the Caribbean, Canada, North Africa, the Middle East, and Switzerland. Same as CWL 434. 3 undergraduate hours. 3 or 4 graduate hours. Maximum of 12 undergraduate hours or 16 graduate hours.

FR 481  **Theoretical Foundations of SLA**  credit: 3 OR 4 hours.
Same as EIL 489, GER 489, ITAL 489, LING 489, PORT 489, SLS 489, and SPAN 489. See EIL 489.

FR 482  **Computer Foreign Lang Tchg**  credit: 4 hours.
Same as CLCV 482, EIL 482, GER 482, HUM 482, ITAL 482, LING 486, PORT 482, SLAV 482, and SPAN 482. See HUM 482.

FR 485  **Commercial & Econ French I**  credit: 2 OR 3 hours.
Studies French business practices: company structures, selling and buying techniques, banking, import/export and other commercial negotiations, employment, formalities, and conventions of letter-writing; involves both theory and practice. 3 undergraduate hours. 2 graduate hours. Prerequisite: FR 414 or equivalent, or consent of instructor.

FR 486  **Commercial & Econ French II**  credit: 2 OR 3 hours.
Emphasizes business correspondence and simulation of business practices in the areas introduced in FR 485; also focuses on geographic and economic topics pertaining to France within the European community and Europe in general. 3 undergraduate hours. 2 graduate hours. Prerequisite: FR 485 or equivalent, or consent of instructor.

FR 488  **French & Comparative Cinema I**  credit: 4 hours.
The art, techniques, sociology, politics of French cinema in the context of French culture, world history, and general film development from 1895 to approximately 1950. Selected trends studied through films from several countries with stress on major French filmmakers including Lumiere, Melies, Gance, Clair, Vigo, Renoir, Carne, Cocteau, Prevert, Clouzot. Meets 6 hours a week. Same as CINE 488, CWL 488, and HUM 488. Knowledge of French not required. Prerequisite: One college-level cinema studies course or consent of instructor.
FR 489  French & Comparative Cinema II  credit: 4 hours.
The art, techniques, sociology, politics of French cinema in the context of French culture, world history, and general film development from approximately 1950 to the present. Selected trends studied through films from several countries with stress on major French filmmakers including Clouzot, Bresson, Chabrol, Resnais, Godard, Truffaut, Berri, Varda, Blier, Marker, Rohmer, and Costa-Gavras. Meets 6 hours a week. Same as CINE 489, CWL 489, and HUM 489. Knowledge of French not required. Prerequisite: One college-level cinema studies course (FR 488 preferred) or consent of instructor.

FR 492  Senior Thesis  credit: 2 hours.
For candidates for honors in French and for other seniors. 2 undergraduate hours. No graduate credit. May be repeated to a maximum of 4 hours. Prerequisite: Senior standing.

FR 498  Senior Seminar  credit: 3 hours.
Studies in authors, genres, themes, and movements in French literature; conducted entirely in French. 3 undergraduate hours. No graduate credit. May be repeated. Prerequisite: Senior standing.

FR 499  Study Abroad  credit: 0 TO 16 hours.

FR 500  Beginning French Grads  credit: 4 hours.
Basic grammar, vocabulary, and reading practice; designed for graduate students desiring help in preparing for the French reading requirements for the Ph.D. Credit may not be used toward a graduate degree.

FR 501  Reading French Grads  credit: 4 hours.
Grammar, vocabulary, and general and special reading; designed for graduate students desiring help in preparing for the French reading requirements for the Ph.D. Credit may not be used toward a graduate degree. Prerequisite: FR 500, or FR 101 and FR 102, or equivalent.

FR 503  The Study of Culture I  credit: 4 hours.
Study of major artistic, historical, political, and literary aspects of France up to the French Revolution with emphasis on the relationship between literature and other aspects of French culture.

FR 504  The Study of Culture II  credit: 4 hours.
Study of major artistic, historical, political, and literary aspects of France from the French Revolution to the present with emphasis on the relationship between literature and other aspect of French culture.

FR 505  Tchg College&Secondary French  credit: 4 hours.
Examination and discussion of classroom goals, procedures and techniques in teaching French at the college and secondary level, associated with a demonstration class and supervision of teaching practice. Required of new teaching assistants in the Department of French.

FR 529  Studies in French Linguistics  credit: 4 hours.
Variable topics course dealing with both synchronic and diachronic aspects of the French language. May be repeated if topics vary.

FR 530  Intro Res and Text Criticism  credit: 4 hours.
Proseminar in literary studies: research and methods; approaches to the literary text. Required of all M.A. and Ph.D. candidates.

FR 531  Intro to Old French Language  credit: 4 hours.
Outline of Old French grammar and training in reading Old French (twelfth and thirteenth centuries). Same as MDVL 531.

FR 532  Studies in Medieval French Lit  credit: 4 hours.
Close study of one or more topics in Old French literature. See Schedule for current topics. Same as MDVL 532. May be repeated if topics vary. Prerequisite: FR 531 or consent of instructor.

FR 533  Studies in 16thC French Lit  credit: 4 hours.
Close study of one or more topics in sixteenth-century French literature; see Schedule for current topics. May be repeated if topics vary.

FR 535  Studies in 17thC French Lit  credit: 4 hours.
Close study of one or more topics in seventeenth-century French literature; see Schedule for current topics. May be repeated if topics vary.

FR 537  Studies in 18thC French Lit  credit: 4 hours.
Close study of one or more topics in eighteenth-century French literature; see Schedule for current topics. May be repeated if topics vary.

FR 539 Studies in 19thC French Lit credit: 4 hours.
Close study of one or more topics in nineteenth-century French literature; see Schedule for current topics. May be repeated if topics vary.

FR 541 Studies in 20thC French Lit credit: 4 hours.
Close study of one or more topics in twentieth-century French literature; see Schedule for current topics. May be repeated if topics vary.

FR 543 French Studies credit: 4 hours.
Flexible course limited only by the concentration of its material in French; may be activated by faculty proposal. May be repeated to a maximum of 16 hours if topics vary.

FR 552 Studies French & Comp Cinema credit: 4 hours.
Historical, aesthetic, social, and technical studies of the French cinema; its development and relation to world cinema and to literature. Same as CWL 552. May be repeated to a maximum of 12 hours.

FR 559 Sem Romance Ling credit: 4 hours.
Same as ITAL 559, LING 559, PORT 559, RMLG 559, and SPAN 557. See SPAN 557.

FR 563 College Teaching Foreign Langs credit: 2 OR 4 hours.
Theoretical framework for college foreign language curricula; review of research articles and discussion on learner factors and teaching of listening comprehension, speaking, reading, writing, cultural understanding, and literary appreciation. Same as EIL 563, GER 563, ITAL 563, PORT 563, RUSS 563, and SPAN 563.

FR 570 Seminar Old French Literature credit: 4 hours.
Discussion and research on a specialized topic in Old French literature. See Schedule for current topic. Same as MDVL 570. May be repeated. Prerequisite: FR 531 or consent of instructor.

FR 571 Seminar 16thC French Lit credit: 4 hours.
Discussion and research on a specialized topic in sixteenth-century French literature. See Schedule for current topic. May be repeated.

FR 572 Seminar 17thC French Lit credit: 4 hours.
Discussion and research on a specialized topic in seventeenth-century French literature. See Schedule for current topic. May be repeated.

FR 573 Seminar 18thC French Lit credit: 4 hours.
Discussion and research on a specialized topic in eighteenth-century French literature. See Schedule for current topic. May be repeated.

FR 574 Seminar 19thC French Lit credit: 4 hours.
Discussion and research on a specialized topic in nineteenth-century French literature. See Schedule for current topic. May be repeated.

FR 578 Seminar 20thC French Lit credit: 4 hours.
Discussion and research on a specialized topic in twentieth-century French literature. See Schedule for current topic. Same as CWL 578. May be repeated.

FR 579 Seminar in French Literature credit: 4 hours.
Discussion and research on a specialized area in French literature. See Schedule for current topic. May be repeated.

FR 580 Classroom Lang Acquisition credit: 4 hours.
Same as EIL 580, GER 580, ITAL 580, PORT 580, SLS 580, and SPAN 580. See SPAN 580.

FR 584 Theories in SLA credit: 4 hours.
Same as CI 584, EALC 584, EIL 584, EPSY 563, GER 584, ITAL 584, LING 584, PORT 584, SLS 584, and SPAN 584. See SPAN 584.

FR 588 Sem Second Lang Learn credit: 4 hours.
Same as EALC 588, EIL 590, GER 588, ITAL 588, LING 588, PORT 588, SLS 588, and SPAN 588. See SPAN 588.

FR 590 Contemp Crit Methods & Theory credit: 4 hours.
Deals with a particular individual, school, method or problematic in structuralist or post-structuralist thought; normally taught in English, and texts may be read in French or English, if available. Same as CWL 590. May be repeated if topics vary. Prerequisite: An introductory course in criticism or consent of instructor.

FR 591 **Individual Topics**  credit: 1 TO 8 hours.
Prerequisite: Graduate standing with a major or minor in French.

FR 599 **Thesis Research**  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
Food Science and Human Nutrition

Food Science and Human Nutrition
Department Head: Faye Dong
Department Office: 260 Bevier Hall, 905 South Goodwin, Urbana
Phone: 244-4498
www.fshn.uiuc.edu

FSHN 101  Intro Food Science & Nutrition  credit: 3 hours.
Discusses the evolution of the food system to meet the needs and desires of a complex, heterogeneous society. Provides an overview of food in relation to nutrition and health, composition and chemistry, microbiology, safety, processing, preservation, laws and regulations, quality, and the consumer. Enrollment by non-majors is permitted in spring semesters only.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

FSHN 120  Contemporary Nutrition  credit: 3 hours.
Fundamental principles of human nutrition and their application to the selection of adequate diets; current topics of nutritional importance. Prerequisite: CHEM 101 or equivalent.
This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

FSHN 131  Introductory Food Laboratory  credit: 3 hours.
Application of food preparation principles and techniques in the preparation of standard food products; principles of food management and their application in the planning and preparation of meals. Prerequisite: FSHN 101 or concurrent registration.

FSHN 140  Introduction to Hospitality  credit: 3 hours.
Overview of the hospitality industry with emphasis on organizational and operational structures of the major segments of the industry and career opportunities within each. Field trips required.

FSHN 145  Intro Hospitality Management  credit: 3 hours.
Explore the foodservice aspect of the hospitality industry by assisting Hospitality Management seniors in the Bevier Cafe/Spice Box taking either FSHN 441 or FSHN 443. Course covers the planning, production, and service of meals in specialized settings.

FSHN 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
Experimental course on a special topic in food science and human nutrition. Topic may not be repeated except in accordance with the Code. Approved for both letter and S/U grading. May be repeated in the same or subsequent terms. No more than 12 hours may be counted toward graduation.

FSHN 220  Principles of Nutrition  credit: 4 hours.
Course focuses on the nutritive value of foods and metabolism of essential nutrients, as well as the application of principles of nutrition to the requirements of normal individuals throughout the life cycle. Prerequisite: CHEM 102; MCB 103.

FSHN 260  Raw Materials for Processing  credit: 4 hours.
Problems involved with procurement, harvesting, handling, and storage of fruits, vegetables, cereal grains, dairy products, red meat, poultry, fish, and eggs for the food-processing industry. Field trips to specialized operations. Prerequisite: One high school course in biological science and FSHN 101.

FSHN 274  NonMajors Food Microbiology  credit: 1 hours.
Introduction to food plant sanitation and the role of microorganisms in food manufacture. Students may not receive credit for both FSHN 101 and FSHN 274. Prerequisite: Sophomore standing or higher.

FSHN 293  Off Campus Internship  credit: 2 TO 4 hours.
Supervised, off-campus experience in a field directly pertaining to the subject matter. Approved for both letter and S/U grading. May be repeated to a maximum of 10 hours.

FSHN 294  On Campus Internship  credit: 1 TO 4 hours.
Supervised, on-campus, learning experience with faculty engaged in research. Approved for both letter and S/U grading. May be repeated in the same or subsequent terms to a maximum of 10 hours. Prerequisite: Sophomore standing, 2.0 GPA, consent of the advisor, and consent of the Department Teaching Coordinator.
FSHN 295  **UG Research or Thesis**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward degree. Prerequisites: Cumulative GPA of 2.5 or above at the time the activity is arranged and consent of instructor.

FSHN 302  **Sensory Evaluation of Foods**  credit: 3 hours.
The physiology, psychology, and chemistry of flavor and flavor perception; tactual, visual, and auditory components affecting food acceptability; principles and application of preference and discrimination testing; and interpretation of panel evaluation data.

FSHN 304  **Introduction to Wine Science**  credit: 2 hours.
Topics include wine sensory analysis, grape cultivars and their wines, wine processing, viticulture basics, world wine regions, and wine and food pairing.

FSHN 322  **Nutrition and the Life Cycle**  credit: 3 hours.
Examines physiological changes that occur during gestation, postnatal growth, and aging and the influence of these changes on nutritional requirements. Prerequisite: FSHN 220 or consent of instructor.

FSHN 329  **Communication in Nutrition**  credit: 3 hours.
Application and integration of the principles of nutrition and their transmission to groups and individuals. Students will learn individual counseling techniques as well as how to present nutrition information to groups. Open to Dietetics and Human Nutrition juniors and seniors only. Prerequisite: FSHN 220 or equivalent.

FSHN 332  **Science of Food Systems**  credit: 3 hours.
Application of chemical principles and physical behavior of ingredients in food systems and the effects processing and storage have on finished food products. Prerequisite: CHEM 102 and 103 or equivalent; CHEM 104 and 105 or equivalent; FSHN 131.

FSHN 340  **Food Production and Service**  credit: 4 hours.
Introduction to the management of commercial and noncommerical foodservice systems through the operation of Bevier Cafe. Students experience managing the procurement, production and service of food, as well as the sanitation and maintenance of equipment and facilities. Prerequisite: FSHN 332, credit or concurrent registration in FSHN 349 and FSHN 345.

FSHN 345  **Hospitality Purchasing**  credit: 3 hours.
Introduction to the principles and procedures for the purchasing, selection and procurement of food and non-food items in the hospitality industry. Field Trips. Prerequisite: FSHN 131 or consent of instructor.

FSHN 349  **Food Service Sanitation**  credit: 1 hours.
Examines the dangers, costs and prevention of foodborne illness as well as the training and motivation of food service employees in sanitary food handling and quality assurance practices. Upon completion of this course, student will be eligible to apply for the food service sanitation certificate issued by the State of Illinois. Prerequisites: FSHN 101 and FSHN 131, MCB 100 and MCB 101, or consent of instructor.

FSHN 396  **UG Honors Research or Thesis**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the direction of the Honors advisor. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward degree. Prerequisite: Junior standing, admission to the ACES Honors Program, and consent of instructor.

FSHN 398  **Undergraduate Seminar**  credit: 1 TO 3 hours.
Group discussion on a special topic in a field of study directly pertaining to subject matter in food science and human nutrition. Approved for both letter and S/U grading. May be repeated in the same or subsequent terms to a maximum of 12 hours. Prerequisite: Sophomore standing.

FSHN 414  **Food Chemistry**  credit: 3 hours.
Examines the chemical aspects of major food components; water, carbohydrates, proteins, and lipids; properties of pigments, salts, and food dispersions. Undergraduate Food Science majors must enroll concurrently in FSHN 416. Prerequisite: CHEM 232 and CHEM 233.

FSHN 416  **Food Chemistry Laboratory**  credit: 2 hours.
Chemical and physical properties of water, proteins, lipids, carbohydrates, and other food components/additives are discovered in the context of their interactions and functional roles in foods. Prerequisite: CHEM 232 and CHEM 233 and concurrent enrollment in FSHN 414.

FSHN 418  **Food Analysis**  credit: 4 hours.
Principles and application of the chemical, physical, and instrumental methods used to determine the constituents of foods; special considerations applicable to the analysis of certain foods. Lecture and lab. Prerequisite: CHEM 232; FSHN 414; FSHN 416 or consent of instructor.

FSHN 420  **Nutritional Aspects of Disease**  credit: 3 hours.
Examines nutritional, biochemical, and physiological aspects of disease processes and studies the role of nutrition in prevention, management, and treatment of disease. Same as NUTR 420. Prerequisite: FSHN 220 or comparable course with a physiology prerequisite; MCB 450 or equivalent.

FSHN 421  **Pediatric Clinical Nutrition**  credit: 2 hours.
Examines physiological, biochemical and nutritional aspects of disease processes relevant to infants, children and adolescents. Topics covered include prematurity, developmental disabilities, inborn errors of metabolism, food allergy, obesity and eating disorders. The role of nutrition in prevention, management and treatment of disease is also covered. Prerequisite: FSHN 420; FSHN 322 is highly recommended.

FSHN 423  **Advances in Foods & Nutrition**  credit: 2 hours.
New developments in foods and nutrition; readings, lectures, and discussions. Prerequisite: FSHN 220 and FSHN 332, or equivalent.

FSHN 425  **Food Marketing**  credit: 3 hours.
Same as ACE 430. See ACE 430.

FSHN 426  **Biochemical Nutrition I**  credit: 3 hours.
The dietary and hormonal regulation of carbohydrate, lipid and amino acid metabolism. Emphasizes the regulation of enzyme activity and the different roles the major organs have in whole animal energy balance. Same as NUTR 426. Prerequisite: FSHN 220, or FSHN 120 and FSHN 414, and MCB 450 or concurrent enrollment.

FSHN 427  **Biochemical Nutrition II**  credit: 3 hours.
Biochemistry and metabolism of the water and fat soluble vitamins, and the biochemical role of minerals in animal biology. Emphasizes the digestion, transport, metabolism and intercellular function of these nutrients and how nutrient/food intake and physiological state affect these processes. Same as NUTR 427. Prerequisite: FSHN 426.

FSHN 428  **Community Nutrition**  credit: 3 hours.
Application and integration of the principles of nutrition and their delivery in the context of social, political, and economic environments in local, national, and international settings. Offered in alternate fall semesters (even years). Same as NUTR 428. Prerequisite: FSHN 220 or equivalent, one introductory statistics course, and one course in the social or behavioral sciences.

FSHN 429  **Nutrition Assessment & Therapy**  credit: 3 hours.
Application of the principles of normal and therapeutic nutrition, nutrition assessment, nutrition intervention and evaluation as related to the management and treatment of disease states. Laboratories will allow for the development of skills in each of these areas. This course is the clinical capstone course for the dietetics curriculum. Prerequisite: FSHN 320 and MCB 350, or concurrent enrollment.

FSHN 440  **Applied Statistical Methods I**  credit: 4 hours.
Same as ABE 440, ANSC 440, CPSC 440, and NRES 440. See CPSC 440.

FSHN 442  **HM Skills and Applications**  credit: 3 hours.
Application of behavioral science and management techniques, methods and strategies to the hospitality industry. Applied management techniques will focus on those managerial behaviors needed to develop and maintain positive and productive relationships with subordinates, peers, supervisors and individuals external to the hospitality organization. 3 undergraduate hours. Prerequisite: FSHN 340 and FSHN 441, or consent of instructor.

FSHN 443  **Management of Fine Dining**  credit: 4 hours.
Advanced application of food production and management principles to specific food service demands; emphasis on artistry in preparation, serving, and merchandising high quality food in quantity. 4 undergraduate hours. Prerequisite: FSHN 340 and FSHN 441, and credit or concurrent registration in FSHN 442.

FSHN 460  **Food Processing Engineering**  credit: 3 hours.
Examines application of process engineering principles to the conversion of raw agricultural materials into finished food products. Topics include basics of engineering analysis, units and dimensions, materials balances, energy balances, thermodynamics, heat transfer, psychrometry, refrigeration and mechanical separations. Prerequisite: PHYS 101 and MATH 120; or consent of instructor.

FSHN 461  **Food Processing I**  credit: 3 hours.
Principles, unit operations, and applications of food preservation and processing by high temperature, refrigeration, and freezing processes; includes heat transfer, kinetics, chemical and microbial changes in food as a result of processing; lecture and laboratory. Prerequisite: FSHN 418 and FSHN 460; and FSHN 414 or equivalent; FSHN 260 is recommended.

FSHN 462  Food Processing II  credit: 3 hours.
Principles and applications of food preservation and processing technologies including evaporation, dehydration, freeze-concentration, membrane processing, extrusion and water activity control; lectures, laboratories, and field trips. Prerequisite: FSHN 461 or consent of instructor.

FSHN 465  Principles of Food Technology  credit: 3 hours.
Overview of processing techniques in the food industry, including thermo-processing, refrigeration, freezing, moisture removal, moisture control nonthermal processing, and intermediate moisture food formulation. Lecture and field trips. FSHN 465 is not offered to undergraduate food science majors or graduate students specializing in food processing/engineering. Students may not receive credit for both FSHN 465 and the FSHN 461- FSHN 462 sequence. Prerequisite: FSHN 332 or food chemistry equivalent, or consent of instructor.

FSHN 466  Food Product Development  credit: 3 hours.
Principles of food product development: target market evaluation, concept development and presentation, formulation, manufacturing, packaging, product costs, pricing, safety, and marketing. May include a product in accordance with Institute of Food Technologists national competition guidelines. Products will be unveiled and presented for faculty evaluation. This capstone course is limited to seniors in the Food Science or Foods Industry and Business options in FSHN. Graduate students will be allowed to register pending sufficient space in the class. May be repeated to a maximum of 6 hours. Prerequisite: FSHN 332 or FSHN 414; FSHN 471 or FSHN 472; concurrent registration or completion of FSHN 461 and FSHN 462, or FSHN 465.

FSHN 469  Package Engineering  credit: 3 hours.
Cross-disciplinary study of the materials, machinery, research, design, techniques, environmental considerations, ethics and economics used in the global packaging industry with emphasis on the implementation of improved technologies for the problems unique to food packaging. An emphasis on the broad, systems-based nature of packaging will be maintained throughout the course. Same as ABE 482. Prerequisite: MATH 120; one each of 100-level Chemistry and Physics courses or their equivalent; junior-senior standing or higher, or consent of instructor.

FSHN 471  Food & Industrial Microbiology  credit: 3 hours.
Relationship of microorganisms to food manufacture and preservation, to industrial fermentation and processing, and to sanitation. Same as MCB 434. Prerequisite: MCB 101 or MCB 301 or equivalent; credit or concurrent registration in organic chemistry laboratory.

FSHN 472  Sanitation in Food Processing  credit: 2 hours.
Studies the principles of sanitation with emphasis on practical considerations as they apply to various food-processing industries; control of insects, rodents, and microorganisms; fundamentals of detergency; sanitation of water supplies; waste disposal methods; and government and public health regulations. Prerequisite: CHEM 104 and MCB 101.

FSHN 480  Basic Toxicology  credit: 3 hours.
Emphasizes the physiology, biochemistry and pharmacokinetics of absorption, distribution, metabolism and excretion of toxic compounds, drugs, non-nutrient dietary supplements and other compounds foreign to the body. An introduction to the process of cancer, how foreign compounds can initiate, enhance or prevent the process is also included. Same as CPSC 433, ENVS 480, and VB 449. Prerequisite: MCB 350 or MCB 406, or consent of instructor.

FSHN 499  Cur Topics in FS & Human Nutr  credit: 0 TO 3 hours.
Group discussion or an experimental course on a special topic in food science and human nutrition. 1 to 3 undergraduate hours. May be repeated in the same or subsequent terms to a maximum of 12 hours as topics vary.

FSHN 510  Topics in Nutrition Research  credit: 1 hours.
Same as ANSC 525 and NUTR 510. See NUTR 510.

FSHN 511  Regulation of Metabolism  credit: 4 hours.
Same as ANSC 521 and NUTR 511. See NUTR 511.

FSHN 512  Physical Chemistry of Food  credit: 4 hours.
Studies physicochemical processes in foods during food processing; places special emphasis on methodological and experimental aspects of food processes, such as water activity, rheology of foods, food extrusion, protein hydration, gelatin, aggregation, and food process analyses. Prerequisite: FSHN 414 or MCB 350.

FSHN 517  Fermented &Distilled Beverages  credit: 2 hours.
The production technology, microbiology and chemistry (including the compositional chemistry, flavor chemistry, and chemistry of aging) of fermented and distilled beverages. Prerequisite: Graduate student status, or a food microbiology course and a food chemistry or biochemistry course.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>FSHN 518</td>
<td>Chemistry of Lipids in Foods</td>
<td>3 hours</td>
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<td>Detailed examination of the chemical and physical properties of lipids in foods. Prerequisite: A food chemistry or biochemistry course is highly recommended.</td>
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<tr>
<td>FSHN 520</td>
<td>Advanced Clinical Nutrition</td>
<td>2 hours</td>
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<td>Same as NUTR 561. See NUTR 561.</td>
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<tr>
<td>FSHN 560</td>
<td>Membrane Separations Tech</td>
<td>2 hours</td>
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<td>Examines theory and applications of synthetic semipermeable membranes in reverse osmosis, ultrafiltration, microfiltration, and electrodialysis processes; thermodynamics of bioseparations, membrane chemistry and properties, process engineering, equipment design, fouling of membranes, selected applications. Prerequisite: FSHN 460 or consent of instructor.</td>
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<tr>
<td>FSHN 573</td>
<td>Advanced Food Microbiology</td>
<td>3 hours</td>
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<td>Detailed examination of food and industrial processes dependent on fermentation and other microbial activities. Prerequisite: Organic chemistry, calculus, and MCB 434.</td>
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<tr>
<td>FSHN 575</td>
<td>Issues in Food Safety</td>
<td>3 hours</td>
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<td>Current issues affecting the safety of the food supply including emerging pathogens, food additives and pesticides, genetically modified organisms and new technologies will be evaluated in the context of current scientific knowledge, United States food law, and consumer opinions. Prerequisite: Graduate level status or consent of instructor.</td>
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<tr>
<td>FSHN 590</td>
<td>Dietetic Internship I</td>
<td>5 hours</td>
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<td>Supervised learning experience in a variety of settings and locations related to clinical nutrition, community nutrition, and food service management within Urbana/Champaign and surrounding areas. Approved for both letter and S/U grading. Prerequisite: Enrollment in dietetic internship program.</td>
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<tr>
<td>FSHN 591</td>
<td>Dietetic Internship II</td>
<td>5 hours</td>
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<td></td>
<td>Supervised learning experience in a variety of settings and locations related to clinical nutrition, community nutrition and health promotion, and food service management within Urbana/Champaign and surrounding areas. Approved for both letter and S/U grading. Prerequisite: FSHN 590.</td>
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<tr>
<td>FSHN 592</td>
<td>Graduate Internship Experience</td>
<td>0 TO 12 hours</td>
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<td>Supervised, off-campus experience in a field related to a students' option/concentration. May be repeated in separate terms to a maximum of 12 hours.</td>
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<tr>
<td>FSHN 593</td>
<td>Seminar in Foods</td>
<td>2 hours</td>
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<td>Discusses and evaluates current literature related to specialized topics in foods. Prerequisite: Undergraduate degree in foods, nutrition, or comparable background in chemistry, microbiology, physiology, or other biological science; consent of instructor.</td>
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<tr>
<td>FSHN 595</td>
<td>Food Science Advanced Topics</td>
<td>1 TO 4 hours</td>
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<td>Studies of selected topics in Food Science. Study may be on specialized topics in any one of the following fields: food chemistry, food microbiology, nutrition, food processing/engineering. Lectures and/or laboratory. May be repeated if topics vary. Students may register only once for a given topic. Prerequisite: Graduate level status or consent of instructor.</td>
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<tr>
<td>FSHN 596</td>
<td>Seminar in Nutrition</td>
<td>2 hours</td>
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<td>Discusses and evaluates current literature related to topics in nutrition. Prerequisite: Undergraduate degree in foods, nutrition, or comparable undergraduate degree in biochemistry, microbiology, physiology, or other biological science; consent of instructor.</td>
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<tr>
<td>FSHN 597</td>
<td>Seminar in Food Science</td>
<td>0 TO 1 hours</td>
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<td>Discussions on specialized research topics and current literature relating to food science and technology. Required of all graduate students in food science. Approved for both letter and S/U grading.</td>
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<tr>
<td>FSHN 598</td>
<td>Advanced Special Problems</td>
<td>1 TO 8 hours</td>
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<td>Supervised individual study on advanced special problems in food science and human nutrition. Approved for both letter and S/U grading. May be repeated in the same or subsequent semesters. Summer session, 1 to 4 graduate hours. Prerequisite: Written consent of instructor must be obtained prior to enrollment.</td>
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<tr>
<td>FSHN 599</td>
<td>Thesis Research</td>
<td>0 TO 16 hours</td>
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<td>Original research designed and conducted under graduate faculty supervisor. Approved for S/U grading only. May be repeated.</td>
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Graduate College

Dean of College: Debasish Dutta
College Office: 204 Coble Hall, 801 South Wright Street, Champaign
Phone: 333-0035
www.grad.uiuc.edu

GC 498  **Graduate Domestic Study Away**  credit: 0 TO 12 hours.
Provides campus credit for study at accredited domestics institutions outside the CIC. 0 to 12 graduate hours. Approved for both letter and S/U grading. May be repeated to a maximum of 12 graduate hours in separate terms. Credit received will depend on transfer approved from visited institution. Prerequisite: Registration will be controlled by Graduate Records.

GC 499  **Graduate College Study Abroad**  credit: 0 TO 18 hours.
Provides campus credit for study at accredited foreign institutions or approved overseas programs. Final determination of credit granted is made after the student's successful completion of work. Credit will not count toward residence requirements. 0 to 16 hours fall and spring semesters. 0 to 12 hours summer term. Approved for both letter and S/U grading. Prerequisite: Full academic standing in the Graduate College and consent of major department and Graduate College.

GC 599  **Thesis Research**  credit: 0 hours.
For doctoral students who have a guaranteed student loan that needs deferral, have completed the credit requirements for the doctorate, have passed the preliminary examination, do not have any financial assistance that would cover tuition and fees, and are eligible to register for 599 in their own academic units. Approved for S/U grading only. May be repeated.
General Engineering

Industrial and Enterprise Systems Engineering
Head of Department: Jong-Shi Pang
Department Office: 117 Transportation Building, 104 South Mathews, Urbana
Phone: 244-5703
www.iese.uiuc.edu

GE 100 Intro to General Engineering  credit: 1 hours.
Introduces the engineering profession and the curriculum in General Engineering. Laboratory activities introduce technical and business-related issues in engineering. Project emphasis is placed on creativity in the design process.

GE 101 Engineering Graphics & Design  credit: 3 hours.
Use of computer-aided design (CAD) software to model parts and assemblies. Use of parametric and non-parametric solids, surface and wireframe models. Part editing, two-dimensional documentation of models. Planar projection theory, including sketching of perspective, isometric, multiview, auxiliary, and section views. Spatial visualization exercises. Dimensioning guidelines, tolerancing techniques. Team design project. Credit is not given for both GE 101 and ME 170.

GE 161 Business Side of Engineering  credit: 1 hours.
Introduces the important elements and metrics of business and product development/management: customers; profits; prices; Boothroyd/Dewhurst Design for Assembly; intellectual property; product and business planning; time value of money; Failure Mode and Effect Analysis; team building. Student teams are formed to develop the concept and business plan for a new product of their own choosing.

GE 199 Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

GE 297 Independent Study  credit: 1 TO 4 hours.
Individual investigations of any phase of General Engineering selected by the students and approved by the department. May be repeated. Prerequisite: Consent of instructor.

GE 298 Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in general engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 9 hours.

GE 310 General Engineering Design  credit: 3 hours.
Fundamental concepts in the classical and computer-based analysis and design of structural and machine components and assemblies. External loads, internal forces, and displacements in statically determinate and indeterminate configurations: kinematics of linkages, gears, and cams; static forces in machines. Prerequisite: CS 101, MATH 225, TAM 212, and TAM 251.

GE 311 Engineering Design Analysis  credit: 3 hours.
Stress/strain conditions; analytical and numerical (CAD) solution techniques; analysis of various engineering materials and configurations as applied to the development and application of design analysis criteria. Prerequisite: GE 310; concurrent registration in GE 312.

GE 312 Instrumentation and Test Lab  credit: 1 hours.
Preparation for experimental projects; introduction to mechanical and electrical instruments; mechanical testing of materials; introduction to experimental stress analysis and photoelastic methods. Prerequisite: GE 310; concurrent registration in GE 311.

GE 320 Control Systems  credit: 4 hours.
Introduction to control systems and control systems technology. Sensors, actuators, modeling of physical systems, design and implementation of feedback controllers. Operational techniques used in describing, analyzing and designing linear continuous systems; Laplace transforms; response via transfer functions; stability; performance specifications; controller design via transfer functions; frequency response; simple nonlinearities. Credit is not given for both GE 320 and either AE 353 or ME 340. Prerequisite: CS 101, MATH 285, and TAM 212; credit or concurrent registration in ECE 211.

GE 330 OR Methods for Profit & Value  credit: 3 hours.
Introduction to an operations-research approach to engineering decision making: economic analysis of alternatives; linear, integer, basic nonlinear, and dynamic programming with specific application to engineering problems in profit and value; decision theory. Credit is not given for both GE 330 and either IE 310 or CEE 201. Prerequisite: CS 101, GE 161, MATH 225, and MATH 231.

**GE 331  Analytical Methods for Uncertainty** credit: 3 hours.

Basic concepts underlying important applications of probability and statistics to the analysis of data in the context of engineering design and decision making; point and interval estimation and hypothesis testing for sampled data; categorical data analysis and goodness of fit; linear models, including multivariate regression and analysis of designed experiments; quality methods including sampling, control charts, and process specification. Credit is not given for both GE 331 and either IE 300 or CEE 202. Prerequisite: CS 101, GE 161, MATH 225, and MATH 231.

**GE 361  Emotional Intelligence Skills** credit: 3 hours.

Understanding emotions in ourselves and others. Assessing and improving interpersonal skills and emotional intelligence competencies including self-regulation, motivation, empathetic listening, communication, influence collaboration and cooperation, conflict management, leadership, teamwork, and managing change. One Saturday laboratory session is required.

**GE 390  General Engineering Seminar** credit: 0 hours.

A series of lectures and discussions by department faculty and visiting professional engineers on ethics, professional registration, the role of technical societies, and the relation of engineering to such disciplines as economics, sociology, and government. Approved for S/U grading only.

**GE 397  Independent Study** credit: 1 TO 4 hours.

Individual investigations or studies of any phase of General Engineering selected by the students and approved by the department. May be repeated in same term. Prerequisite: Consent of instructor.

**GE 398  Special Topics** credit: 1 TO 4 hours.

Subject offerings of new and developing areas of knowledge in general engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 9 hours.

**GE 400  Engineering Law** credit: 3 hours.

Nature and development of the legal system; legal rights and duties important to engineers in their professions; contracts, uniform commercial code and sales of goods, torts, agency, worker's compensation, labor law, property, environmental law, intellectual property. 3 undergraduate hours. No graduate credit. Counts toward campus Advanced Composition general education requirement. Prerequisite: RHET 105.

This course satisfies the General Education Criteria for a:

UIUC: Advanced Composition

**GE 402  Comp-Aided Product Realization** credit: 3 hours.

Computer-aided design, analysis, and prototyping tools used in the product development process. Principles of computer graphics and geometric modeling, including transformations, coordinate systems, parametric solid modeling, spline curves, and surface modeling. Finite element and kinematics analysis. Rapid prototyping, product dissection, CAD/CAM/CAE operability issues, and CAD collaboration tools. Prerequisite: GE 101 and GE 311.

**GE 410  Component Design** credit: 3 hours.

Design of basic engineering components: structural members, machine parts, and connections. Principles applied include: material failure (yield, fracture, fatigue); buckling and other instabilities; design reliability; analytical simulation. 3 undergraduate hours. No graduate credit. Prerequisite: GE 311 and GE 320.

**GE 411  Reliability Engineering** credit: 3 OR 4 hours.

Introduction to concepts in engineering design, testing, and management for highly reliable components and systems. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: GE 331 or IE 300.

**GE 412  Nondestructive Evaluation** credit: 3 OR 4 hours.

Introduces the concept of Nondestructive Evaluation (NDE), and provides a review of probability, the role of NDE in Design, and the role of NDE in manufacturing and in maintenance. The primary Nondestructive Testing and Evaluation (NDT&E) techniques, including visual methods, ultrasonic methods, acoustic emission, acousto-ultrasonics, radiological methods, electro-magnetic testing, eddy currents, penetrant methods, thermal methods, and holography, are introduced from the fundamental laws of physics. Includes industrial applications of these techniques towards flaw detection, material properties characterization, impact and fatigue damage evaluation, adhesion, etc. Current literature is examined. Prerequisite: CEE 300.

**GE 413  Engineering Design Optimization** credit: 3 hours.
Application of optimization techniques to engineering design problems. Emphasis is placed on problem formulation primarily in structural and mechanical engineering applications. Important theoretical results and numerical optimization methods are covered. Matlab programming assignments develop software for solving nonlinear mathematical programming problems. Prerequisite: GE 330 and GE 310.

**GE 420  Digital Control Systems**  credit: 4 hours.
Examines theory and techniques for control of dynamic processes by digital computer; linear discrete systems, digital filters, sampling signal reconstruction, digital design, state space methods, computers, state estimator, laboratory techniques. Prerequisite: GE 320.

**GE 421  Introduction to Robotics**  credit: 4 hours.
Same as CS 443, ECE 470, and ME 445. See ECE 470.

**GE 422  Robot Dynamics and Control**  credit: 4 hours.
Fundamental concepts and analytical methods for analysis and design of robot systems. Laboratory experiments complement the theoretical development. Same as ECE 489 and ME 446. Prerequisite: GE 320. Recommended: ECE 470.

**GE 423  Mechatronics**  credit: 3 hours.
Concepts and practice of mechatronics: computer interfacing of physical devices (sensors, actuators); data acquisition; real time programming and real time control; human-machine interfaces; design principles of mechatronics in manufacturing systems and in consumer systems. Same as MFG 430. Prerequisite: GE 320.

**GE 424  State Space Design for Control**  credit: 3 hours.
Design methods; time domain modeling; trajectories and phase plane analysis; similarity transforms; controllability and observability; pole placement and observers; linear quadratic optimal control; Lyapunov stability and describing functions; simulation. Prerequisite: GE 320 and MATH 225.

**GE 431  Syst & Entrepreneurial Engrg**  credit: 4 hours.
A holistic perspective for the development of complex engineered systems and products, including design, analysis, and management. marketing research, product development, integrated system/subsystem/component design, production planning, manufacturing strategy, supply chain management, innovation, and entrepreneurship. Prerequisite: GE 330 and GE 331.

**GE 450  Decision Analysis I**  credit: 3 OR 4 hours.
Examines rules of thought that transform complex decision situations into simpler ones where the course of action is clear. Practical application of decision analysis in large organizations; methods to generate insights into real-life decision problems, avoid the common pitfalls in decision processes, and overcome the possible barriers to implementing a high-quality decision-making process for individual and organizational decision making; graphical representations of decision problems such as decision diagrams and utility diagrams. Prerequisite: GE 311 or IE 300.

**GE 461  Technology Entrepreneurship**  credit: 3 hours.
Critical factors affecting technology-based ventures: opportunity assessment; the entrepreneurial process; founders and team building; preparation of a business plan including market research, marketing and sales, finance, and manufacturing considerations. Same as TE 461. Prerequisite: MATH 231.

**GE 494  Senior Engineering Project I**  credit: 3 hours.
Design of various engineering devices and systems. Teams of two to four students work toward the development of engineering solutions to problems supplied by industry. A midterm and final oral report summarize the work of the term for sponsor and faculty. Student team members receive an identical grade. 3 undergraduate hours. No graduate credit. Prerequisite: GE 311, GE 330, GE 331, and GE 424; credit or concurrent registration in one of GE 410, GE 413, GE 420, GE 423; concurrent registration in GE 495. Must enroll concurrently in GE 495.

**GE 495  Senior Engineering Project II**  credit: 2 hours.
Design of various engineering devices and systems. Teams of two to four students work toward the development of engineering solutions to problems supplied by industry. A midterm and final report summarize the work of the term for sponsor and faculty. Student team members may receive different grades. 2 undergraduate hours. No graduate credit. Prerequisite: Concurrent enrollment in GE 494. Must enroll concurrently in GE 494.

**GE 497  Independent Study**  credit: 1 TO 4 hours.
Advanced problems related to General Engineering. May be repeated in same term. Prerequisite: Consent of instructor.

**GE 498  Special Topics**  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in general engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 9 undergraduate hours or 12 graduate hours.

GE 520  **Analysis of Nonlinear Systems**  credit: 4 hours.
Same as ECE 528 and ME 546. See ECE 528.

GE 521  **Multivariable Control Design**  credit: 4 hours.
Same as AE 555. See AE 555.

GE 522  **Robot Control Theory**  credit: 4 hours.
Dynamics of rigid and flexible robots; geometric methods of control; feedback linearization; robust and adaptive control; Lyapunov design methods; singular perturbation and integral manifold methods; passivity and network approaches; force control; control of multiple and redundant robots; teleoperation. Same as ECE 589. Prerequisite: GE 540.

GE 523  **Discrete Event Dynamic Systems**  credit: 3 OR 4 hours.
Introduction to modeling, analysis, control, and performance evaluation of discrete event dynamic systems (DEDS), characterized by state changes only at discrete points in time in response to the occurrence of particular events and which therefore may have logical or symbolic values rather than numerical ones. Discrete-state/discrete/event models decidability, computational issues, forbidden-state problems, forbidden-string problems, enforcing safety and liveness properties via supervision, generalized semi-Markov processes, sensitivity analysis via likelihood ratio and infinitesimal perturbation methods. Prerequisite: CS 173 or MATH 213; CS 225; MATH 415; MATH 461.

GE 524  **Data-Based Systems Modeling**  credit: 4 hours.
Identification and building of mathematical and computational models directly from data. An overview of systems and model types, such as state-space models and distributed parameter model; parametric estimation methods, such as regression and least-squares methods; recent subspace identification methods; data preprocessing techniques; model validation methods. Applications to a wide range of dynamical systems, including biological systems, electro-mechanical systems, economic systems are reflected in assignments. Prerequisite: GE 331 and GE 424.

GE 525  **Control of Complex Systems**  credit: 4 hours.
Introduction to a variety of control methodologies for complex, i.e., interconnected dynamic systems. A unified framework based on the vector Liapunov functions concept is used to introduce and study the following methodologies: decentralized overlapping control; optimal control of interconnected systems; multi-player differential game theory; decentralized optimization and its link with the multi-criteria optimization. Illustrative examples are considered in areas such as control of groups of unmanned vehicles, control of power systems, and coverage control. Prerequisite: GE 424.

GE 530  **Multiatribute Decision Making**  credit: 4 hours.
Provides the background and practice in applying tools for subjective multiple attribute decision making when present or future states of nature are uncertain. Includes exploration of current research in developing computer aids to decision making. Discusses issues in descriptive versus normative approaches in the context of the interface between operations research and artificial intelligence. Covers multiatribute utility analysis from theoretical foundations through assessment procedures, practice, and pitfalls of potential cognitive bases. Same as CEE 536. Prerequisite: GE 331 or CEE 202.

GE 531  **Genetic Algorithm Methods**  credit: 4 hours.
Presents genetic algorithms search procedures that are based on the mechanics of natural genetics and natural selection and are finding increased application to the difficult problems of engineering, science, and commerce. Surveys what genetic algorithms are, where they come from, how they work, and how and where they have been applied. Prerequisite: CS 101 and MATH 241.

GE 540  **Simulation of Dynamic Systems**  credit: 4 hours.
Modeling and simulation of dynamic engineering systems; distinct modeling approaches for engineering devices; analog and digital computer simulation of dynamic systems; design criteria and performance and design measures. Case studies and projects are used extensively. Prerequisite: GE 320 and IE 485.

GE 550  **Decision Analysis II**  credit: 3 OR 4 hours.
Continuation of GE 450. Fundamental requirements of a decision-making system; comparison of different decision-making methods, "paradoxes" in decision making; foundations and history of probability as a degree of belief; Bayesian vs. classical statistics; the entropy of a random variable; experimentation and optimal stopping; invariance formulations in utility and probability; one-switch preferences, and graph-based methods to incorporate dependence in multiatribute utility functions. Intended for those interested in pursuing research in decision analysis or wanting to deepen understanding of the foundations of the subject. Prerequisite: GE 450.

GE 560  **Managing Advanced Technol I**  credit: 1 hours.
Focuses on the business side of managing advanced technology in industry: strategic context of advanced technology; analytical financial tools used to estimate the potential value of advanced technology; legal concepts important in managing advanced technology; interpersonal issues related to leading, and advocating on behalf of advanced technology groups. Same as TE 560.

GE 561 Managing Advanced Technol II  credit: 1 hours.
Continuation of GE 560. Deepens insights previously gained by the use of case studies in the strategic contexts of: advanced technology; analytical financial tools used to estimate the potential value of advanced technology; legal concepts important to managing advanced technology; interpersonal issues related to leading, and advocating on behalf of, advanced technology groups. Same as TE 561. Prerequisite: GE 560.

GE 590 Seminar  credit: 0 hours.
Presentations by graduate students, staff, and guest lecturers of current topics in research and development in General Engineering. Approved for S/U grading only. Required of all graduate students each term.

GE 594 Project Design  credit: 1 TO 8 hours.
Engineering design projects emphasizing advanced engineering analysis, synthesis, optimization, and engineering economics. May be repeated to a maximum of 8 hours for credit toward the Master's degree.

GE 597 Independent Study  credit: 1 TO 4 hours.
Advanced problems related to General Engineering. May be repeated. Prerequisite: Consent of instructor.

GE 598 Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in general engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 12 hours.

GE 599 Thesis Research  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated to a maximum of 16 hours for credit toward the Master's degree.
GEOG 101  **Geog of Developing Countries**  credit: 3 hours.
Examines the manner in which environmental and cultural factors promote and inhibit change in developing countries (i.e., India, Iran, Egypt, Nigeria, China, Kenya, Brazil, Venezuela, Guatemala); makes comparisons between these countries and others in both the developing and the developed world.
This course satisfies the General Education Criteria for a:  
UIUC: Non-Western Cultures  
UIUC Social Sciences

GEOG 103  **Earth’s Physical Systems**  credit: 4 hours.
Systems approach to the physical environment, including landforms, soils, and vegetation, from a human ecological perspective. Same as ESES 103.
This course satisfies the General Education Criteria for a:  
UIUC: Physical Sciences

GEOG 104  **Social and Cultural Geography**  credit: 4 hours.
Introduces the basic concepts of social and cultural geography, and the application of these concepts to a variety of topics; mental maps, territoriality, cultural regions, cultural elements and their diffusion, population movement and migration, settlement patterns, environmental hazards, and spatial patterns of social problems.
This course satisfies the General Education Criteria for a:  
UIUC Social Sciences

GEOG 106  **Geographies of Globalization**  credit: 3 hours.
A survey of major world regions by systematically considering five themes: environment, population and settlement patterns, cultural coherence and diversity, geopolitical fragmentation and unity, and economic and social development. While examining the persistence of unique regions, the course will both scale up to global linkages and scale down to place-specific impacts of globalization processes. Same as ESES 106. This course can be used to fulfill either Western or Nonwestern general education categories, but not both.
This course satisfies the General Education Criteria for a:  
UIUC: Non-Western Cultures  
UIUC Social Sciences  
UIUC: Western Compartv Cult

GEOG 110  **Geography of Intl Conflicts**  credit: 3 hours.
Focuses on contemporary cultural conflicts, competition among nations for economic and mineral resources; treats territorial disputes from a cultural and geographic perspective. Case studies vary to illustrate types of contemporary conflicts. Same as GLBL 110.
This course satisfies the General Education Criteria for a:  
UIUC Social Sciences

GEOG 198  **Freshman Honors Seminar**  credit: 3 hours.
Through discussions and research projects, the seminar is designed to provide an in-depth understanding of topics in the field of systematic or regional geography which are selected for group study. Appropriate geographic methodology is emphasized. Prerequisite: James Scholar standing or other designation as a superior student.

GEOG 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

GEOG 204  **Cities of the World**  credit: 3 hours.
Introduces the form and function of cities around the world; emphasizes cross-cultural comparisons of urban landscapes and living environments as illustrated by case studies of specific cities.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

GEOG 205  Business Location Decisions  credit: 3 hours.
Analyzes location decision-making emphasizing industrial and commercial location patterns; identifies important institutional factors and their changing roles over the recent past; and focuses on plant closings, economic disruptions, and problems of structural change. Same as BADM 205. Prerequisite: ECON 102 or ECON 103, or equivalent.

GEOG 210  Contemp Social & Env Problems  credit: 3 hours.
Geographic perspectives on contemporary national and international problems. Topics vary each term and include such themes as environmental quality, food production, urban problems, and particular social and political conflicts. Same as ESES 210.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

GEOG 214  Conserv Natural Resources  credit: 3 hours.
Survey of distribution of natural resources and major forms of utilization of these resources; emphasizes consequences of utilization systems which deplete or degrade resources and systems which conserve these resources with respect to future needs of human populations.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

GEOG 222  Big Rivers of the World  credit: 3 hours.
An interdisciplinary approach to the study of big rivers, encompassing geomorphology, engineering, ecology, risk assessment and planning. Commencing with an assessment of the nature of big rivers; their hydrology and geomorphic setting; hazards associated with large rivers, and issues of river impoundment and management, then proceed to examine the geography, geomorphology, and ecology and management of a range of the World's greatest rivers, focusing on how a geomorphological understanding of such large rivers can aid study of riverine ecohabitats and inform decisions regarding water usage and engineering management. If the weather permits, a one day field-trip will be organized in the second half of the course to view aspects of a local river in Illinois/Indiana. Same as ESES 222.

GEOG 224  Geog Patterns of Illinois  credit: 3 hours.
Systematic analysis of the environmental and human processes that have shaped the regional landscapes of rural and urban Illinois.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

GEOG 280  Intro to Social Statistics  credit: 4 hours.
Same as SOC 280. See SOC 280.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

GEOG 310  Political Geography  credit: 3 hours.
Problems and issues surrounding the geographic distribution of political actions and outcomes in the context of globalization. Topics include war and peace, access to natural resources, nationalism, democratization, terrorism, and the politics of identity. Prerequisite: Junior standing or consent of instructor.

GEOG 371  Spatial Analysis  credit: 4 hours.
Overview of the spatial analysis (nomothetic) approach to geographic research, both physical and human; includes discussion of the scientific method, with explanations and uses of analytic geographic concepts in studying real world problems. Prerequisite: A course in geography.

GEOG 373  Spring Field Course  credit: 4 hours.
Field observation and mapping of human and physical phenomena using basic geographic field techniques; required ten-day field trip during spring term break. Prerequisite: Geography majors, or non-majors with consent of instructor.

GEOG 379  Introduction to GIS  credit: 4 hours.
Introduction to fundamental methods of data analysis using geographic information systems. This course emphasizes hands-on experience and will expose students to geographic data structures, analysis and representation through a variety of real-world applications. Same as ESES 379.

GEOG 381  Environmental Perspectives  credit: 3 hours.
Focus on the major ideas in contemporary environmentalism, especially on how humans do and should interact with the environment. Same as ESES 381. Prerequisite: Junior or senior undergraduate standing.
GEOG 384  **Population Geography**  credit: 3 hours.
Problems and issues surrounding the geographic distribution of populations at the world, regional, and local levels; emphasizes problems associated with population growth and decline, recent population redistribution, births and deaths, and elderly and minority populations.

GEOG 390  **Individual Study**  credit: 2 TO 4 hours.
Supervised independent study of special topics or regions. May be repeated once. Prerequisite: Junior standing; at least one formal course in the topic or region of interest; consent of instructor.

GEOG 391  **Honors Individual Study**  credit: 2 TO 4 hours.
Individual study and research projects for students who are working toward the degree with distinction in geography. May be repeated to a maximum of 8 hours. Prerequisite: Junior standing; consent of honors adviser.

GEOG 394  **Special Topics Social Geog**  credit: 4 hours.
Introduction to current research in social geography; includes such topics as access to public facilities, geography of crime, innovation diffusion, geography of communications, spatial assimilation of minorities, and geography of social well-being. See Schedule for current topics. May be repeated.

GEOG 401  **Watershed Hydrology**  credit: 3 hours.
Same as NRES 401. See NRES 401.

GEOG 406  **Fluvial Geomorphology**  credit: 4 hours.
Systematic overview of the forms and processes associated with rivers and drainage basins; topics include basin hydrology, drainage networks, river hydraulics, sediment transport processes, channel morphology, channel change, and human impacts on fluvial systems. Same as GEOL 406, and NRES 406. Prerequisite: PHYS 101, and GEOG 103 or GEOL 107, or consent of instructor.

GEOG 408  **Watershed Analysis**  credit: 4 hours.
Systematic analysis of the geomorphological processes operating in watersheds and the impact of humans on these processes. The course will emphasize the importance of watershed geomorphology in watershed management. Class discussion and a class project will focus on a practical watershed assessment problem. Prerequisite: GEOG 103 or equivalent.

GEOG 410  **Geography of Dev and Underdev**  credit: 4 hours.
Patterns and processes of Third World development geography. Lectures and discussion draw upon theoretical and case study material by development geographers working in Asia, Africa, and Latin America. Prerequisite: GEOG 101, GEOG 110, and ECON 101 are highly recommended.

GEOG 421  **Earth Systems Modeling**  credit: 4 hours.
Same as ATMS 421, ESES 421, GEOL 481, and NRES 422. See ATMS 421.

GEOG 427  **Amer Vernacular Cultural Land**  credit: 4 hours.
Same as LA 427. See LA 427.

GEOG 438  **Geography of Health Care**  credit: 3 OR 4 hours.
Methods and perspectives of health care. Emphasizing the spatial analysis of health and health care. The organization, provision and competition of health care will be highlighted. Same as SOC 478. 3 undergraduate hours. 4 graduate hours. Prerequisite: GEOG 384 or SOC 274 or consent of instructor.

GEOG 439  **Health Applications of GIS**  credit: 3 hours.
Same as CHLH 439 and PATH 439. See PATH 439.

GEOG 446  **Sustainable Planning Seminar**  credit: 4 hours.
Same as NRES 446 and UP 446. See UP 446.

GEOG 455  **Geog of Sub-Saharn Africa**  credit: 3 hours.
Regional geography of Africa south of the Sahara. Geographic analysis of Africa which includes topics in both physical and human geography and provides a general overview of the processes and interactions between human and environmental factors that shape Africa's physical and human geography.

GEOG 460  **Anal & Interp Aerial Photo**  credit: 3 OR 4 hours.
Review of methods for extracting quantitative and qualitative information from aerial photographs using computer-based techniques and visual interpretation. The first part of the course will cover basic photogrammetry and mapping. The second part will focus on
interpretation of physical, biological, and cultural features. Same as NRES 460. 3 undergraduate hours. 4 graduate hours. Prerequisite: Knowledge of trigonometry (MATH 014 or equivalent) and basic physical geography (GEOG 103 or equivalent).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit:</th>
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<tbody>
<tr>
<td>GEOG 465</td>
<td>Trans Systems and Spatial Dev</td>
<td>2 TO 4</td>
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<td>Descriptors of transportation systems: allocation models; transportation as an industrial activity and public good; and transportation and spatial development, including the role of transportation in developing countries and in urban and regional development and problems involved in measuring the impact of transport investment. 3 undergraduate hours. 2 or 4 graduate hours.</td>
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<tr>
<td>GEOG 466</td>
<td>Environmental Policy</td>
<td>3 OR 4</td>
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<td>Examination of the geographical and political aspects of human-environmental relations; focusing on how environmental problems are defined, negotiated, and addressed through policy formulation. Specific approaches to environmental policy will be considered at different geographical scales. Same as ESES 466. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in Geography or Political Science or consent of instructor.</td>
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<td>GEOG 467</td>
<td>Dybm Simul of Nat Res Problems</td>
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<td>Examines the development of the physically based theories of scarcity and a comparison to the historical and most recent economic theories of scarcity of critical resources, especially energy, and their expected application in local, regional, national, and international situations. Same as ECON 415 and ESES 467. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: MATH 231 or MATH 234; ECON 102 or ECON 103, or equivalent; ECON 302 or consent of instructor.</td>
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<tr>
<td>GEOG 468</td>
<td>Biological Modeling</td>
<td>3 OR 4</td>
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<td>Interdisciplinary modeling course for students interested in dynamic system modeling of living processes; each student will build a model by the end of the course. No special mathematical background required. Same as ANSC 449, CPSC 448, and IB 491. 3 undergraduate hours. 4 graduate hours. Prerequisite: IB 441, IB 444, or equivalent, depending on curriculum.</td>
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<tr>
<td>GEOG 469</td>
<td>Spatial Ecosystem Modeling</td>
<td>3 OR 4</td>
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<td>Students will build a spatial dynamic ecosystem computer model as a research team, focusing on a specific endangered species or ecosystem. Same as CPSC 449, IB 492, and NRES 469. 3 undergraduate hours. 4 graduate hours. Prerequisite: GEOG 468 or consent of instructor.</td>
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<tr>
<td>GEOG 470</td>
<td>Intro Quant Methods in Geog</td>
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<td>Introduction to statistical, numerical, and mathematical techniques used in geographic research; introduction to computer usage in geographic research. Prerequisite: GEOG 280, one year of college mathematics, or one course in statistics, or equivalent.</td>
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<td>GEOG 471</td>
<td>Recent Trends in Geog Thought</td>
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<td>Examination of recent trends in human and physical geography. Themes include empiricism, logical positivism, regionalism, Marxism, realism, phenomenology, and post-modernism as applied to geographic research. Emerging geographic literature is explored to identify the latest conceptual developments.</td>
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<tr>
<td>GEOG 473</td>
<td>Map Compilation and Construct</td>
<td>4</td>
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<td>Instruction and practice in the basic techniques of map making followed by a consideration of problems involved in the construction of maps for presentation in a reproduced form (i.e., printed, photographed); the selection of proper source materials for the base and body of the map, the compilation and correlation of these materials, and methods of mechanical and photographic reproduction.</td>
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<td>GEOG 476</td>
<td>Applied GIS to Environ Studies</td>
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<td>Demonstrates how Geographic Information Systems have become a fundamental application to study major problems encountered in physical and environmental geography. Prerequisite: GEOG 103 or GEOG 104, consent of instructor.</td>
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<tr>
<td>GEOG 477</td>
<td>Introduction to Remote Sensing</td>
<td>3</td>
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<td>Fundamentals of energy-matter interaction mechanisms, and the manifestation of reflected and emitted radiation on photographs and images; introduces characteristics of aerial films and filters, electro-optical scanners, and digital processing; and emphasizes applications in environmental problems. Same as NRES 477. Prerequisite: GEOG 280 (beginning statistics) or equivalent, or consent of instructor.</td>
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<tr>
<td>GEOG 478</td>
<td>Techniques of Remote Sensing</td>
<td>4</td>
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<td>Optical and digital information processing of imagery acquired from aircraft and satellite remote sensing platforms; includes systems design, mensuration theory, photographic enhancement techniques, and automatic digital classification for all of the standard sensor systems; and laboratory focusing on the design and implementation of information processing techniques with application limited to a survey of uses. Prerequisite: GEOG 470 and GEOG 477, or equivalent.</td>
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<tr>
<td>GEOG 479</td>
<td>Advanced Geog Info Systems</td>
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<td>Introduces the concepts of digital cartographic data, spatial analysis methods, and process modeling. Prerequisite: GEOG 280, GEOG 371, GEOG 379; or equivalent.</td>
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</table>
GEOG 483  **Urban Geography**  credit: 3 hours.
Distribution, functions, and internal structures of cities; emphasizes contemporary metropolitan and central city problems.

GEOG 489  **Programming for GIS**  credit: 4 hours.
Customization of GIS application with academic and commercial programming tools. Topics include GIS user-interface design, advanced functions and tools coding, fundamental spatial data structures and algorithms, and geospatial database management. Prerequisite: GEOG 379 or GEOG 473 or any other equivalent introductory GIS course.

GEOG 491  **Research in Geography**  credit: 2 hours.
Detailed examination and discussion of the methods of initiating and executing research projects in human or physical geography (taught in separate sections); requires students to write a research proposal of a quality suitable for a graduate thesis. Prerequisite: GEOG 471; either graduate standing in geography or senior standing as a geography major and consent of department.

GEOG 495  **Seminar in Social Geography**  credit: 0 TO 8 hours.
Advanced study of a current research topic in social geography. Topic varies from term to term; prepares students for dissertation and thesis research through study of advanced literature and the completion of a research paper. Prerequisite: GEOG 470 and GEOG 471, or equivalent; graduate coursework in social geography or in one of the social sciences.

GEOG 505  **Seminar in Physical Geography**  credit: 2 TO 4 hours.
Advanced study of one of several topics that vary from term to term and include: (a) mathematical models/numerical analysis in physical geography; (b) problems in physical geography; and (c) professional seminar. Prerequisite: Advanced course work in physical geography and consent of instructor.

GEOG 520  **Political Ecology**  credit: 3 hours.
Political ecology integrates social and biophysical processes in the study of nature-society relations. Examination of the conceptual origins of the field of political ecology and identification of influential bodies of research and promising research directions. Readings focus on recent advances, debates, and the ongoing evolution of political ecology as an integrative approach to Geography and environment-development studies. May be repeated to a maximum of 6 graduate hours. Prerequisite: One of the following courses, or consent of the instructor: GEOG 410, GEOG 466, SOC 447, HIST 460, or equivalent.

GEOG 556  **Regional Science Methods**  credit: 4 hours.
Examines models of regional growth and development, including export base, input-output and econometric, cohort component and spatial interaction; emphasizes socioeconomic impact analysis and forecasting subnational economic and demographic change. Same as UP 556. Prerequisite: UP 506 or consent of instructor.

GEOG 557  **Seminar in Regional Science**  credit: 4 hours.
Discusses advanced topics in regional science; prepares students for dissertation and thesis research, applied study for public agency, or other student research. Same as UP 557. Prerequisite: GEOG 556 or consent of instructor.

GEOG 560  **Spatial Epidemiology**  credit: 4 hours.
Same as CHLH 560 and PATH 560. See PATH 560.

GEOG 570  **Advanced Spatial Analysis**  credit: 4 hours.
Advanced techniques of spatial analysis, including spatial autocorrelation, trend surface analysis, grouping and regionalization procedures, and point pattern analysis. Prerequisite: GEOG 470 or equivalent.

GEOG 583  **Environ History Cities&Regions**  credit: 4 hours.
Same as LA 583 and UP 583. See UP 583.

GEOG 587  **Qualitative Research Methods**  credit: 4 hours.
Same as UP 587. See UP 587.

GEOG 594  **Seminar in Social Geography**  credit: 4 hours.
Advanced study of a current research topic in social geography. Topic varies from term to term; prepares students for dissertation and thesis research through study of advanced literature and the completion of a research paper. Prerequisite: GEOG 470 and GEOG 471, or equivalent; graduate coursework in social geography or in one of the social sciences.

GEOG 595  **Advanced Studies in Geography**  credit: 0 TO 8 hours.
Seminar and directed individual investigation of selected problems or regions; designed to develop ability to conduct independent investigation. Scheduled seminars are detailed in each term's Class Schedule. All students are required to register each term in section Z (the departmental colloquium) for 0 hours in addition to other GEOG 495 work which may be selected. Approved for both letter and S/U grading. May be repeated.

GEOG 599  **Thesis Research**  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
GEOL 100  **Planet Earth**  credit: 3 hours.
Introduces non-science majors to physical aspects (earthquakes, volcanoes, floods, tsunamis, mountains, plate tectonics) and historical aspects (formation of earth and life, dinosaurs, ice age, evolution of climate) in earth science. Presents information on earth resources, natural hazards, and development of natural landscapes. Focuses on humanistic issues; provides context for understanding environmental change. Optional lab demonstrations and field trips with co-registration in GEOL 110. Credit is not given for both GEOL 100 and GEOL 101, GEOL 103, GEOL 107, or GEOL 111.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

GEOL 101  **Introductory Physical Geology**  credit: 4 hours.
Focuses on physical features of our planet and their origin. Topics include: plate tectonics, mountain building, glaciers, earthquakes, volcanoes, coastlines, rivers, deserts, geologic structures, weathering, minerals, and rocks. Introduces fundamental methodology for observing and interpreting earth features. Intended for non-physical science majors. Credit is not given for both GEOL 101 and GEOL 100, GEOL 103, GEOL 107, or GEOL 111.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

GEOL 103  **Planet Earth QRII**  credit: 3 hours.
Topics covered are very similar to those of GEOL 101. Emphasis is in the application of quantitative methods in deriving geological knowledge. A weekly computer laboratory is an essential component of the course. Credit is not given for both GEOL 103 and GEOL 100, GEOL 101, GEOL 107, or GEOL 111.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

GEOL 104  **Geology of the National Parks**  credit: 3 hours.
Develops geologic background, concepts, and principles through study of selected national parks and monuments. Examines the geologic framework and history, modern geologic processes, and factors influencing the present day landscape for each park area. Same as ESES 104.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

GEOL 107  **Physical Geology**  credit: 4 hours.
Introduces Earth phenomena and processes. Includes minerals and rocks, continental drift, plate tectonics, rock deformation, igneous and sedimentary processes, geologic time, landscape evolution, internal structure and composition of the earth, groundwater, seismology and earthquakes, and formation of natural resources. Emphasizes the chemical and physical aspects of the Earth, and the basis for geological inference. Field trip required for geology majors, optional for others. Intended for science and science-oriented students. Credit may not be received for both GEOL 107 and GEOL 100, GEOL 101, GEOL 103, or GEOL 111.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

GEOL 110  **Exploring Geology in the Field**  credit: 1 hours.
Introduces practical techniques for identification of rocks, minerals, and fossils; interpretation of geologic maps and cross-sections; appreciation of Midwestern geologic history and geologic features and landforms in the field. Two field trips are required (a 1-day and a 3-day trip).

GEOL 111  **The Dynamic Earth-Honors**  credit: 4 hours.
Study of the geological history and evolution of the earth, the formation of mountains and ocean basins, the making of continents and earth environments and resources. Typically, a three to four-day field trip is required. Course in the Campus Honors Program. Credit may not be received for both GEOL 111 and GEOL 100, GEOL 101, GEOL 103, or GEOL 107.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

GEOL 116  The Planets  credit: 3 hours.
Introduces non-science majors to important processes and their consequences on a planet-wide scale. Discusses system to tectonic, volcanic, chemical, and atmospheric cycles evolving through the past 4.5 billion years of the planets and satellites; the interrelationship between deep-seated and surficial processes; processes common to terrestrial planets and unique to the Earth. Credit is not given for both GEOL 116 and ASTR 121.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

GEOL 117  The Oceans  credit: 3 hours.
Integrated introduction to oceanography and marine geology and geophysics. Topics include ocean-basin formation and evolution (in the context of plate tectonics), ocean ecology, the hydrologic cycle, water chemistry, currents and waves, the interaction of oceans with climate, coastal hazards, resources, pollution, and the Law of the Sea. Course is oriented toward students not majoring in science.
Same as ESES 117.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

GEOL 118  Natural Disasters  credit: 3 hours.
Introduces the nature, causes, risks, effects, and prediction of natural disasters including earthquakes, volcanoes, landslides, subsidence, global climate change, severe weather, coastal erosion, floods, mass extinctions, and meteorite impacts; covers geologic principles and case histories of natural disasters as well as human responses (societal impact, mitigation strategies, and public policy).
Same as ENVS 180 and GLBL 118.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

GEOL 143  History of Life  credit: 3 hours.
Evolution of life from its beginning, illustrating changing faunas and floras through time; the invasion of land and of the skies; the effects of a changing atmosphere, changing climates, and continental drift. Emphasis on dinosaur evolution, ecology, and extinction; also other vertebrates, including mammal-like reptiles, mammals, and the emergence of humans, as well as plants and invertebrates.
Same as ESES 143.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

GEOL 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

GEOL 201  History of Geology  credit: 3 hours.
Traces the development of key ideas in the science, beginning with musings of the ancient Greek and Roman philosophers and early observations of the Earth by European and Arab scholars. Considers advances in mapmaking that span thousands of years and examines the origins of the Geologic Time Scale, including determination of the ages of rocks. Looks at early geologists from around the world, in the US, in Illinois, and at the U of I. Reads some classic papers establishing the grand unifying theory of geology: plate tectonics. Intended for both non-science students and geology majors. Prerequisite: A 100-level geology course (excluding GEOL 110 and GEOL 143).

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Advanced Composition

GEOL 208  History of the Earth System  credit: 4 hours.
Presents systematic analysis of formation and evolution of the Earth and its dynamic systems (lithosphere, hydrosphere, atmosphere, and biosphere). Also introduces methods of reconstructing Earth's history through use of geochronology, paleontology, and the stratigraphic records. Introduces the geological history of life evolution, mountain belts and continents, geochemical systems, climate, sea level, and the Earth's interior. Field trip and field trip fee required. Same as ESES 208. Prerequisite: GEOL 100, GEOL 101, GEOL 103, GEOL 104, GEOL 107, or GEOL 111 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

GEOL 333  Earth Materials and the Env  credit: 4 hours.
Studies the origin, identification, and environmental significance of earth materials (minerals, rocks, and soil). Environmental topics include: mineral resources; acid mine drainage; volcanic hazards; swelling soils; engineering strength, porosity/permeability, and architectural uses of earth materials; and asbestos. Required 1- or 2-day field trip. Same as ESES 333. Credit is not given for both GEOL 333 and GEOL 432. Prerequisite: GEOL 100 and GEOL 110; or GEOL 101, GEOL 103, GEOL 104, GEOL 107, GEOL 111, or GEOL 250; and CHEM 102 and CHEM 103; or consent of instructor.

**GEOL 380  Environmental Geology**  credit: 4 hours.
Increases student understanding of environmental issues of water supply and pollution, waste disposal, energy, environmental health, global change, and land evaluation and use by emphasizing the role of geology and its relationships to human activities. Course requires a one-day field trip. Same as ENV 380. Prerequisite: CHEM 102 and CHEM 103; and GEOL 100 and GEOL 110, or GEOL 101, GEOL 103, GEOL 104, GEOL 107, GEOL 111, or GEOL 250; or consent of instructor.

**GEOL 390  Individual Study**  credit: 1 TO 4 hours.
Research and individual study in geology. May be repeated. A maximum of 8 hours of GEOL 390 plus GEOL 391 may be counted toward graduation. Prerequisite: GEOL 208 or equivalent; consent of supervising faculty member.

**GEOL 391  Individual Honors Study**  credit: 1 TO 4 hours.
Research and individual study in geology for honors credit. May be repeated. A maximum of 8 hours of GEOL 390 plus GEOL 391 may be counted toward graduation. Prerequisite: GEOL 208 or equivalent; consent of supervising faculty member and of departmental honors advisor.

**GEOL 401  Geomorphology**  credit: 4 hours.
History, origin, and characteristics of land forms produced by weathering, fluvial, glacial, wind, and wave processes or by a combination of these acting upon the major kinds of geologic materials and structures. Lectures, laboratory, and field trips. Same as ESES 411. Prerequisite: GEOL 208 or consent of instructor.

**GEOL 406  Fluvial Geomorphology**  credit: 4 hours.
Same as GEOG 406 and NRES 406. See GEOG 406.

**GEOL 411  Structural Geol and Tectonics**  credit: 4 hours.
Introduction to principles of rock deformation, stress, and strain; description and interpretation of geologic structures; study of methods for structural analysis; outline of geotectonic processes; three hours of lecture and a three-hour lab per week. Required four-day field trip. Prerequisite: GEOL 107 or consent of instructor.

**GEOL 415  Field Geology**  credit: 2 TO 8 hours.
Group field study in a prominent geologic locality; includes in-class meetings, student-led presentation, and field trip; trips run during spring break, winter break, in mid-end May or intercession; dates depend on location. May be repeated. Prerequisite: Consent of instructor. Field trip fee required.

**GEOL 417  Geol Field Methods, Western US**  credit: 6 hours.
Field course based in the mountains of the western United States. Provides intensive practical experience in geologic mapping, as well as instruction in field structural, stratigraphic, geomorphologic, and petrologic analysis. Offered during summer session only. Prerequisite: Eight hours of 400-level credit in geology, or consent of instructor; GEOL 411, GEOL 432, and GEOL 440 are recommended.

**GEOL 420  Introduction to Paleontology**  credit: 3 hours.
Surveys the major groups of fossil forming invertebrates, vertebrates and plants, their modes of preservation, and basics of taxonomy; also their use in the study of functional morphology, ecology, evolution, and biogeography. Prerequisite: GEOL 208, or IB 466, or consent of instructor.

**GEOL 432  Mineralogy and Mineral Optics**  credit: 4 hours.
Introduction to: crystallography; crystal optics; structure, composition, properties, stability and geological occurrences of minerals; and mineral identification. Credit is not given for both GEOL 333 and GEOL 432. Prerequisite: GEOL 208 and CHEM 104 and CHEM 105.

**GEOL 436  Petrology and Petrography**  credit: 4 hours.
Study of the minerals, compositions, textures, structures, classifications, and origins of igneous, and metamorphic rocks; lectures emphasize rock forming processes (petrology), and laboratories emphasize use of the petrographic microscope (petrography). Prerequisite: GEOL 432.

**GEOL 440  Sedimentology and Stratigraphy**  credit: 4 hours.
Introduces dynamics of sedimentation, geology of sedimentary basins, the distribution of geologic processes through time, definition and correlation of stratigraphic units, principles of paleogeography, stratigraphy and tectonics. Prerequisite: GEOL 208 or consent of instructor.
GEOL 450  **Physics of the Earth**  credit: 3 hours.
Survey of the physical and chemical principles used to delineate the physical state and evolution of the Earth including its internal structure, composition, and mineralogy. Topics include seismology, gravity, magnetics, heat flow, geophysical exploration, high-pressure mineralogy, and composition of the mantle and core. Students in geophysics, engineering, or physics should enroll in GEOL 452. Credit is not given for both GEOL 450 and GEOL 452. Prerequisite: PHYS 211, GEOL 432, credit or concurrent registration in GEOL 411, or consent of instructor.

GEOL 451  **Methods in Applied Geophysics**  credit: 4 hours.
Discusses nondestructive geophysical methods to reveal subsurface structures. Topics include seismic, gravity, magnetics, electrical methods, ground penetrating radar, borehole geophysics, and their applications to hydrocarbon and mineral exploration as well as engineering and environmental investigations. Several required local trips for field experiments. Prerequisite: MATH 241 and PHYS 212.

GEOL 452  **Introduction to Geophysics**  credit: 4 hours.
Introduces basic concepts related to the physics of the Earth's interior. Topics include formation of the Earth; its composition, gravity, shape, internal temperature, and magnetism; seismology; plate tectonics; and geodynamics. Same as ASTR 452. Credit is not given for both GEOL 452 and GEOL 450. Prerequisite: MATH 241 and PHYS 212.

GEOL 454  **Introduction to Seismology**  credit: 3 OR 4 hours.
Introducing the basic theory of seismic wave generation and propagation and its application to Earth structure and earthquakes, including body waves, surface waves, inference of Earth structure, seismic prospecting, earthquake mechanisms, and strong ground motions. 3 or 4 undergraduate hours. Students participating in optional class projects receive an additional hour of credit. Prerequisite: MATH 285 or consent of instructor.

GEOL 460  **Geochemistry**  credit: 3 hours.
Fundamental chemical and physical concepts applied to geological processes; topics include: origin, distribution, and geochemical behavior of elements; chemical evolution of the Earth; geochemistry of natural waters and sedimentary rocks; isotope geochemistry, crystal chemistry, trace element geochemistry and organic geochemistry. Prerequisite: GEOL 101 or GEOL 107; CHEM 104; CHEM 105; MATH 220 or MATH 221; or consent of instructor.

GEOL 470  **Introduction to Hydrogeology**  credit: 4 hours.
Introduction to environmental and economic aspects of the occurrence and movement of groundwater through the earth's crust; topics include the hydrologic cycle, groundwater contamination, petroleum migration, formation of mineral resources, and groundwater chemistry. Same as ESES 470. Prerequisite: MATH 220 or MATH 221; concurrent registration in either (i) CHEM 104 and CHEM 105 or (ii) CHEM 203 and CHEM 204; or consent of instructor.

GEOL 481  **Earth Systems Modeling**  credit: 4 hours.
Same as ATMS 421, ESES 421, GEOG 421, and NRES 422. See ATMS 421.

GEOL 492  **Senior Thesis**  credit: 2 TO 8 hours.
Research in geology, with thesis; a thesis must be submitted for credit to be received. No graduate credit. May be repeated. A maximum of 10 hours of GEOL 492 plus GEOL 493 may be counted toward graduation. Prerequisite: Consent of supervising faculty member.

GEOL 493  **Honors Senior Thesis**  credit: 2 TO 8 hours.
Research in geology with honors thesis; a thesis must be submitted for credit to be received. No graduate credit. May be repeated. A maximum of 10 hours of GEOL 492 plus GEOL 493 may be counted toward graduation. Prerequisite: Consent of supervising faculty member and of departmental honors advisor.

GEOL 497  **Special Topics in Geology**  credit: 1 TO 4 hours.
Seminar or lectures in subjects not covered by regular course offerings; for advanced undergraduates and graduate students. 1 to 4 graduate hours. May be repeated. Prerequisite: Consent of instructor.

GEOL 511  **Advanced Structural Geology**  credit: 4 hours.
Study of selected topics concerning rock deformation processes and products. Course will introduce students to current research literature and methods, and to the techniques of structural analysis. Prerequisite: GEOL 411 or equivalent; consent of instructor.

GEOL 512  **Geotectonics**  credit: 4 hours.
Discussion of plate tectonics theory, and nature and distribution of regional-scale earth structures, such as mountain belts; includes study of geological and geophysical evidence that led to modern interpretations of evolution of earth's lithosphere. Prerequisite: GEOL 411 or consent of instructor.

GEOL 515  **Advanced Field Geology**  credit: 2 TO 4 hours.
Group field study in a prominent geologic locality; includes in-class meetings, student-led presentation, and field trip; trips run during spring break, winter break, mid-end May or intercession; dates depend on location. May be repeated. Prerequisite: Consent of instructor. Field trip fee required.

**GEOL 516 Continental Lithosphere**  credit: 3 hours.
Crustal composition and evolution, physical properties of the lithospheric mantle and effects of temperature, petrology and texture, the isopycnic (tectosphere) hypothesis, rock mechanics and rheology, seismic anisotropy and petro-fabrics, and mechanisms of uplift. Prerequisite: Equivalent of GEOL 411, GEOL 450 or GEOL 452, and GEOL 436 or GEOL 460, or consent of instructor.

**GEOL 521 Topics in Paleontology**  credit: 4 hours.
Selected topics in macro- and micropaleontology. Intensive study of a selected invertebrate or algal group; special problems in the taxonomy, evolution, skeletal diagenesis, ecology, biogeography, and biostratigraphy of selected fossil organisms. May be repeated. Prerequisite: GEOL 420, IB 466, or consent of instructor.

**GEOL 531 Structural Mineralogy**  credit: 4 hours.
Structure and crystal chemistry of minerals and survey of current knowledge of the properties and behavior of selected minerals and mineral groups. Prerequisite: GEOL 432 or consent of instructor.

**GEOL 540 Petroleum Geology**  credit: 4 hours.
Application of geoscience to understanding the nature and occurrence of hydrocarbon resources. Emphasizes: source-rock geology and geochemistry, process of petroleum migration, nature of reservoirs and traps, exploration and drilling procedures, interpretation of seismic-reflection profiles, cross-section and sub-surface map construction, classification and tectonics of petroleum-bearing sedimentary basins, application of sequence stratigraphy to exploration, and petroleum-related environmental issues. Prerequisite: GEOL 411 and GEOL 440, or equivalent.

**GEOL 552 Geodynamics**  credit: 4 hours.
Addresses dynamical characteristics of the solid earth. Mathematical theories will be developed that describe large scale deformation, both on the surface and within the interior of the earth. Theoretical predictions will be compared with observations to delineate: the internal properties of the earth; driving mechanism of plate tectonics and the origin of various geological processes such as volcanism, mountain building and basin formation. Prerequisite: MATH 285, PHYS 211, GEOL 452, or consent of instructor.

**GEOL 553 Chemistry of Earth’s Interior**  credit: 4 hours.
The state of Earth’s interior, emphasizing its chemical composition and mineralogy. Focuses on the interpretation of geochemical, petrologic, and laboratory geophysical data related to deep Earth composition, thermal state, structure, and evolution. Prerequisite: GEOL 450, GEOL 452, or consent of instructor.

**GEOL 554 Physics of Earth’s Interior**  credit: 4 hours.
Study of the state of Earth’s interior, including fundamental theories, geophysical methods, and recent discoveries. Emphasizes interpretation of observed seismic and other geophysical data related to the structure, composition, evolution, and dynamical processes of the Earth’s mantle and core. prerequisite: GEOL 450, GEOL 452, or consent of instructor.

**GEOL 560 Physical Geochemistry**  credit: 4 hours.
Introduction to geochemical thermodynamics and kinetics providing the background needed for more advanced courses in geochemistry, petrology, and mineralogy. Prerequisite: CHEM 104; CHEM 105; MATH 241; or equivalents; or consent of instructor.

**GEOL 562 Isotope Geology**  credit: 4 hours.
Introduction to the theoretical basis for isotopic fractionation in nature; survey of isotopic variations in natural materials; and application of isotopic variations to problems of geological and environmental significance. prerequisite: Consent of instructor.

**GEOL 563 Analytical Geochemistry**  credit: 4 hours.
Introduces principles and applications of chemical and isotopic analysis of geological materials, including x-ray spectroscopy, mass spectrometry and atomic spectroscopy. Lectures cover theory of analysis while practical laboratory based exercises focus on how instruments work and instrument operation. Individually tailored analysis project constitutes a major part of assessment. Prerequisite: Consent of instructor.

**GEOL 570 Hydrogeology**  credit: 4 hours.
The occurrence, storage, and movement of water within sediments and rocks, with emphasis on quantitative aspects of physical hydrologic theory; topics include flow modeling, heat transport and mass transfer, groundwater contamination, and the role of fluid migration within the earth’s crust in geologic processes. Prerequisite: GEOL 470, CEE 454, or consent of instructor.

**GEOL 571 Geochemical Reaction Analysis**  credit: 4 hours.
Study of the chemical processes affecting fluids, sediments, and rocks of the earth’s crust, with emphasis on the inorganic geochemistry of groundwater and the development and application of quantitative reaction models. Prerequisite: GEOL 460, GEOL 560, or GEOL 561, or CEE 443 or CEE 537, or consent of instructor.

**GEOL 579  Isotope Hydrogeology  credit: 4 hours.**
Application of isotope measurements in hydrogeology. Groundwater age dating, stable isotope ratios and anthropogenic radionuclides will be considered in the context of studying a broad range of hydrologic problems, from siting of nuclear waste disposal to understanding the migration of groundwater in sedimentary basins. Prerequisite: GEOL 470 or GEOL 562, CEE 454, or consent of instructor.

**GEOL 591  Current Research in Geoscience  credit: 1 hours.**
Brings students up-to-date with current research over a broad spectrum of geoscience; improves students' oral presentation skills by practice and example. Required for all graduate students in Geology. Approved for S/U grading only. May be repeated to a maximum of 12 hours. Prerequisite: Graduate standing in Department of Geology or consent of instructor.

**GEOL 593  Advanced Studies in Geology  credit: 1 TO 8 hours.**
Work may be taken in the following fields: (a) general geology; (b) engineering geology; (c) geomorphology and glacial geology; (d) clay mineralogy; (e) ground-water geology; (f) geomicrobiology; (g) geological fluid dynamics; (h) mineralogy and crystallography; (i) paleontology; (j) geochemistry; (k) geophysics; (l) petrography and petrology; (m) sedimentology; (n) stratigraphy; (o) oceanography; (p) submarine geology; (q) structural geology and geotectonics; (r) mathematical geology; (s) sedimentary petrography; (t) petroleum geology; (u) coal geology; (v) isotope geology and geochronology; (w) electron beam analysis; (x) vulcanology; (y) environmental geology; and (z) planetology. Approved for S/U grading only. May be repeated.

**GEOL 599  Thesis Research  credit: 0 TO 16 hours.**
Individual research under supervision of members of the faculty in their respective fields. Approved for S/U grading only. May be repeated.
GER 101  Beginning German I  credit: 4 hours.
Oral practice, reading, and grammar for beginners.

GER 102  Beginning German II  credit: 4 hours.
Continuation of GER 101. Prerequisite: One semester of college German or equivalent.

GER 103  Intermediate German I  credit: 4 hours.
Continuation of GER 102. Prerequisite: Two semesters of college German or equivalent.

GER 104  Intermediate German II  credit: 4 hours.
Continuation of GER 103. Prerequisite: Three semesters of college German or equivalent.

GER 109  Living German - German Living  credit: 1 hours.
Practice in speaking German for students living in the German House. Approved for both letter and S/U grading. May be repeated to a maximum of 3 hours. Prerequisite: Elementary speaking knowledge of German.

GER 111  Freshman Honors Tutorial  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars and Associates. May be repeated once. Prerequisite: Consent of departmental honors advisor.

GER 119  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

GER 200  German Literature in Trans  credit: 3 hours.
Introduction to German literature for students with no knowledge of German. Same as CWL 224. May be repeated if topics vary.

GER 201  German Popular Culture  credit: 3 hours.
Introduction to the study of modern and contemporary German culture through examining examples of popular culture from the late-eighteenth century to the present. Looks at texts and films as a mirror and critique of modern German society. Topics to be discussed: nationalism, gender, ethnicity, minority cultures, Jewish life in Germany, German images of other cultures, etc. Course taught in English.

GER 205  Germany and Europe  credit: 3 hours.
Introduction into major issues in contemporary German society with a special focus on Germany's functioning within Europe and the European Union through novels, films, essays, interviews etc. Course taught in English.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

GER 211  Conversation and Writing I  credit: 3 hours.
Prerequisite: GER 104 or equivalent, or consent of instructor.

GER 212  Conversation and Writing II  credit: 3 hours.
Continuation of GER 211. Prerequisite: GER 211 or equivalent, or consent of instructor.

GER 250  Grimm's Fairy Tales in Context  credit: 3 hours.
Special attention is paid to the Grimm's tales in terms of traditional narrative genres, elements of life in early modern Europe, and versions from Italy and France as well as Germany. Course is conducted in English. Same as CWL 250 and ENGL 267. Prerequisite: Completion of the Campus Composition I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult
UIUC: Advanced Composition

GER 254  The Legend of King Arthur  credit: 3 hours.
A study of the medieval literary sources (in English translation) - chronicles, romances, lais, fabliaux, poetry - that created the legend of King Arthur and the Knights of the Round Table. Students will study the development of and changes in the legend, both in form and content, as it crossed cultural borders in the Middle Ages, e.g., from England to the continent and from France to Germany and Scandinavia. Same as CWL 254 and MDVL 254.

This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

GER 257  Vienna 1900  credit: 3 hours.
An overview of Vienna's cultural landscape (architecture, music, literature, and the visual arts) and investigation of the relevant historical and political developments at the roots of Vienna's cultural importance in turn-of-the-century Europe. This course is only taught in Vienna. Same as ANTH 257 and HIST 257.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

GER 260  The Holocaust in Context  credit: 3 hours.
Jewish contributions to German Literature from 1200 to the present day. Includes trips to the University Library's Rare Book Room. Same as CWL 271 and ENGL 268. Prerequisite: Completion of the Campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult
UIUC: Advanced Composition

GER 270  Sexuality and Literature  credit: 3 hours.
Examination of the historical contexts in which sexuality has been debated during the past three centuries, and to what extent sexuality is perceived differently in diverse cultures. Part one will look at the Western tradition, especially Germany. Part two will shift focus to the non-Western world, especially to the colonial history of Indonesia. Same as CWL 272 and GWS 270.

GER 299  Study Abroad  credit: 0 TO 18 hours.
Lectures, seminars, and practical work in German language, literature, civilization, and in other academic areas appropriate to the student's course of study. Approved for both letter and S/U grading. Maximum of 34 hours per academic year. Prerequisite: GER 104 or equivalent; 2.75 overall average; 3.0 average in German courses.

GER 320  German for Business  credit: 3 hours.
Introduces German business language as used in basic operations in retail/wholesale, export/import, banking transactions. Prerequisite: GER 211 or consent of instructor.

GER 321  German for Economics  credit: 3 hours.
German language as used in professional contexts involving economic matters: texts and documents relating to forms of enterprises and their financing, to macroeconomic structures of domestic and foreign trade, and to reports on the economies of German-speaking countries. Prerequisite: GER 320 or consent of instructor.

GER 331  Intro to German Literature  credit: 3 hours.
Introductory study of representative works (prose, drama, lyric) by outstanding German, Austrian, and Swiss writers of the modern period. Prerequisite: Two years of college German or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

GER 332  German Literature and Culture  credit: 3 hours.
In German. Seminar in the literature and culture of German-speaking countries since 1750. Topic varies. Format: lecture; discussion; film screenings. Prerequisite: GER 331 or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

GER 385  Politics of the European Union  credit: 3 hours.
Same as FR 385 and PS 385. See PS 385.

GER 396  Special Topics German Studies  credit: 3 hours.
Introductory study in such topics as individual authors, selected literary movements or periods, modes of inquiry in literary study, minor genres, subgenres, extraliterary influences, etc. Same as CWL 328. May be repeated to a maximum of 6 hours if topics vary. Prerequisite: Reading fluency in German beyond the fourth-semester college level.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GER 401</td>
<td>Global Issues in German</td>
<td>3 hours</td>
<td>Introduction to global issues in German media. Taught in German. Prerequisite: GER 212 or equivalent.</td>
</tr>
<tr>
<td>GER 402</td>
<td>German Stylistics</td>
<td>3 hours</td>
<td>Intensive study of problems of advanced German style with emphasis on written practice. Prerequisite: GER 401 or equivalent.</td>
</tr>
<tr>
<td>GER 403</td>
<td>Translation, Theory &amp; Practice</td>
<td>3 hours</td>
<td>Theory and practice of translating technical, commercial, scientific, and literary texts from German into English and vice versa. Prerequisite: GER 401 or consent of instructor.</td>
</tr>
<tr>
<td>GER 418</td>
<td>Language &amp; Minorities in Europe</td>
<td>3 OR 4 hours</td>
<td>Same as FR 418, LING 418, PS 418, and SLAV 418. See FR 418.</td>
</tr>
<tr>
<td>GER 420</td>
<td>German Cultural History</td>
<td>4 hours</td>
<td>A general introduction to German culture from the pre-Christian period to the twenty-first century, focusing on the tension between forces of history and modernization in German culture. Course materials include literary and philosophical texts, film, painting, and music. Particular attention will be paid to the role of art in society. Prerequisite: One 200-level German course and GER 331; or consent of instructor.</td>
</tr>
<tr>
<td>GER 460</td>
<td>Principles of Language Testing</td>
<td>3 OR 4 hours</td>
<td>Same as EIL 460, EPSY 487, FR 460, ITAL 460, PORT 460, SLS 460, and SPAN 460. See EIL 460.</td>
</tr>
<tr>
<td>GER 465</td>
<td>Ling Structures of German</td>
<td>3 hours</td>
<td>Survey of the linguistic structures of German in historical, geographic, and social context. Prerequisite: Three years of college German or equivalent.</td>
</tr>
<tr>
<td>GER 469</td>
<td>Intro Second Lang Learn Tchg</td>
<td>4 hours</td>
<td>Same as CHIN 471, FR 471, HUM 471, JAPN 471, LAT 471, RUSS 471, and SPAN 471. See SPAN 471.</td>
</tr>
<tr>
<td>GER 470</td>
<td>Middle Ages to Baroque</td>
<td>3 hours</td>
<td>Literary, thematic, cultural, and bibliographical analysis of the major authors, works, genres, and movements in German literature from 750-1720. Same as MDVL 470. Prerequisite: GER 332 or equivalent.</td>
</tr>
<tr>
<td>GER 471</td>
<td>Enlightenment to Romanticism</td>
<td>3 hours</td>
<td>Literary, thematic, cultural, and bibliographical analysis of the major authors, works, genres, and movements in German literature from 1720 to 1830. Prerequisite: GER 332 or equivalent.</td>
</tr>
<tr>
<td>GER 472</td>
<td>Realism to Expressionism</td>
<td>3 hours</td>
<td>Literary, thematic, cultural, and bibliographical analysis of the major authors, works, genres, and movements in German literature from 1830 to 1920. Prerequisite: GER 332 or equivalent.</td>
</tr>
<tr>
<td>GER 473</td>
<td>1920s to Today</td>
<td>3 hours</td>
<td>Literary, thematic, cultural, and bibliographical analysis of the major authors, works, genres, and movements in German literature from 1920 to the present. Prerequisite: GER 332 or equivalent.</td>
</tr>
<tr>
<td>GER 475</td>
<td>Intro to Comm Lang Tchg</td>
<td>4 hours</td>
<td>Same as CHIN 475, FR 475, JAPN 475, LAT 475, RUSS 475, and SPAN 475. See SPAN 475.</td>
</tr>
<tr>
<td>GER 478</td>
<td>Topics Secondary Lang Tchg</td>
<td>4 hours</td>
<td>Same as CHIN 478, FR 478, JAPN 478, LAT 478, RUSS 478, and SPAN 478. See SPAN 478.</td>
</tr>
<tr>
<td>GER 482</td>
<td>Computer Foreign Lang Tchg</td>
<td>4 hours</td>
<td>Same as CLCV 482, EIL 482, FR 482, HUM 482, ITAL 482, LING 486, PORT 482, SLAV 482, and SPAN 482. See HUM 482.</td>
</tr>
<tr>
<td>GER 489</td>
<td>Theoretical Foundations of SLA</td>
<td>3 OR 4 hours</td>
<td>Same as EIL 489, FR 481, ITAL 489, LING 489, PORT 489, SLS 489, and SPAN 489. See EIL 489.</td>
</tr>
<tr>
<td>GER 491</td>
<td>Honors Senior Thesis</td>
<td>1 TO 4 hours</td>
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</tbody>
</table>
Intended primarily for candidates for honors in German, but open to other seniors. May be repeated to a maximum of 4 hours. No graduate credit. Prerequisite: Senior standing; consent of instructor.

**GER 493 German Cinema I**  credit: 3 hours.
Focus on the rise of German film from its earliest beginnings until 1945. Same as CINE 493.

**GER 494 German Cinema II**  credit: 3 hours.
Study of German film from 1945 until the present. Same as CINE 494.

**GER 496 Special Topics German Studies**  credit: 3 hours.
Intensive study of restricted topics in German language, literature, and culture. 3 undergraduate hours. 3 graduate hours. May be repeated as topics vary to a maximum of 9 undergraduate hours or 8 graduate hours. Prerequisite: Three years of college German or equivalent.

**GER 500 Readings in German Grads I**  credit: 4 hours.
Introduction to the reading of German texts in the sciences and the humanities. Credit may not be used towards a graduate degree.

**GER 501 Readings in German Grads II**  credit: 4 hours.
Designed for graduate students preparing for the German reading requirements for the Ph.D. Credit may not be used towards a graduate degree. Prerequisite: GER 500 or equivalent.

**GER 510 Introduction to Graduate Study**  credit: 4 hours.
Bibliography and methodology of the study of the Germanic languages and literatures, with particular regard to German literature and Germanic linguistics; introduction to scholarship in general and the German profession in particular, including the modes and methods of scholarly endeavor.

**GER 515 Middle High German**  credit: 4 hours.
Same as MDVL 515.

**GER 520 History of the German Language**  credit: 4 hours.
Internal and external history of German from prehistoric times to the present. Prerequisite: GER 465 or equivalent.

**GER 530 Old High German**  credit: 4 hours.
Grammar and interpretation of the oldest literary documents. Same as MDVL 530. Prerequisite: GER 465.

**GER 563 College Teaching Foreign Langs**  credit: 2 OR 4 hours.
Same as EIL 563, FR 563, ITAL 563, PORT 563, RUSS 563, and SPAN 563. See FR 563.

**GER 570 Studies in Critical Theory**  credit: 4 hours.
Critical introduction to the enterprise of reading, accompanied by an overview of this century's most important theories of literature and criticism. Same as CWL 570. May be repeated to a maximum of 12 hours if topics vary. Prerequisite: GER 510 or equivalent, and reading knowledge of German, English, and one other modern European language.

**GER 571 Medieval German Studies**  credit: 4 hours.
Seminar in selected genres, themes, or authors of the Middle Ages. Epic, lyric, and didactic works in prose and verse are read in the original language. Same as MDVL 571. May be repeated to a maximum of 12 hours if topics vary. Prerequisite: GER 510 and GER 515 or equivalent, or consent of instructor.

**GER 572 Early Modern German Studies**  credit: 4 hours.
Seminar in selected genres, themes, or authors of the early modern period (1500-1700). May be repeated to a maximum of 12 hours if topics vary. Prerequisite: GER 470.

**GER 573 18thC German Studies**  credit: 4 hours.
Seminar in selected genres, themes, or authors of the eighteenth century. May be repeated to a maximum of 12 hours if topics vary. Prerequisite: GER 420 or GER 471.

**GER 574 19thC German Studies**  credit: 4 hours.
Seminar in selected genres, themes, or authors of the nineteenth century. May be repeated to a maximum of 12 hours if topics vary. Prerequisite: Two 400-level courses in German literature or equivalent.

**GER 575 20thC German Studies**  credit: 4 hours.
Seminar in selected genres, themes, or authors of the twentieth century. May be repeated to a maximum of 12 hours if topics vary. Prerequisite: Two 400-level courses in German literature or equivalent.
GER 576  **Open Seminar in German Studies**  credit: 4 hours.
Seminar in literary phenomena (such as movements, genres and forms, relations, themes and types, interdisciplinary studies, women's studies) that go beyond the confines of a particular century. May be repeated to a maximum of 12 hours if topics vary. Prerequisite: GER 510.

GER 580  **Classroom Lang Acquisition**  credit: 4 hours.
Same as EIL 580, FR 580, ITAL 580, PORT 580, SLS 580, and SPAN 580. See SPAN 580.

GER 582  **Theories of German Lang Tchg**  credit: 4 hours.
In-depth exploration of fundamental concepts and problems of teaching German in college; designed for Teaching Assistants; topics include teaching approaches, lesson planning, reading, listening, speaking, writing, language testing, and instructional technology. Students are required to submit a research paper on a topic appropriate to the course content.

GER 584  **Theories in SLA**  credit: 4 hours.
Same as CI 584, EALC 584, EIL 584, EPSY 563, FR 584, ITAL 584, LING 584, PORT 584, SLS 584, and SPAN 584. See SPAN 584.

GER 588  **Sem Second Lang Learn**  credit: 4 hours.
Same as EALC 588, EIL 590, FR 588, ITAL 588, LING 588, PORT 588, SLS 588, and SPAN 588. See SPAN 588.

GER 593  **Research in Special Topics**  credit: 1 TO 8 hours.
May be repeated to a maximum of 8 hours.

GER 599  **Thesis Research**  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
Global Studies

International Programs and Studies
Program Advisor: Barbara Hancin-Bhatt
Office: 104C English Building, 608 S. Wright Street, Urbana
Phone: 333-0178
www.ips.uiuc.edu

GLBL 100  Intro to Global Studies  credit: 3 hours.
Foundation course for International Studies majors, introducing students to globalization, the interconnections among people and places as a result of this phenomenon and how globalization has impacted world regions of focus within the Global Studies major. Topics include: processes of globalization, indicators of economic and social development, sustainable development issues, global and geo-politics, cultural integration/coherence and diversity.

GLBL 110  Geography of Intl Conflicts  credit: 3 hours.
Same as GEOG 110. See GEOG 110.
This course satisfies the General Education Criteria for a: UIUC Social Sciences

GLBL 118  Natural Disasters  credit: 3 hours.
Same as ENVS 180 and GEOL 118. See GEOL 118.
This course satisfies the General Education Criteria for a: UIUC: Physical Sciences

GLBL 201  Energy Systems  credit: 2 OR 3 hours.
Same as NPRE 201. See NPRE 201.

GLBL 251  War Milit Insts Soc Since 1815  credit: 3 hours.
Same as HIST 251. See HIST 251.

GLBL 267  Math Issues National Security  credit: 3 hours.
Same as MATH 267. See MATH 267.

GLBL 280  Nuclear Weapons & Arms Control  credit: 3 hours.
Same as PHYS 280. See PHYS 280.
This course satisfies the General Education Criteria for a: UIUC: Advanced Composition

GLBL 283  Intro to Intl Security  credit: 3 hours.
Same as PS 283. See PS 283.

GLBL 296  Global St Foundation Seminar  credit: 1 hours.
Examination of current controversies and larger ethical issues in today's global society. Topics could include: immigration, global environmental debates, and population issues. May be repeated in separate terms to a maximum of 3 hours. Prerequisite: GLBL 100.

GLBL 298  Global Studies Seminar Abroad  credit: 3 hours.
Seminars introduce students to aspects of globalization through a case study of a particular location abroad. On campus, students explore historical and contemporary aspects of the location abroad to prepare for their field visit. Abroad, students engage with local resources and people to better understand how the local site contributes to and is impacted by relevant global processes under focus. Course activities will include a field site visit abroad, discussions, lectures, short essays, student presentation, and final projects. Topics vary according to site location and instructor expertise. For more information, go to: http://www.las.uiuc.edu/coursesabroad/globalstudies.html. May be repeated in separate terms to a maximum of 6 hours.

GLBL 352  Art, Propaganda, and War  credit: 3 hours.
Same as ARTH 352. See ARTH 352.
This course satisfies the General Education Criteria for a: UIUC: Literature and the Arts
UIUC: Advanced Composition
GLBL 356  Comparative Political Economy  credit: 3 hours.
Same as PS 356. See PS 356.

GLBL 357  Ethnic Conflict  credit: 3 hours.
Same as PS 357. See PS 357.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

GLBL 385  The Ethics of War and Peace  credit: 3 hours.
Same as PHIL 385 and RLST 385. See PHIL 385.

GLBL 403  Women in Muslim Societies  credit: 3 OR 4 hours.
Same as ANTH 403, GWS 403, HIST 434, and RLST 403. See RLST 403.

GLBL 480  Energy and Security  credit: 3 hours.
Same as NPRE 480 and PS 480. See NPRE 480.

GLBL 481  Writing on Technol & Security  credit: 3 hours.
Same as NPRE 481 and PS 481.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

GLBL 482  Miltry & Civ Uses Nucl Energy  credit: 1 hours.
Same as NPRE 482. See NPRE 482.

GLBL 483  Seminar on Security  credit: 1 hours.
Same as NPRE 483. See NPRE 483.

GLBL 494  Research Methods I  credit: 3 hours.
Optional Senior Capstone experience for International Studies students. Students will develop research skills, communication and presentation skills; develop a proposal for a capstone project, goals and timeline. The proposal will include a literature review and methods section for their final project. Topics include: research approaches, design and implementation, as well as methods, analysis and ethics of data collection. No graduate credit.

GLBL 495  Research Methods II  credit: 1 hours.
Second semester of the optional Senior Capstone experience for International Studies students. Designed to guide the interpretation of the data, development of conclusions and implications. In addition to the final project, students will learn how to write a paper abstract and conference proposal, as well as acquire presentation skills. No graduate credit. Prerequisite: GLBL 494.
Germanic

Head of Department: Mara Wade
Department Office: 2090 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-1288
www.germanic.uiuc.edu

GMC 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

GMC 562  **Germanic Linguistics**  credit: 4 TO 8 hours.
Varying topics dealing with problems in diachronic and synchronic Germanic linguistics. May be repeated if topics vary. Prerequisite: Consent of instructor.
Greek

Classics
Head: David Sansone
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-1008
www.classics.uiuc.edu

GRK 101  Elementary Greek I  credit: 4 hours.
Introduces ancient Greek (both classical and koine), including the reading of simple prose. Same as RLST 111.

GRK 102  Elementary Greek II  credit: 4 hours.
Continuation of GRK 101. Grammar and reading in classical and koine Greek. Same as RLST 112. Prerequisite: GRK 101.

GRK 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

GRK 201  Classical & Koine Greek I  credit: 4 hours.
Readings in classical Greek prose, and narrative and epistolary New Testament texts. Same as RLST 200. Prerequisite: GRK 102.

GRK 202  Classical & Koine Greek II  credit: 4 hours.
Continuation of GRK 201. Further readings in classical Greek prose, and narrative and epistolary New Testament texts. Same as RLST 204. Prerequisite: GRK 201 or equivalent.

GRK 401  Homeric Greek  credit: 2 OR 3 hours.
Introduction to Epic Greek; readings of Homer. 3 undergraduate hours. 2 graduate hours. Prerequisite: GRK 202 or equivalent.

GRK 410  Intro to Indo-European Ling  credit: 3 OR 4 hours.
Same as LAT 410 and LING 409. See LING 409.

GRK 411  Greek Prose Composition  credit: 3 hours.
Practice in the writing of Greek prose. Prerequisite: GRK 201 or equivalent.

GRK 491  Readings in Greek Literature  credit: 3 OR 4 hours.
Readings in authors or special topics chosen by the instructor from the entire extant literature in Greek. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated. Prerequisite: GRK 401 or equivalent.

GRK 492  Senior Thesis  credit: 2 TO 4 hours.
Thesis and honors. Open to candidates for distinction in Greek. 2 to 4 undergraduate hours. No graduate credit. Prerequisite: Senior standing and consent of Classics Honors Program.

GRK 493  Independent Reading  credit: 1 TO 4 hours.
1 to 4 undergraduate hours. 1 to 4 graduate hours. May be repeated to a maximum of 8 undergraduate hours or 12 graduate hours. Prerequisite: GRK 401 and consent of instructor.

GRK 498  Senior Survey  credit: 2 OR 4 hours.
For candidates for honors in Greek and for other seniors. 2 or 4 undergraduate hours. Prerequisite: Senior standing and consent of Classics Honors Program.

GRK 511  Advanced Composition  credit: 3 hours.
Practice in writing continuous Greek prose, with special attention to stylistic problems. Prerequisite: GRK 411 or equivalent.

GRK 520  Proseminar  credit: 4 hours.
Alternating poetry and prose, concentrates on a major author from one of the following areas: epic, history, lyric poetry, oratory, drama, or philosophy. Areas normally follow this sequence in successive years. May be repeated to a maximum of 20 hours if topics vary. Prerequisite: GRK 491 or equivalent.

GRK 531  Special Disciplines  credit: 4 hours.
Variable content course concentrating on an area such as comparative grammar, epigraphy, metrics, palaeography, or papyrology. Same as LAT 531. May be repeated if topics vary. Prerequisite: GRK 491 and LAT 491, or equivalent.
GRK 580  **Greek Seminar**  credit: 4 hours.
Research on special problems of Greek literature; required of all majors in classical philology. May be repeated if topics vary.
Prerequisite: A Greek proseminar.

GRK 595  **Intro to Classical Studies**  credit: 4 hours.
Introductory survey for graduate students in classics; prepares students for work at the graduate level and surveys basic bibliography and methodology. Same as LAT 595. Prerequisite: Graduate standing in classics.

GRK 599  **Thesis Research**  credit: 0 TO 16 hours.
Guidance in writing theses for advanced degrees. Approved for S/U grading only. May be repeated.
GS 101  **Exploring General Studies**  credit: 1 hours.
An introduction to the opportunities and resources available to the "undeclared" students enrolled in the Division of General Studies at Illinois. Introduces students to the breadth of diverse fields of study available, prepares DGS students for myriad potential careers, and helps foster a sense of collaboration and engagement through campus orientation, study, and project-based assignments. Credit is not given for both GS 101 and GS 102.

GS 102  **Introduction to DGS Honors**  credit: 1 hours.
An introduction to the DGS James Scholars honor program. Classroom activities develop collaborative relationships between students themselves and the section facilitators. The small class environment offers additional opportunities for academic and social engagement, for mentoring, and participation in co-curricular events. The class will also present the breadth of diverse fields of study available and prepare freshmen to explore myriad potential careers. Students will engage in collaboration through campus orientation, study, and project based assignments. Credit is not given for both GS 102 and GS 101. Class Sched
GWS 103  **Black Women in the Diaspora**  credit: 3 hours.
Same as AFRO 103 and AFST 103. See AFRO 103.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

GWS 150  **Contemp Women’s Issues**  credit: 3 hours.
Explores the most recent debate and research related to contemporary issues which affect primarily women. Reviews issues related to sexual and domestic violence, gender socialization, feminization of poverty, women's health, sexual harassment, work and family, politics, and media influences from a multi-discipline and multi-cultural perspective.

GWS 199  **Undergraduate Open Seminar**  credit: 0 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

GWS 218  **Intro to Social Issues Theatre**  credit: 3 hours.
Same as THEA 218. See THEA 218.

GWS 220  **Psych of Gender**  credit: 3 hours.
Same as PSYC 240. See PSYC 240.

GWS 225  **Women in Prehistory**  credit: 3 hours.
Same as ANTH 225. See ANTH 225.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

GWS 226  **Black Women Contemp US Society**  credit: 3 hours.
Same as AFRO 226 and SOC 223. See AFRO 226.

GWS 240  **Sex & Gender in Antiquity**  credit: 3 hours.
Same as CLCV 240, and CWL 262. See CLCV 240.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

GWS 245  **Women & Gender Pre-Mod Europe**  credit: 3 hours.
Same as HIST 245 and MDVL 245. See HIST 245.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

GWS 250  **Gender Studies Humanities**  credit: 3 hours.
Interdisciplinary introduction to women and gender. Analysis of representations of women (including race, class, and sexuality) in popular culture, painting, film, literature, music, history, religion.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

GWS 258  **Sex in Nature and Culture**  credit: 3 hours.
Same as ANTH 258. See ANTH 258.

GWS 260  **Gender Studies Soc Sci**  credit: 3 hours.
The impact of culture and society on gender roles, including socialization and identity formation, as expressed in life-styles, marriage and family alternatives, and patterns of education and employment. Same as HDFS 260 and SOC 220.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

GWS 261 Gender Transnatl Perspective credit: 3 hours.
Same as SOC 261. See SOC 261.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

GWS 262 Women's Lives credit: 3 hours.
Same as ANTH 262. See ANTH 262.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

GWS 263 US History of Medicine credit: 3 hours.
Same as HIST 263. See HIST 263.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

GWS 270 Sexuality and Literature credit: 3 hours.
Same as GER 270 and CWL 272. See CWL 272.

GWS 272 Women and Politics credit: 3 hours.
Same as PS 272. See PS 272.

GWS 280 Women Writers credit: 3 hours.
Same as ENGL 280. See ENGL 280.

GWS 281 Women in the Lit Imagination credit: 3 hours.
Same as ENGL 281. See ENGL 281.

GWS 285 US Gender History to 1877 credit: 3 hours.
Same as HIST 285. See HIST 285.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

GWS 286 US Gender History Since 1877 credit: 3 hours.
Same as HIST 286. See HIST 286.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

GWS 287 African-American Women credit: 3 hours.
Same as AFRO 287 and HIST 287. See HIST 287.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

GWS 295 Beginning Topics GWS credit: 3 hours.
Approved for both letter and S/U grading. May be repeated in the same term to a maximum of 9 hours. May be repeated in separate terms to a maximum of 12 hours.

GWS 301 Research & Methods in GWS credit: 3 hours.
Develops students’ research and writing skills in gender and women's studies, highlighting the complexity of the research process and exploring various topics and issues from a variety of methodological perspectives. Prerequisite: GWS 250, GWS 260, or equivalent, or consent of instructor.

GWS 319 Women in Japanese Lit credit: 3 hours.
Same as CWL 319 and EALC 319. See EALC 319.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
</tr>
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<tbody>
<tr>
<td>GWS 320</td>
<td>Gender &amp; Latina/o Migration</td>
<td>3 hours</td>
<td>Same as LLS 320 and SOC 321. See LLS 320.</td>
</tr>
<tr>
<td>GWS 325</td>
<td>Lesbian Print Culture</td>
<td>3 hours</td>
<td>Study of the emergence of lesbian literature in the publishing and cultural industry in the 20th-21st century U.S. Prerequisite: GWS 250 or GWS 260 or GWS 350; or consent of instructor.</td>
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<tr>
<td>GWS 334</td>
<td>Brazilian Women’s Lit Trans</td>
<td>3 hours</td>
<td>Same as PORT 334. See PORT 334.</td>
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<tr>
<td>GWS 340</td>
<td>Gender, Relationships &amp; Society</td>
<td>3 hours</td>
<td>Same as HDFS 340 and SOC 322. See HDFS 340.</td>
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<tr>
<td>GWS 342</td>
<td>Women in the Labor Market</td>
<td>3 hours</td>
<td>Same as ECON 342. See ECON 342.</td>
</tr>
<tr>
<td>GWS 350</td>
<td>Intro to Feminist Theory</td>
<td>3 hours</td>
<td>Interdisciplinary introductory survey of feminist theory. Traces developments in feminist theory and explores contemporary debates.</td>
</tr>
<tr>
<td>GWS 356</td>
<td>Sex &amp; Gender in Popular Media</td>
<td>3 hours</td>
<td>Same as MS 356. See MS 356.</td>
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<tr>
<td>GWS 360</td>
<td>Women and the Visual Arts</td>
<td>3 hours</td>
<td>Same as ARTH 360. See ARTH 360.</td>
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<tr>
<td>GWS 361</td>
<td>Women in East Asia</td>
<td>3 hours</td>
<td>Same as EALC 361. See EALC 361.</td>
</tr>
<tr>
<td>GWS 365</td>
<td>Gender, Science and Technology</td>
<td>3 hours</td>
<td>Study of the ways in which gender shapes scientific practice and technological development, and how science and technology shape notions of gender and sexuality. Prerequisite: Introductory course in Gender and Women's Studies or consent of instructor.</td>
</tr>
<tr>
<td>GWS 370</td>
<td>Intro to Queer Studies</td>
<td>3 hours</td>
<td>Interdisciplinary introduction to the field of queer studies. Traces the history of sexuality and sexual identities, reviews key concepts and debates guiding queer studies, and evaluates how they facilitate understandings of the social and cultural dimensions of sexuality. Same as SOC 320. Prerequisite: GWS 250 or GWS 260 or GWS 350, or consent of instructor.</td>
</tr>
<tr>
<td>GWS 375</td>
<td>Scandinavian Sexualities</td>
<td>3 hours</td>
<td>Same as CWL 375 and SCAN 375. See SCAN 375.</td>
</tr>
<tr>
<td>GWS 380</td>
<td>Black Women Hist &amp; Cultures</td>
<td>3 hours</td>
<td>Interdisciplinary study of black women's multiple histories and varied cultures including black women from North America, Africa, and the Caribbean. Same as AFRO 380. Prerequisite: AFRO 100 or GWS 250 or GWS 260 or consent of instructor.</td>
</tr>
<tr>
<td>GWS 383</td>
<td>Hist of Blk Women's Activism</td>
<td>3 hours</td>
<td>Same as AFRO 383 and HIST 383. See AFRO 383.</td>
</tr>
<tr>
<td>GWS 390</td>
<td>Individual Study</td>
<td>0 TO 3 hours</td>
<td></td>
</tr>
</tbody>
</table>
Special topics not treated in regularly scheduled classes. May be repeated to a maximum of 6 hours. Students may register in more than one section per term. Approved for both letter and S/U grading. Prerequisite: One course in Gender and Women's Studies; consent of instructor.

GWS 392  **Chicanas&Latinas: Self&Society**  credit: 3 hours.
Same as LLS 392 and SOC 392. See LLS 392.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

GWS 395  **Intermediate Topics GWS**  credit: 3 hours.
Approved for both letter and S/U grading. May be repeated in the same term to a maximum of 9 hours. May be repeated in separate terms to a maximum of 12 hours.

GWS 403  **Women in Muslim Societies**  credit: 3 OR 4 hours.
Same as ANTH 403, GLBL 403, HIST 434, and RLST 403. See RLST 403.

GWS 409  **Women's Health**  credit: 3 hours.
Same as CHLH 409. See CHLH 409.

GWS 415  **Africana Feminisms**  credit: 3 OR 4 hours.
Same as AFRO 415 and AFST 420. See AFRO 415.

GWS 417  **Leading Post-Perform Dialog**  credit: 4 hours.
Same as THEA 417. See THEA 417.

GWS 418  **Devising Social Issues Theatre**  credit: 3 OR 4 hours.
Same as THEA 418. See THEA 418.

GWS 421  **Sex Role Theory in Counseling**  credit: 4 hours.
Same as EPSY 421. See EPSY 421.

GWS 424  **Gender & Race in Contemp Arch**  credit: 3 hours.
Same as ARCH 424. See ARCH 424.

GWS 432  **Gender and Language**  credit: 3 OR 4 hours.
Same as CMN 432 and LING 432. See CMN 432.

GWS 435  **Commodifying Difference**  credit: 3 OR 4 hours.
Same as AAS 435, AFRO 435, LLS 435, and MS 432. See LLS 435.

GWS 442  **Body, Culture & Society**  credit: 3 OR 4 hours.
Same as KIN 442. See KIN 442.

GWS 445  **US Latina Lit and Iconography**  credit: 3 OR 4 hours.
Same as LLS 442 and SPAN 442. See LLS 442.

GWS 446  **Gender & Physical Activity**  credit: 3 OR 4 hours.
Same as KIN 446. See KIN 446.

GWS 450  **Topics in Bodies and Genders**  credit: 3 hours.
Same as CWL 450. See CWL 450.

GWS 455  **Girls and Popular Culture**  credit: 3 OR 4 hours.
Examination of the relationship between girls and popular culture from various interdisciplinary perspectives. Topics include historical representations of girls, prominence of girls in contemporary popular culture, and how girls use, produce and interact with popular culture. 3 undergraduate hours. 4 graduate hours. Prerequisite: GWS 250 or GWS 260 or consent of instructor.

GWS 459  **Postcolonial/Queer**  credit: 3 OR 4 hours.
Explores the relationship of imperialism, sexuality, and race through the lens of postcolonial theory. Same as HIST 459. 3 undergraduate hours. 4 graduate hours. Prerequisite: GWS 250 or GWS 260 and GWS 350 or GWS 370; or consent of instructor.

GWS 465  **Race, Sex, and Deviance**  credit: 3 OR 4 hours.
GWS 469  **Women, Autobiography & History**  credit: 3 OR 4 hours.
Same as HIST 469. See HIST 469.

GWS 470  **Trans Bodies & Politics**  credit: 3 OR 4 hours.
Seminar is concerned with the historical and political significance of current models of, claims about, and contests for meaning surrounding "sex" and the human body. Students will examine and critically evaluate contemporary debates about transgender, intersexuality and other trans-bodies that contest normative male/female binaries. Readings and discussions will be directed at examining the dynamics implicated in the ongoing making of nature and sexual difference as they are enacted and encoded on and through transbodies. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in Gender and Women's Studies at the 200- or 300-level, or consent of instructor.

GWS 478  **Sex, Power and Politics**  credit: 3 OR 4 hours.
Examines representations of the relationship between sex, power, and subjectivity and how they have shaped feminism. Explores critical approaches to feminist analyses of women's oppression and debates about sexuality, including issues such as consent, rape and prostitution. Same as PS 413. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in Gender and Women's Studies at the 200- and 300-level or consent of instructor.

GWS 480  **Gender Relations & Intl Dev**  credit: 3 OR 4 hours.
Interdisciplinary seminar examining theoretical and empirical research on gender and the transformation of social and economic structures. Students will develop a comparative perspective on issues of women and public policy by contrasting and comparing such policies in North and South America, Eastern and Western Europe, Asia, and Africa. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in Gender and Women's Studies or one course in international social, economic, or political development, or consent of instructor.

GWS 485  **The Politics of Fashion**  credit: 3 OR 4 hours.
Interdisciplinary and transnational study of the historical and cultural development of fashion. Examines the social and political tensions embodied in fashion, the fashion industry, and sartorial practices in relation to gender, race, nation, and sexuality. Same as AAS 485. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in Gender and Women's Studies at the 200 or 300 level, or consent of instructor.

GWS 490  **Individual Study**  credit: 2 TO 4 hours.
Supervised reading and research in Gender and Women's Studies chosen by the student with instructor approval. May be repeated to a maximum of 6 hours. Prerequisite: Two courses in Gender and Women's Studies at the 200-400 levels; or junior standing; or consent of instructor.

GWS 492  **Senior Thesis**  credit: 2 hours.
Completion of an undergraduate thesis under supervision of a faculty member. 2 undergraduate hours. May be repeated to a maximum of 4 undergraduate hours in the same or subsequent terms. Prerequisite: GWS 350 or GWS 370 plus six additional hours of advanced coursework in Gender and Women's Studies; senior standing.

GWS 495  **Advanced Topics GWS**  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate house. Approved for both letter and S/U grading. May be repeated in the same term to a maximum of 9 undergraduate hours or 12 graduate hours. May be repeated in separate terms to a maximum of 12 undergraduate or 12 graduate hours.

GWS 498  **Senior Seminar**  credit: 3 hours.
Considers the relationship between theory and research in Women's Studies. Reviews and examines the key issues of feminist scholarship. Provides students with the methodological knowledge and opportunity to carry out a research project. 3 undergraduate hours. No graduate credit. Prerequisite: Senior standing and enrollment as a major in Gender and Women's Studies, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

GWS 501  **Prob in Comp Women's Hist**  credit: 4 hours.
Same as HIST 503. See HIST 503.

GWS 508  **Feminism, Gender and Sexuality**  credit: 4 hours.
Same as ANTH 508. See ANTH 508.

GWS 540  **Intersectional Pedagogies**  credit: 4 hours.
Examines the link between political movements and pedagogies, including feminist, critical, critical multicultural, critical race, and queer pedagogies. Students will analyze pedagogical theories and implement practical techniques and strategies. Same as EPS 540. Prerequisite: Graduate standing and previous coursework in Gender and Women's Studies; or consent of instructor.

GWS 550  **Fem Theories Humanities**  credit: 4 hours.
Interdisciplinary graduate-level course in feminist theory, with an emphasis on the humanities. Explores current debates in feminist theory as they pertain to humanities disciplines. Prerequisite: At least one graduate-level humanities course or consent of instructor.

GWS 551  **HBSE II: Women's Issues**  credit: 4 hours.
Same as SOCW 551. See SOCW 551.

GWS 560  **Feminist Media Studies**  credit: 4 hours.
Same as MDIA 560. See MDIA 560.

GWS 561  **Race and Cultural Critique**  credit: 4 hours.
Same as AAS 561, AFRO 531, ANTH 565, and LLS 561. See AAS 561.

GWS 570  **Fem Research Soc Sci**  credit: 4 hours.
Interdisciplinary feminist theory and research course with emphasis on the social sciences. Examines theoretical, methodological, and empirical research on sex, gender, and women in the social sciences. Same as SOC 520. Prerequisite: Undergraduate statistics; at least one graduate-level social science course or consent of instructor. A graduate-level course in social science research methods is strongly recommended.

GWS 580  **Queer Theory**  credit: 4 hours.
Seminar in Queer Theory. Traces the history of the field of queer theory and examines recent developments such as black queer studies and transnational queer studies. Prerequisite: Graduate standing.

GWS 590  **Topics in GWS**  credit: 4 hours.
May be repeated. Prerequisite: Graduate standing and previous coursework in women's or gender studies, or consent of instructor.
### HCD 531  **Community Studies Theory**  credit: 4 hours.
Covers main currents of thought and paradigms in community studies and development. Focuses on theories of community definition and functioning, building and sustaining community, and the impact of societal change on community processes. Same as SOC 574 and UP 517.

### HCD 532  **Top Commty Studies & Outreach**  credit: 1 TO 4 hours.
Provides an in-depth examination of contemporary issues and emerging research topics in the fields of community studies and rural studies. Major emphasis is placed on examining various theoretical perspectives, evaluating research designs and writing for academic markets. May be repeated in the same or subsequent semesters.

### HCD 533  **Community In American Society**  credit: 4 hours.
Classic U. S. community studies are paired with current journal articles to examine how people in rural, suburban, and urban places go about making, maintaining or losing “community” in the context of societal change. The community studies provide a window on change at the local level including: urbanization, suburbanization, ethnic group interactions, inner-city poverty concentration, household structure variation, economic restructuring, and environmental impacts. Community studies are also critically evaluated both theoretically and as a research strategy. Same as SOC 572 and UP 533. Prerequisite: HCD 531.

### HCD 534  **Neighborhoods and Human Dev**  credit: 4 hours.
Theories, methodological issues, and current empirical research on the impact of neighborhoods on human development and family welfare across the life course including how neighborhoods characteristics, e.g., poverty, racial and ethnic composition, and geographic space, influence child and adolescent development, health, and employment opportunities and success in adulthood. Key mechanisms include: family conditions, local environment, social networks, and spatial mismatch.

### HCD 535  **Community Development**  credit: 4 hours.
Critical theories and current issues in community development, both domestic and international, including key factors such as economic development, globalization, and racial and ethnic diversity. Explores application of community development practice to analyze and address these issues, including asset-based development, participatory approaches, and the community capitals framework. Semester projects will contribute to local community development initiatives. Prerequisite: HCD 531.

### HCD 536  **Education & Human Capital**  credit: 4 hours.
In-depth examination of fundamental philosophical and contemporary issues and emerging research topics in the fields of experiential, career, and outreach education; examines how career and outreach education builds human capital for local communities through career and leadership development, youth and adult learning, and experiential and life-long learning.

### HCD 537  **Experiential Learning**  credit: 4 hours.
In-depth investigation of the theoretical and practical approaches of experiential learning in a variety of instructional settings. Investigates the foundations of experiential learning processes, focusing upon applications in career, outreach and community-based education in both formal and non-formal situations. Provides theoretical foundations and instruction related to the planning, implementation and evaluation of experiential-based instructional programs and activities.

### HCD 538  **Community Mobilization**  credit: 4 hours.
Current theory and practices in community organizing and mobilization: the history and traditions of organizing, why people organize, how organizing works, and the impact of societal change on community processes. Content is drawn from both community and social movement theory.

### HCD 539  **Youth, Culture and Society**  credit: 4 hours.
Examines youth as a historically and culturally specific social formation; examines discursive and material positioning of youth within broader intersecting racial, cultural, socio-economic, gender and political contexts to situate youth and youth cultural practices within global and local processes. Specific topics include youth cultures, juvenile justice, education, labor, consumerism, politics, sexuality and activism, as well as methodological considerations of conducting research on youth. Same as AAS 539 and EPS 539.

### HCD 541  **Social Ent in Diverse Society**  credit: 4 hours.
Same as LLS 554 and SOCW 554. See SOCW 554.

**HCD 543 Ethnography Urban Communities**  credit: 4 hours.
Same as AFRO 552 and SOCW 554. See AFRO 552.

**HCD 590 Advanced Research Methods**  credit: 4 hours.
Overview of positivist, interpretive, and critical research paradigms and their quantitative and qualitative methodologies; critical evaluation of current social science literature; students develop their own research proposals.

**HCD 591 Qualitative Methods**  credit: 4 hours.
Qualitative methods in the social sciences: epistemological context; data collection and relationships with participants; data management, analysis and evaluation; writing strategies. Specific content emphasis alternates annually between field research and grounded theory. May be repeated to a maximum of 8 hours.

**HCD 592 GRID Research Methods**  credit: 4 hours.
Explores use of quantitative and qualitative methods to examine gender issues in developing countries. Topics include: the availability of data from the United Nations and other sources, methods of collecting one's own data and working with local specialists and participants, ethics, and focus groups. Students choose research methods for a project and critically evaluate alternatives. Satisfies the methodology requirement for the doctoral GRID (Gender Roles in International Development) concentration offered by the Women and Gender in Global Perspectives program.

**HCD 594 Advanced Quantitative Methods**  credit: 4 hours.
Detailed overview of quantitative research methods and analyses used in human development, family, and community research, including data management, multi-method approaches, and considerations typical in longitudinal research. Students prepare an NSF-format research grant proposal, including budget and IRB approval documentation. Prerequisite: HCD 590 or equivalent.

**HCD 595 Seminar**  credit: 1 TO 4 hours.
Discussion and evaluation of current literature on selected topics in human and community development. May be repeated in the same or subsequent terms.

**HCD 598 Special Problems in HCD**  credit: 1 TO 4 hours.
Research or independent study on a special problem that is not part of thesis work. May be repeated in the same or separate terms to a maximum of 8 hours.

**HCD 599 Thesis Research**  credit: 0 TO 16 hours.
Individual thesis research under supervision of faculty in specialized fields of human and community development. May be repeated. Approved for S/U grading only.
Human Development and Family Studies

Human and Community Development
Head of Department: Robert Hughes Jr
Department Office: 274 Bevier Hall, 905 South Goodwin Avenue, Urbana
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HDFS 105  Intro to Human Development  credit: 3 hours.
Systematic overview of the psychological, biological, familial, and cultural factors related to human growth and development across the life span.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

HDFS 120  Intro to Family Studies  credit: 3 hours.
Overview of current concepts, theories, and substantive issues in family studies from an interdisciplinary perspective. Gives attention to variation in family form and function across different social/cultural contexts and how family experience is structured by gender. Examines issues of family development (marriage, parenting, divorce, remarriage, aging family) and explores the links between families and other social institutions.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

HDFS 143  Biology of Human Behavior  credit: 3 hours.
Same as ANTH 143. See ANTH 143.

This course satisfies the General Education Criteria for a:
UIUC Life Sciences

HDFS 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
Experimental course on a special topic in human development and family studies. May be repeated in the same or subsequent terms as topics vary.

HDFS 206  Early Childhood Curriculum Dev  credit: 4 hours.
Introduces development of curriculum for children from birth to age five; integrates child development theory and principles with programming for young children in preschool and childcare setting. Prerequisite: HDFS 105.

HDFS 208  Child Fam with Special Needs  credit: 3 hours.
Multi-disciplinary approach to the study of issues related to exceptional children and their families. Explores social, emotional, and economic aspects of exceptionality for both children and families; examines processes of identification, intervention, and integration of children who deviate significantly from developmental norms. Designed for students studying child development, early childhood education, special education, social work, nursing and other disciplines involved with children who have special needs and their families. Recommended for students preparing for internships and careers as Child Life Specialists. Prerequisite: HDFS 105.

HDFS 220  Comparative Family Org  credit: 3 hours.
Cross-cultural and historical examination of how different social, political, and economic systems produce different kinds of families. Same as ANTH 210.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

HDFS 225  Close Relationships  credit: 3 hours.
Initiation, development, and dissolution of committed relationships with same- or opposite-sex partners within familial, cultural, and societal contexts. Prerequisite: Sophomore standing.

HDFS 260  Gender Studies Soc Sci  credit: 3 hours.
Same as GWS 260 and SOC 220. See GWS 260.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

HDFS 261  Self-Help Group Dev & Process  credit: 2 hours.
Defines nature and use of self-help groups in different contexts. Includes role of professionals in group formation and maintenance and develops group planning and management skills. Includes practice in group formation and visits to working groups in the community.

**HDFS 262  Motor Develop, Growth & Form  credit: 3 hours.**

Same as KIN 262. See KIN 262.

This course satisfies the General Education Criteria for a:

UIUC: Behavioral Sciences

**HDFS 290  Intro to Research Methods  credit: 4 hours.**

Introduction to quantitative and qualitative research methods used to study human development and families. Provides experience conducting observations and survey interviews, evaluating research results, and writing research reports. Prerequisite: HDFS 105.

**HDFS 293  Off-Campus Internship  credit: 1 OR 2 hours.**

Supervised, off-campus experience in a field directly pertaining to subject matter in Human Development and Family Studies. Intended primarily for students seeking supervised internship experience needed for certification as a Child Life Specialist. May be repeated to a maximum of 4 hours. Approved for both letter and S/U grading. Prerequisite: Prior or concurrent enrollment in HDFS 408 and consent of instructor.

**HDFS 294  Research Internship  credit: 1 TO 4 hours.**

Supervised on-campus learning experience with faculty engaged in research. May be repeated in the same or separate terms to a maximum of 10 hours. Approved for both letter and S/U grading. Prerequisite: Consent of instructor; not open to students on probation.

**HDFS 295  Independent Study or Research  credit: 1 TO 4 hours.**

Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated in the same or subsequent terms.

**HDFS 301  Infancy & Early Childhood  credit: 4 hours.**

Reviews development during the first five years of life, including cognitive, social, and biological aspects of early development; includes first-hand observation of young children to supplement and extend lecture material. Prerequisite: HDFS 105 or PSYC 216.

**HDFS 305  Middle Childhood  credit: 3 hours.**

Systematic overview of the normative changes that occur in the physical, cognitive, social, emotional, and moral domains during the middle childhood period as well as current social issues that confront many of today's children (such as school violence or poverty). Prerequisite: HDFS 105.

**HDFS 314  Introduction to Aging  credit: 3 hours.**

Same as CHLH 314, RST 314, PSYC 314, and REHB 314. See CHLH 314.

**HDFS 321  Asian Families in America  credit: 3 hours.**

Same as AAS 397 and SOCW 397. See SOCW 397.

This course satisfies the General Education Criteria for a:

UIUC Social Sciences
UIUC: US Minority Culture(s)

**HDFS 340  Gender, Relationships & Society  credit: 3 hours.**

Explores the production of gender through social interaction within families and other specific interpersonal and institutional relationships that change over time. Gender is also linked to race, class, ability, and sexuality. Same as GWS 340 and SOC 322. Prerequisite: HDFS 105 or SOC 100.

**HDFS 341  Asian American Youth  credit: 3 hours.**

Same as AAS 346. See AAS 346.

**HDFS 361  Creative Dance for Children  credit: 3 hours.**

Same as ARTE 350 and DANC 350. See DANC 350.

**HDFS 396  Honors Research or Thesis  credit: 1 TO 4 hours.**

Individual research, special problems, thesis, development and/or design work under the direction of the Honors advisor. May be repeated in the same or subsequent terms. Prerequisite: Junior standing, admission to the ACES Honors Program.

**HDFS 398  Undergraduate Seminar  credit: 1 TO 3 hours.**

Special topics in a field of study directly pertaining to subject matter in human development and family studies. May be repeated in the same or subsequent terms to a maximum of 12 hours as topics vary. Prerequisite: Junior standing.
HDFS 401  Socialization and Development  credit: 4 hours.

Presents and uses theories of socialization to evaluate and analyze current issues and socialization practices; delineates historical and philosophical trends in socialization, and discusses the implications of these trends for generating social policy affecting the developing individual. Prerequisite: HDFS 205.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

HDFS 404  Gerontology  credit: 3 OR 4 hours.

Same as CHLH 404. See CHLH 404.

HDFS 405  Adolescent Development  credit: 3 hours.

Examines paths of experience and individual development within the family, the peer group, and other domains through this socially-defined stage of life. Prerequisite: HDFS 105 and PSYC 100.

HDFS 406  Child Dev Class Supervision  credit: 5 hours.

Examines the relationships between child development theories and developmentally appropriate and individualized instruction techniques, discipline and guidance strategies, and the role of the family in child development programs. Emphasizes program supervision. Includes direct experience with children and families in a laboratory setting. Prerequisite: HDFS 206, HDFS 205 and HDFS 220, and junior standing.

HDFS 408  Hospitalized Children  credit: 3 OR 4 hours.

Examines the development needs and stress reactions of children in hospitals and their families; introduces the role of Child Life programs and the Child Life Specialist; examines responses of family and staff facing terminal illness and the death of a child; familiarizes students with general hospital procedures, medical terms, and illnesses. Optional one-hour clinical placement includes direct experience with hospitalized children and their families. Prerequisite: HDFS 206 and HDFS 208.

HDFS 420  Family Diversity in the U.S.  credit: 3 OR 4 hours.

Examines the diversity families assume in the United States; families are compared in the areas of kinship, family organization, interpersonal relationships, child and youth socialization, wealth and possessions, and integration within the larger society. 3 undergraduate hours. 4 graduate hours. Prerequisite: HDFS 206.

HDFS 421  History of American Families  credit: 3 OR 4 hours.

Same as HIST 471. See HIST 471.

HDFS 422  US Latina and Latino Families  credit: 3 OR 4 hours.

Explores a variety of topics and provides a basic overview of issues relevant to the understanding of Latina/Latino families and children in the United States. Examines recent demographic changes in the U.S. population and its implications for the socialization and education of Latina/Latino children and their families. Course content looks at such areas as who are Latina/Latino families; how are those families different from others; what are the similarities and differences within Latinas/Latinos; how does acculturation and language fit into our understanding of these families; and what are the implications for the education success of current and future Latina/Latino children. Same as LLS 422. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior standing.

HDFS 424  Racial and Ethnic Families  credit: 2 hours.

Same as AFRO 421, EPS 421, and SOC 421. See EPS 421.

HDFS 425  Critical Family Transitions  credit: 4 hours.

Life-span development approach to the study of normative changes and non-normative events and their impact on marriage and family relationships; attention to variations in the socio-economic contexts of family transitions, and to methods for reducing the negative effects of such transitions. Prerequisite: HDFS 120.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

HDFS 426  Family Conflict Management  credit: 3 OR 4 hours.

Examines processes of conflict management in family and community disputes; emphasizes negotiation and mediation as modes of dispute settlement. 3 undergraduate hours. 4 graduate hours. Prerequisite: HDFS 220.

HDFS 450  Practicum in HDFS  credit: 3 TO 12 hours.

Supervised on- or off-campus learning experience related to human development or family studies, supervised in cooperation with an appropriate agency or institution. Not available to students on probation. Only 4 hours of the course may be applied to the total required for a graduate degree in Human and Community Development or a bachelor’s degree in Human Development and Family Studies. Prerequisite: Human Development and Family Studies major; junior standing.
HDFS 454  **Growth & Physical Development**  credit: 3 OR 4 hours.
Same as KIN 454. See KIN 454.

HDFS 499  **Seminar**  credit: 1 TO 4 hours.
Special topics in human development, family studies, or community development. May be repeated in the same or subsequent terms to a maximum of 12 hours as topics vary.

HDFS 500  **Professional Development**  credit: 1 hours.
Overview of issues in professional development in the field of human development and family studies; focuses on both academic and applied career paths. Approved for S/U grading only. May be repeated to a maximum of 4 hours.

HDFS 501  **Human Development Theories**  credit: 4 hours.
Overview of basic theories and theoretical perspectives on human development; focuses on major concepts, issues, and questions in the field.

HDFS 503  **Social-Emotional Development**  credit: 2 hours.
Theory and research related to social and emotional development from infancy through middle childhood. Key topics include emotional regulation and social-emotional understanding, with special attention to the interpersonal contexts of social-emotional development, including parent-child, sibling and peer relationships. Prerequisite: HDFS 501.

HDFS 505  **Advanced Adolescence**  credit: 2 hours.
Advanced interdisciplinary examination of current research on adolescence as a life course stage and developmental period; focuses on principal contexts of adolescents¿ lives, such as family, peers and school, and examines how experience in these contexts relates to preparation for adulthood. Designed for students with prior course work on adolescence or related topics who plan to do research, teaching, or policy work pertinent to this age period. Prerequisite: Prior course work in human development, developmental psychology or life course sociology.

HDFS 521  **Family Theories**  credit: 4 hours.
Contemporary family theories and their application in family research.

HDFS 523  **Ethnic Families**  credit: 4 hours.
Historical, social, economic, contextual (neighborhood), and subcultural factors that influence the organization and dynamics of ethnic-racial family life in the United States: family and group immigration and migration histories, acculturation, identity development, family organization, gender roles, parent-child relations, family rituals, neighborhood influences on family life and child-adolescent development, and the relationship between social class and ethnicity-race. Particular emphasis is given to qualitative studies that detail the first-hand experiences of families.

HDFS 525  **Family Interaction**  credit: 4 hours.
Observation and qualitative analysis of the family as a system; how family organization emerges, is maintained, and changes through social interaction.

HDFS 526  **Intimate Partner Violence**  credit: 2 hours.
Extent, nature, causes, and consequences of intimate partner violence in the United States. Examines the complexities of intimate partner violence, including individual, societal, and historical factors that contribute to violence, the implications of making distinctions in types of violence and perpetrators, and the relationship between institutional responses and individual decision-making. Also examines theoretical methodological and ethical issues related to violence research.

HDFS 528  **Parenting**  credit: 2 hours.
Explores how parenthood has been conceptualized and investigated in human development, family studies, and related disciplines. Major theoretical perspectives and emerging line of research will be reviewed including parental style, beliefs and cognition, identity, fathering and diverse parenting contexts. Prerequisite: HDFS 501 or HDFS 521.

HDFS 540  **Gender & Sexuality**  credit: 2 hours.
Highlights key approaches to gender and sexuality within the multidisciplinary field of family studies; examines how gender and sexuality organize the accomplishment of family life through both social structure and social performance, and their attendant historical, economic and political contexts.

HDFS 550  **Advanced Practicum in HDFS**  credit: 4 hours.
Practicum providing graduate students with supervised experience in the design, implementation, and/or evaluation of outreach programs, policy development, or consultation models designed to meet the needs of children, families and/or communities. Prerequisite: HDFS 450.

HDFS 561  **Child and Family Program Dev**  credit: 4 hours.
Theoretical and practical aspects of planned efforts to influence the development of children, youth, and families in the context of communities, particularly efforts to promote competence and well-being of children and youth, positive parenting, and well-being and adjustment of adults. Examines literature from four approaches: family life education, youth development, prevention/applied developmental science, as well as health promotion and community health.

**HDFS 562  Child & Family Program Eval**  credit: 4 hours.
Introduction of practical skills for evaluating service, intervention, and educational programs, including needs assessment, program monitoring and impact assessment, with emphasis on outcome measure selection, randomized and quasi-experimental designs, statistical power analysis, and ethical issues.

**HDFS 596  Advanced Studies in HDFS**  credit: 1 TO 4 hours.
Library or experimental research on specific problems of limited scope. May be taken in addition to 32 hours required for a master's degree by students who do not write a thesis. For non-thesis students only. May be repeated to a maximum of 4 hours.
HEBR 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

HEBR 201  Elementary Modern Hebrew I  credit: 5 hours.
Acquaints students with the fundamental principles of the Hebrew language. Develops all four language skills; reading, writing, listening and speaking. Grammar and comprehension are exercised through the textbook, the audio-visual materials and the computer. Easy stories will be used during the term to strengthen reading comprehension. Participation in the language laboratory is required.

HEBR 202  Elementary Modern Hebrew II  credit: 5 hours.
Continuation of HEBR 201, with introduction of more advanced grammar, and with emphasis on more fluency in speaking and reading. Participation in the language laboratory is required. Prerequisite: HEBR 201 or equivalent.

HEBR 205  Intensive Biblical Hebrew  credit: 5 hours.
Acquisition of reading knowledge of biblical Hebrew and a familiarity with all major aspects of biblical Hebrew grammar. Same as RLST 205.

HEBR 403  Intermediate Modern Hebrew I  credit: 4 OR 5 hours.
Advanced examination of the fundamental principles of the Hebrew language. Develops all four language skills: reading, writing, listening and speaking. Grammar and comprehension are exercised through the textbooks, the audio-visual materials and the computer. Examples of Hebrew fiction, largely easy stories, will be used during the term to strengthen reading comprehension. Participation in the language laboratory is required. 5 undergraduate hours. 4 graduate hours. Prerequisite: HEBR 202 or equivalent.

HEBR 404  Intermediate Modern Hebrew II  credit: 4 OR 5 hours.
Continuation of HEBR 403. Concentration on ability to engage in reasonable fluent discourse in Hebrew, comprehensive knowledge of formal grammar, and an ability to read easy Hebrew texts. Israeli television programs and movies are used to develop communicative skills and cultural knowledge. Participation in the language laboratory is required. 5 undergraduate hours. 4 graduate hours. Prerequisite: HEBR 402 or equivalent.

HEBR 405  Advanced Modern Hebrew I  credit: 3 hours.
For students who have mastered the fundamental principles of the Hebrew language. Develops competence through reading Hebrew fiction and studying Israeli newspapers and television programs. Communication skills are exercised by means of class discussions, oral presentations, compositions and written reports on stories. Prerequisite: HEBR 404 or equivalent.

HEBR 406  Advanced Modern Hebrew II  credit: 3 hours.
Course for advanced knowledge of spoken and written standard Modern Hebrew with emphasis on Modern Hebrew literature and language, Israeli newspapers and Israeli television programs. Communication skills are exercised by means of class discussions, oral presentations, compositions and written reports on stories. Prerequisite: HEBR 405 or equivalent.

HEBR 407  Topics Hebrew Lang & Lit I  credit: 3 hours.
Study of advanced topics in the Hebrew language, based upon a selection of Hebrew literature from either the Bible or the modern period. Historical and cultural background of the material will be stressed, together with literary analysis. In certain years, the course will be offered as a course using English translation of texts, with separate discussion section for students who want to read texts in the original. May be repeated to a maximum of 9 hours. Prerequisite: HEBR 205 or HEBR 406 or consent of instructor.

HEBR 408  Topics Hebrew Lang & Lit II  credit: 3 hours.
Study of advanced topics in the Hebrew language, based upon a selection of Hebrew literature from either the Bible or the modern period. Historical and cultural background of the material will be stressed, together with literary analysis. In certain years, the course will be offered as a course using English translation of texts, with separate discussion section for students who want to read texts in the original. May be repeated to a maximum of 9 hours. Prerequisite: HEBR 205 or HEBR 406 or consent of instructor.
HIST 100  **Global History**  credit: 3 hours.
Broad introduction to global history, by exploring the global structures and transnational forces that have shaped human history, from the emergence of agriculture and urban centers to our contemporary global village. This course can be used to fulfill either Western or Nonwestern general education categories but not both.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 101  **Global Environmental Change**  credit: 3 hours.
History of the twentieth century emphasizing globalization and environmental change. It pays particular attention to petroleum, to struggles, both international and popular, to control its sources, and to the impact of its multiple applications on agriculture and on the global commons-oceans and atmosphere. Examples will include both states who command the centers of globalization and the responses of non-Western states whose relationship with the process is more ambiguous and problematic. Same as ENVS 161 and NRES 161. This course can be used to fulfill either Western or Nonwestern general education categories but not both.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect
UIUC: Social Sciences
UIUC: Western Compartv Cult

HIST 105  **Latin America to Independence**  credit: 3 hours.
Survey of Latin American history from the discovery of America to 1824.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 106  **Modern Latin America**  credit: 3 hours.
History of the Latin American republics from their independence to the present; emphasis on Argentina, Brazil, Chile, Colombia, Cuba, and Mexico.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 110  **History of Africa**  credit: 3 hours.
Survey of the early history of the continent, nineteenth century developments, and the period of colonial occupation and independence, with particular focus on case studies from East Africa, South Africa and West Africa at the conclusion of the term.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 120  **East Asian Civilizations**  credit: 3 hours.
Surveys the three major East Asian civilizations from ancient and classical times, through the period of Western influence, political revolution, and modernization, to the contemporary age and the emergence of East Asian superpowers. Same as EALC 120. Credit is not given for both HIST 120 and EALC 135.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 130  **History of South Asia**  credit: 3 hours.
Multidisciplinary introduction to the history of modern South Asia from the consolidation of early modern state formations, the negotiation of religious, cultural and linguistic formations, European colonial interactions, and the rise of the modern nation states of Bangladesh, India, Pakistan and Sri Lanka. Same as ANTH 130.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 133  Intro to the World of Islam  credit: 3 hours.
Same as SAME 133. See SAME 133.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 135  History of Islamic Middle East  credit: 3 hours.
Introduction to fourteen centuries of Middle East history from the rise of Islam to modern times. Examines the development of Islamic thought, and of religious, social, and political institutions, as well as the transformations of the 19th and 20th centuries, in the area consisting of Egypt, the Fertile Crescent, Arabia, Turkey, and Iran.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

HIST 140  Western Civ to 1660-ACP  credit: 4 hours.
Course is identical to HIST 141 except for the additional writing component. See HIST 141. Credit is not given for both HIST 140 and HIST 141. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
UIUC: Advanced Composition

HIST 141  Western Civ to 1660  credit: 3 hours.
Fundamental developments - social, economic, cultural, intellectual, and political - in the history of mankind and Western society before 1660; includes the Greek and Roman world, the German migrations, the rise of cities and the commercial revolution, medieval art, universities, and heresies, the Renaissance and Reformation, the Puritan Revolution, and the beginnings of the modern world. Credit is not given for both HIST 141 and HIST 140.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 142  Western Civ Since 1660  credit: 3 hours.
Fundamental developments - social, economic, cultural, intellectual, and political - in the history of mankind and Western society since 1660; includes the rise of modern science, the French and Industrial revolutions, the Romantic movement, the growth of nationalism and socialism, imperialism, urbanization, the Russian Revolution, Nazi Germany, the world wars, and the West and the developing world. Credit is not given for both HIST 142 and HIST 143.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 143  Western Civ Since 1660-ACP  credit: 4 hours.
Course is identical to HIST 142 except for the additional writing component. Credit is not given for both HIST 143 and HIST 142. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
UIUC: Advanced Composition

HIST 168  A History of Judaism  credit: 3 hours.
Same as RLST 120. See RLST 120.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Advanced Composition

HIST 170  **US Hist to 1877-ACP**  credit: 4 hours.
Course is identical to HIST 171 except for the additional writing component. Credit is not given for both HIST 170 and any one of the following: HIST 171, HIST 270, or HIST 271. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
UIUC: Advanced Composition

HIST 171  **US Hist to 1877**  credit: 3 hours.
Colonial foundations, movement for independence, and early years of the republic. Credit is not given for both HIST 171 and any one of the following: HIST 170, HIST 270, or HIST 271.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 172  **US Hist Since 1877**  credit: 3 hours.
Evolution of an industrial, urbanized, and pluralistic society, grappling with domestic and global problems. Credit is not given for both HIST 172 and either HIST 173 and HIST 272.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 173  **US Hist Since 1877-ACP**  credit: 4 hours.
Course is identical to HIST 172 except for the additional writing component. Credit is not given for both HIST 173 and either HIST 172 or HIST 272. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
UIUC: Advanced Composition

HIST 174  **Black America, 1619-Present**  credit: 3 hours.
Same as AFRO 101. See AFRO 101.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

HIST 191  **Freshman Honors Tutorial**  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars and Associates. May be repeated once. Prerequisite: Consent of departmental honors advisor.

HIST 198  **Freshman Seminar**  credit: 3 TO 4 hours.
Through research, reports, and discussion in a selected field of historical study, the seminar provides a thorough understanding of the problems of that field and of the methods of history as a discipline. May be repeated to a maximum of 6 hours. Prerequisite: James Scholar standing or other designation as a superior student; consent of instructor.

HIST 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

HIST 200  **Intro Hist Interpretation**  credit: 3 hours.
Through the careful examination of a specific topic or theme this course provides a thorough introduction to historical interpretation. Particular attention will be devoted to research strategies, writing practices, handling primary and secondary sources, and the analysis of historiography. Prerequisite: A 100-level course in history or consent of instructor.

HIST 201  **Environmental History**  credit: 3 hours.
Exploration of the extent and variety of relations between people and the environment, with special emphasis on pre-capitalist land use systems, illustrated with examples from the Midwest United States, tropical Africa, and tropical South America; the impact during the nineteenth and twentieth centuries of global capitalism; and a discussion of contemporary environmental concerns, starting with questions of land use. Same as ENVS 201.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 205  Hist Latin America Thru Texts  credit: 3 hours.
Introduction to Latin American civilization from the 16th to 20th centuries through fiction, history, and political essays.

HIST 210  History North & West Africa  credit: 3 hours.
Survey of major themes and events in the history of North and West Africa from prehistoric times and the peopling of Africa through
the advent of Islam; North and West African empires and states in the medieval period; the arrival and departure of European colonial
powers; and the re-emergence of independent African states. Prerequisite: HIST 110 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 211  History East & Southern Africa  credit: 3 hours.
Survey of major themes and events from the Bantu migrations and the rise of Aksum through the development of states and empires,
Islam, the expansion of trade, European colonial rule, nationalism, and the persistence of white domination in the south. Prerequisite:
HIST 110 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 220  Traditional China  credit: 3 hours.
Historical background to the modern age, tracing the Chinese state and empire from the earliest times until 1644 A.D. Basic political,
social, and economic patterns; cultural, intellectual, and technological achievements; and China's impact on Asia and the world. Same
as EALC 220.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 221  Modern China  credit: 3 hours.
General introduction to the major themes of the Chinese Revolution from 1840 to the present, emphasizing the interplay between
politics, ideas, and culture. Themes include the tension between cultural integrity and western ideologies, between democratic
participation and the tradition of centralized control, and the representation of cultural identity in high and mass cultures. Same as EALC
221.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 222  Chinese Thght Confucius to Mao  credit: 3 hours.
Examination of China's principal philosophical, religious, and political schools of thought - such as Confucianism, Taoism, Zen
Buddhism, and Maoism - as ways of understanding one of the world's major civilizations; the period of the classical philosophers, the
glory years of empire, and the troubled era of western contact receive approximately equal attention. Same as EALC 222 and RLST
224.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 225  Southeast Asian Civilizations  credit: 3 hours.
Same as ANTH 286 and ASST 286. See ANTH 286.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 226  Premodern Japanese History  credit: 3 hours.
Introduction to the history of the Japanese people, their social and cultural systems, politics, and economy, from the earliest times to the
sixteenth century. Same as EALC 226.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
HIST 227  Modern Japanese History  credit: 3 hours.
Introduction to the history of the Japanese people, their social and cultural systems, politics, and economy, from the mid-sixteenth century to the mid-twentieth century. Same as EALC 227.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

HIST 240  History of Ancient Greece  credit: 3 hours.
Ancient empires and Greece.

HIST 241  History of Ancient Rome  credit: 3 hours.
Rome.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 245  Women & Gender Pre-Mod Europe  credit: 3 hours.
Examines the history of women and the evolution of concepts of gender in western Europe from roughly 400 to 1700. Topics include the interactions of class and ethnicity with women's experiences, the social construction of sexuality and gender, the misogynist tradition and women's self-images. Same as GWS 245 and MDVL 245.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 247  Medieval Europe  credit: 3 hours.
Failure of imperial Rome and the rise of the Church; the organization of European society on a local basis through manorialism and feudalism. Same as MDVL 247.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 250  War, Milit Insts & Soc to 1815  credit: 3 hours.
Land and naval warfare from prehistory to Napoleon; discusses traditional topics such as technology, tactics, and strategy at length and demonstrates how military institutions are integrated with society as a whole.

HIST 251  War Milit Insts Soc Since 1815  credit: 3 hours.
Land and naval warfare since Napoleon; technology, tactics, strategy, administration, and military institutions in themselves and as they relate to western and nonwestern societies; and conventional nuclear warfare. Same as GLBL 251.

HIST 252  The Holocaust  credit: 3 hours.
Exploration of the Holocaust in historical perspective by examining European anti-Semitism, political developments in Germany, the rise to power of the Nazis, and the origins of the Holocaust with first-hand accounts, films, and historical texts, concluding with the legacy of the Holocaust in the contemporary world.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 253  Enlightenment to Existentialism  credit: 3 hours.
Survey of the major authors, ideas, events, and styles in the cultural and intellectual history of Europe from the seventeenth to the mid-twentieth centuries, focusing on the intellectual traditions of France, Germany, and Great Britain.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 255  British Isles to 1688  credit: 3 hours.
Survey of the political, social and economic, religious, and cultural history of the British people from the "prehistoric" era through the revolution of 1688. Same as MDVL 255.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 256  Great Britain Since 1688  credit: 3 hours.
Survey of all significant facets - political and constitutional, social and economic, diplomatic and imperial, religious, and cultural - of the life of the people of the British Isles during the past three centuries.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 257  Vienna 1900  credit: 3 hours.
Same as GER 257 and ANTH 257. See GER 257.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 258  20thC World to Midcentury  credit: 3 hours.
Economic, social, political, and cultural developments in twentieth-century world history from late nineteenth-century to Second World War era.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 259  20thC World from Midcentury  credit: 3 hours.
Economic, social, political, and cultural developments in twentieth-century world history from Second World War era to the present.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 260  Survey of Russian History  credit: 3 hours.
Main themes and problems of Russian history from earliest times to the present.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 261  Intro Russian-Jewish Culture  credit: 3 hours.
Same as RUSS 261. See RUSS 261.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 263  US History of Medicine  credit: 3 hours.
Medicine and public health from the colonial period through the twentieth century; health care providers, patients, and public policy; incorporates issues of race and sex. Same as GWS 263.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 264  Technology in Western Society  credit: 3 hours.
Explores the role of technology as a transforming social force; examines innovations from the stirrup and heavy plow to the airplane and computer, that restructured economic and political life and realigned values; examines cultural representations of technology.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 265  Science in Western Civ I  credit: 3 hours.
Intellectual and social history of science from antiquity through the Enlightenment; special emphasis on the scientific revolution of the seventeenth century.
This course satisfies the General Education Criteria for a:
HIST 266  Science in Western Civ II  credit: 3 hours.
Topics in the intellectual and social history of modern science, 1789 to the present.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 267  The World of Jewish Sepharad  credit: 3 hours.
Same as ANTH 275 and RLST 275. See ANTH 275.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 268  Jewish History to 1700  credit: 3 hours.
Examination of the Jewish past from its beginnings to the dawn of the modern age. Explores the place of Jewry in ancient, Islamic and
Christian societies, as well as internal changes in Jewish culture and society. Same as RLST 268.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 269  Jewish History Since 1700  credit: 3 hours.
Explores how life was lived by Jewish women and men through the past three centuries. Will also focus on wider place of the Jews in
European society, and the achievements and tragedies of the modern Jewish-non-Jewish relationship. Same as RLST 269.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 270  United States History to 1815  credit: 3 hours.
Social, economic, and political survey of the region and its relation to the evolving Atlantic community. Credit is not given for both HIST
270 and either HIST 170 or HIST 171.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 271  Nineteenth Century America  credit: 3 hours.
History of the United States from 1815 to 1900. Credit is not given for both HIST 271 and either HIST 170 or HIST 171.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 272  Twentieth Century America  credit: 3 hours.
One major emphasis on foreign policy, including the emergence of the United States as a great power after 1898; a second emphasis
on the Progressive movement and recurrent attempts at the reform of American society; and racial and urban problems and the
conservation of natural resources included. Credit is not given for both HIST 272 and either HIST 172 or HIST 173.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HIST 273  Illinois History  credit: 3 hours.
History of Chicago and Illinois from prehistoric times to the present, illustrating the jarring conflicts and great achievements of peoples
from all over the world. Politics, economics, popular and high culture, education, mass media, racial problems, and ethnic diversity are
especially featured. There is an emphasis on the relation of city, state, and region to one another.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

HIST 274  US & World Since 1917  credit: 3 hours.
History of American foreign relations since World War I.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

HIST 275  Afro-American History to 1877  credit: 3 hours.
History of Africans in the Americas, surveying the African slave trade, slavery in the European colonies of the Americas, early United States slavery, and the Afro-American in the Civil War and Reconstruction. Same as AFRO 275.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

HIST 276  Afro-American Hist Since 1877  credit: 3 hours.
History of Afro-Americans in the age of white supremacy; the rise of modern protest organizations; the era of integration; and the black power movement. Same as AFRO 276.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

HIST 277  US Native Americans to 1850  credit: 3 hours.
Survey of the Native American experience in North America from the arrival of Europeans to 1850. Explores the impact of European expansion on Native American communities, the ways in which Native American people adapted to the growing European presence, and the continuities and innovations that distinguished the indigenous world in this era. Focuses primarily on those parts of North America that became part of the United States. Same as AIS 277.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

HIST 278  US Native Americans Since 1850  credit: 3 hours.
Overview of the Native American experience in the United States from 1850 to the present. Using lectures, classroom discussions, visual presentations and group projects, the course will explore the major events that altered the environment Native Americans inhabited following the establishment of the United States as a continental power. Course will also examine the ways in which native peoples survived amidst the economic, political, and social forces that were unleashed by the country’s evolution into a modern nation state. Readings will include primary documents, Native American commentaries, historical fiction, and secondary works. Same as AIS 278.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

HIST 279  Mexican-American History  credit: 3 hours.
Examination of the history of Mexican Americans living within the United States from the Spanish Conquest to the twentieth century. Explores the process of migration, settlement, assimilation, and discrimination with emphasis on continuity and change in Mexican cultural development. Same as LLS 279.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

HIST 280  Caribbean Latina/o Migration  credit: 3 hours.
Study of the economic, political, and social forces which shaped migration settlement and community formation of Puerto Ricans, Cubans, and Dominicans living in the United States. Same as LLS 280.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

HIST 281  Constructing Race in America  credit: 3 hours.
Interdisciplinary examination of the historical, cultural, and social dimensions of race and ethnicity in the United States. Explores the complex and intricate pursuit of multiracial and multicultural democracy. Same as AAS 281, AFRO 281, and LLS 281.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)
HIST 282  **Nature and American Culture**  credit: 3 hours.
Same as LA 242, NRES 242, and RST 242. See RST 242.
This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

HIST 283  **Asian American History**  credit: 3 hours.
Exploration of the migrations of peoples from the Asian continent into the United States, their attempts to build family and community, and their subsequent impact on American history. Same as AAS 283.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

HIST 284  **Af Am Urban Hist Since 1917**  credit: 3 hours.
Same as AFRO 290. See AFRO 290.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

HIST 285  **US Gender History to 1877**  credit: 3 hours.
Traces the experiences of North American women and men from the earliest encounters between Europeans and Native Americans; examines gender systems in the colonies, under slavery, during industrialization and westward expansion; assesses impact of the Civil War and Reconstruction on gender roles; considers gendered division of labor in factories and domestic environments and construction of gender ideologies. Same as GWS 285.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

HIST 286  **US Gender History Since 1877**  credit: 3 hours.
Examines the experiences of women and men in modern America, focusing on variations according to class, race, ethnicity, religion, region, and sexual preference; considers the impact of social movements on gender politics; gender and the wars of the 20th century; gender, reform, and social welfare policy; and the place of popular culture in the production of gender ideologies. Same as GWS 286.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

HIST 287  **African-American Women**  credit: 3 hours.
Examines the history of African American women, beginning with the West African background during the transatlantic slave trading era, emphasizing the experiences of black women in the United States during slavery and their political, civic, community and reform activities from slavery to the present, analyzed within the context of racism, sexism, and economic deprivation. African women in the diaspora, and the impact of feminism/womanism, Afrocentrism, and multicultural diversity on the African American woman are considered. Same as AFRO 287 and GWS 287.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

HIST 288  **American Indians of Illinois**  credit: 3 hours.
Same as ANTH 288 and AIS 288. See ANTH 288.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

HIST 289  **History of Religion in America**  credit: 3 hours.
Same as RLST 235. See RLST 235.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

HIST 290  **Religion, Violence & America**  credit: 3 hours.
Same as RLST 236. See RLST 236.
This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult
HIST 291  History of the Bible  credit: 3 hours.
Same as RLST 203. See RLST 203.

HIST 295  Honors Colloquium  credit: 3 hours.
Topics will vary. Prerequisite: Chancellor's Scholar or consent of department and director of Campus Honors Program.

HIST 300  Topics in Film and History  credit: 3 hours.
Examines films as a significant medium of commentary on society and history. Explores the motives and careers of moviemakers, the ways in which films are influenced by their audiences, and how audiences' perception of historical processes are affected by films. Topics will vary. Same as CINE 300. May be repeated to a maximum of 6 hours if topics vary. Students may register in more than one section per term. May be repeated to a maximum of 6 hours. Prerequisite: A course in History and/or a course in Cinema Studies.

HIST 302  Religious & Messianic Mvmnts  credit: 3 hours.
Comparative study of revolutionary religious movements from ancient times to the present. Same as RLST 368.

HIST 305  Andean Countries of S America  credit: 3 hours.
The history of Colombia, Ecuador, Peru, Bolivia, and Chile; emphasizes common problems and diverse responses, from the conquest in the sixteenth century to the struggles for development in the twentieth. Prerequisite: One year of college history or consent of instructor.

HIST 306  History of Central America  credit: 3 hours.
Major themes of Central American history since conquest: the Colonial regime, ethnic diversity, the independence movement, fragmentation in the nineteenth century, export economies and imperialism, 1880-1932, social movements and populism in the twentieth century, revolution and intervention since the 1950s. Prerequisite: One year of college history or consent of instructor.

HIST 325  History of Korea  credit: 3 hours.
Same as EALC 367. See EALC 367.

HIST 340  Ancient Greek States  credit: 3 hours.
History of the Greek states from the earliest times to 334 B.C. Prerequisite: One year of college history or consent of instructor.

HIST 341  Alexander and His Successors  credit: 3 hours.
Prerequisite: One year of college history or consent of instructor.

HIST 344  Spirituality and Experience  credit: 3 hours.
Same as ARTH 369, CWL 369, MDVL 369, and RLST 369. See ARTH 369.

HIST 345  Medieval Civilization  credit: 3 hours.
The architectural, artistic, philosophical, political, and religious components of medieval culture, thought, and patterns of behavior; includes monasticism and society and the individual. Same as MDVL 345 and RLST 345. Orerequisite: Sophomore standing or consent of instructor.

HIST 346  The Age of the Renaissance  credit: 3 hours.
Same as MDVL 346 and RLST 346. Prerequisite: One year of college history.

HIST 347  Protestant & Catholic Refs  credit: 3 hours.
Same as RLST 347. Prerequisite: One year of college history.

HIST 348  Early Euro Absolut & Expansion  credit: 3 hours.
Prerequisite: One year of college history or consent of instructor.

HIST 349  French Revolution & Napoleon  credit: 3 hours.
Comparative survey of Western countries in the age of democratic upheavals; America, England, and Prussia as well as France; the rise of Napoleon and the response of Europe; and the fate of innovation and reform in the immediate aftermath of the Napoleonic Wars. Prerequisite: One year of college history or consent of instructor.

HIST 350  European History 1815 to 1871  credit: 3 hours.
Synthesis of politics, economics, and culture; revolutions, reaction, liberalism, conservatism, socialism, nationalism, romanticism, and realism. Prerequisite: One year of college history or consent of instructor.
HIST 351  European History 1871 to 1918  credit: 3 hours.
Synthesis of politics, economics, and culture; new state systems, long depression, imperialism, racism, nationalism, symbolism, fin de siecle, socialism, and World War I. Prerequisite: One year of college history or consent of instructor.

HIST 352  Europe in the World Since 1750  credit: 3 hours.
Colonial encounters between Europe and today's Third World viewed in comparative historical perspective. Equal emphasis placed on (colonizing) Europe, and colonial experience of Asia, Africa, and South America. Prerequisite: One year college level history.

HIST 353  European History 1918 to 1939  credit: 3 hours.
Survey of European society from 1918 to 1939, with emphasis on the impact of World War I, the Russian Revolution, fascism, and the intellectual trends of the twenties and thirties. Prerequisite: One year of college history or consent of instructor.

HIST 354  European History Since 1939  credit: 3 hours.
Survey of European society since 1939, with emphasis on the impact of World War II, the cold war, the establishment of the welfare state, and social developments. Prerequisite: One year of college history or consent of instructor.

HIST 359  Euro Thght from Ren to Enlight  credit: 3 hours.
Explores the key intellectual debates in Europe from c. 1400 to c. 1780: A period of dramatic transition from the medieval world, dominated by the outlook of the Catholic Church, to the scientific and rationalist assumptions of the Enlightenment. Prerequisite: One course in history.

HIST 361  Euro Thght & Soc Since 1789  credit: 3 hours.
Examines the reciprocal relationship between thought and society in western Europe from the French Revolution to the present. Same as SOC 368. Prerequisite: SOC 200 or one year of college history; or consent of instructor.

HIST 363  Scientific Thought I  credit: 3 hours.
Same as PHIL 317. See PHIL 317.

HIST 365  Fict & Historical Imagination  credit: 3 hours.
Explores the relationship between history and fiction by focusing on four cultural locations: the antebellum American South, early 20th century Ireland, India in 1947, and immigration in 20th century America. Prerequisite: One year of college history.

HIST 366  Scientific Thought II  credit: 3 hours.
Same as PHIL 318. See PHIL 318.

HIST 367  History of Western Medicine  credit: 3 hours.
Rise and development of medicine in the West since the sixteenth century; interrelations of physiology, pathology, and social demands with the theory and practice of medicine; pattern of professionalization; social role of the physician; conflict among ideas of medicine as an art, a science, and a social service; and problems of mental illness, medical ethics, and nontraditional forms of practice. Prerequisite: One year of college biology or chemistry, one year of college history, or consent of instructor.

HIST 369  History of Spain and Portugal  credit: 3 hours.
Iberian history from pre-Roman times to the present with emphasis on the modern period. Prerequisite: One year of college history or consent of instructor.

HIST 370  US Colonial History  credit: 3 hours.
Study of the seventeenth- and eighteenth-century colonies to 1763. Prerequisite: One year of college history or consent of instructor.

HIST 371  The American Revolution  credit: 3 hours.
Prerequisite: One year of college history.

HIST 372  America's Republic, 1789-1861  credit: 3 hours.
A study of America's embracing of a republican form of government and the invention of a republican culture. Course concludes with the role that form of government and culture played in promoting civil war in America. Prerequisite: One year of college history.

HIST 374  Civil War and Reconstruction  credit: 3 hours.
The United States' civil war (1861-1865) and the years of postwar "reconstruction" (conventionally dated as 1865-1877). During this period as a whole, the nation underwent its second revolution -- a revolution more radical in its impact than the one that freed it from the British Empire. Much about U.S. history for the next century and more was decided during these critical years.

HIST 375  Soc History Indus Am to 1918  credit: 3 hours.
The impact of industrialization, immigration, and urbanization on American society to the end of World War I. Prerequisite: One year of college history.

HIST 376  Soc History Indus Am from 1918  credit: 3 hours.
Study of the impact of industrial technology, business enterprise, immigration, and urbanization on American society. Prerequisite: One year of college history or consent of instructor.

HIST 377  United States Since 1932  credit: 3 hours.
Discusses the New Deal, the Cold War, Franklin D. Roosevelt and subsequent presidents, the structure of American imperialism, and America's role in world politics. Prerequisite: One year of college history, political science, or economics.

HIST 378  La Latina  credit: 3 hours.
History of Latina women in the United States, emphasizing Chicanas, Puertorriquenas and Cubanas. Examination of Latina women's histories largely through their own writings, emphasizing the 20th century and how gender, labor and nation shape Latina histories. All course readings are in English. Same as LLS 378. Prerequisite: One course in History, Latina/Latino Studies or Gender and Women's Studies.

HIST 379  Latina/os and the City  credit: 3 hours.
Same as LLS 379. See LLS 379.

HIST 383  Hist of Blk Women's Activism  credit: 3 hours.
Same as AFRO 383 and GWS 383. See AFRO 383.

HIST 384  Class Politics & Blk Community  credit: 3 hours.
Same as AFRO 372. See AFRO 372.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

HIST 389  Race and Revolutions  credit: 3 hours.
Same as AFRO 378. See AFRO 378.

HIST 396  Special Topics  credit: 3 hours.
Topics are given on an experimental one-time-only basis.

HIST 399  Non-Honors Independent Study  credit: 1 TO 3 hours.
Readings in selected fields in consultation with the instructor resulting in a 20-30 page paper. Prerequisite: Junior or senior standing pursuing a History major; written consent of instructor and History undergraduate advisor required.

HIST 400  Adv Studies War, Soc & Culture  credit: 1 TO 4 hours.
Part of the joint program, Studies in War, Society, and Culture, run between the departments of history at Illinois and Ohio State University. Instruction involves video conference and face-to-face sessions with Illinois and Ohio State faculty under the direction of Illinois history faculty. Topics vary. May be repeated. 1 to 3 undergraduate hours or 2 to 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Undergraduates: HIST 250 or HIST 251, and consent of instructor. Graduates: Consent of instructor.

HIST 401  History of Terrorism  credit: 3 OR 4 hours.
Examination of the history of Terrorism, from ancient strategies of terror used by states at war to modern terrorist attacks by individuals, such as Timothy McVeigh, and groups, such as Al Qaeda. Terrorism will be analyzed as a form of warfare to be compared and contrasted with conventional and guerrilla conflicts. Students will be asked to examine historical examples of Terrorism and to consider what they tell us about the threat of Terrorism today. 3 undergraduate hours. 4 graduate hours.

HIST 405  History of Brazil from 1808  credit: 2 TO 4 hours.
Problems of a neocolonial society; themes include family structure, slavery, imperialism, modernization, and the crisis of traditional institutions. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 406  History of Mexico from 1519  credit: 2 TO 4 hours.
Development of Mexico from the conquest to the postrevolutionary present. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 407  Slavery & Race in Latin Am  credit: 2 TO 4 hours.
Selected topics on Indians and Spaniards, whites and blacks, emphasizing Mexico, the Caribbean, and Brazil. Same as AFRO 407. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.
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<td>HIST 408</td>
<td>Four Lat Am Political Ideas</td>
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<td>transformations. Same as LAST 476. 3 undergraduate</td>
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<td>hours. 2 or 4 graduate hours. Prerequisite: One</td>
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<td></td>
<td>year of history or social science.</td>
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<td>HIST 409</td>
<td>Latin American Ethnobotany</td>
<td>3 OR 4</td>
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<td></td>
<td>Same as ANTH 401 and LAST 401. See LAST 401.</td>
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<td>HIST 410</td>
<td>20thC Africa Colonial Era</td>
<td>3 OR 4</td>
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<td></td>
<td>The peoples, cultures, and societies of Africa</td>
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<td></td>
<td>under European colonial dominance. Although</td>
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<td></td>
<td>attention is paid to colonial policies and</td>
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<td>practices, the primary focus is on the continuing</td>
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<td>autonomy of African peoples. Special attention</td>
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<td>will be given to the cases of Ethiopia and South</td>
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<td>Africa. 3 undergraduate hours. 4 graduate hours.</td>
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<td></td>
<td>Prerequisite: HIST 210, HIST 211, or AFST 222,</td>
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<td></td>
<td>junior standing.</td>
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<td>HIST 411</td>
<td>Africa 1945 to the Present</td>
<td>2 TO 4</td>
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<td></td>
<td>Historical investigation of African political</td>
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<td>economies based on selected case studies;</td>
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<td></td>
<td>includes development of the colonial economy,</td>
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<td>economic bases of African nationalism, and</td>
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<td>postindependence underdevelopment and attempts</td>
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<td>to escape from it. 3 undergraduate hours. 2 or 4</td>
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<td></td>
<td>graduate hours. Prerequisite: One year of college</td>
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<td>history or enrollment in the African Studies</td>
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<td>program.</td>
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<td>HIST 412</td>
<td>Southern Africa Race &amp; Power</td>
<td>3 OR 4</td>
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<td></td>
<td>Interdisciplinary survey of both the internal</td>
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<td>and international dimensions of the changing</td>
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<td>situation in Africa south of the Zambezi;</td>
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<td>focuses on the historical background to, and a</td>
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<td></td>
<td>political, economic, and social analysis of</td>
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<td></td>
<td>current events in the Republic of South Africa,</td>
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<td></td>
<td>Mozambique, Namibia, and Zimbabwe, emphasizing</td>
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<td></td>
<td>the central significance of race and power in</td>
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<td></td>
<td>this region. Same as AFST 425. 3 undergraduate</td>
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<td></td>
<td>hours. 4 graduate hours. Prerequisite: HIST 211</td>
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<td></td>
<td>or AFST 222.</td>
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<td>HIST 413</td>
<td>The Horn of Africa</td>
<td>3 OR 4</td>
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<td></td>
<td>Complete survey of the history of the Horn, from</td>
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<td>the origins of agriculture and pastoralism to the</td>
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<td></td>
<td>late twentieth century. Covers classical Aksum,</td>
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<td>medieval Ethiopia, and the coastal Islamic city</td>
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<td>states; concentrates on the twentieth century and</td>
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<td>the rise of conflicting nationalisms, the</td>
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<td></td>
<td>outbreak of revolution, and famine. 3 undergraduate</td>
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<td></td>
<td>hours. 4 graduate hours. Prerequisite: HIST 211</td>
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<td>or AFST 222 or junior standing.</td>
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<td>HIST 420</td>
<td>China Under the Qing Dynasty</td>
<td>2 TO 4</td>
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<td>The period of Manchu domination in China (1644-1912); emphasis on Chinese reactions to Western influences during the nineteenth century. Same as EALC 420. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.</td>
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<td>HIST 422</td>
<td>Soc-Econ Hist Modern China</td>
<td>2 TO 4</td>
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<td></td>
<td>Disintegration of traditional social and economic</td>
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<td>systems during the nineteenth and twentieth</td>
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<td>centuries, and the political effects of that</td>
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<td>disintegration; examines changes in the</td>
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<td>agricultural economy, changing rural elites,</td>
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<td>urbanization, and emergence of new social classes.</td>
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<td>It is recommended that students take HIST 420 before registration in HIST 422. Same as EALC 421. 3 undergraduate hours. 2 or 4 graduate hours.</td>
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<td>HIST 425</td>
<td>Classical Chinese Thought</td>
<td>3 OR 4</td>
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<td></td>
<td>Same as CWL 478 and EALC 476. See EALC 476.</td>
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<td>HIST 426</td>
<td>Early Modern Japan</td>
<td>3 OR 4</td>
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<td></td>
<td>Study of the people, culture, and society from</td>
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<td>1600 to 1868. Traces the rise of Japan's first</td>
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<td>truly national culture. Same as EALC 426. 3</td>
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<td>undergraduate hours. 4 graduate hours.</td>
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<td>HIST 427</td>
<td>Twentieth-Century Japan</td>
<td>3 OR 4</td>
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<td>Study of the people, culture, and society of</td>
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<td></td>
<td>Japan from 1868 to the present. Traces Japan's</td>
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<td></td>
<td>transformation from an insular bastion of</td>
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<td>&quot;centralized feudalism&quot; into a cross-cultural</td>
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<td>crucible of post-industrial democracy. Same as</td>
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<td>EALC 427. 3 undergraduate hours. 4 graduate</td>
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<td></td>
<td>hours. Prerequisite: One course in Japanese</td>
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<td>history: EALC 250, HIST 120, HIST 226, or HIST</td>
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<td>227, graduate standing, or consent of instructor.</td>
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<td>HIST 430</td>
<td>India from Colony to Nation</td>
<td>2 TO 4</td>
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<td>Mughal Empire and British Raj, Indian national</td>
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<td>awakening, and struggle for independence under</td>
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<td></td>
<td>Ghandi and Nehru. 3 undergraduate hours. 2 or 4</td>
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<td></td>
<td>graduate hours.</td>
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<td>HIST 432</td>
<td>History of Early Judaism</td>
<td>3 hours.</td>
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<td>Same as RLST 442. See RLST 442.</td>
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<td>HIST 433</td>
<td>History of Jews in Diaspora</td>
<td>3 OR 4</td>
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Deals with the history of the Jewish people from the destruction of the Jewish state by Rome to the reestablishment of a Jewish state in 1948. The emphasis is on the interaction between the Jewish and non-Jewish worlds as well as changes internal to the Jewish communities. Same as RLST 434. 3 undergraduate hours. 4 graduate hours.

HIST 434 Women in Muslim Societies credit: 3 OR 4 hours.
Same as ANTH 403, GLBL 403, GWS 403, and RLST 403. See RLST 403.

HIST 435 Middle East 1566-1914 credit: 3 OR 4 hours.
Political, social, cultural, and ideological developments in Egypt, Arabia, the Fertile Crescent, Iran and Turkey from the mid 16th century to the eve of World War I. Premodern society and institutions, the question of "decline" and "awakening", encounters with Europe and self-strengthening reforms, relations between Muslims, Christians, and Jews, the role of women and the family, and class formations. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college history or social science, or consent of instructor.

HIST 436 Jewish Life-Writing credit: 3 OR 4 hours.
Same as CWL 421, RLST 420, SLAV 420, and YDSH 420. See YDSH 420.

HIST 437 Middle East in 20th Century credit: 2 TO 4 hours.
Political and ideological developments in Egypt, Arabia, the Fertile Crescent (including Israel), Iran, and Turkey from World War I to the present, with emphasis on the period to the 1960s; economic, social, and cultural trends in the region also addressed. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or political science, or consent of instructor. HIST 135 is recommended.

HIST 438 Egypt Since World War I credit: 2 TO 4 hours.
Examines the twentieth-century history of Egypt, emphasizing the internal social, political, economic, and ideological developments, with attention to Egypt's role in regional and international politics. Readings include novels and short stories to introduce students to modern Egyptian culture. Same as AFST 437. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 439 The Ottoman Empire credit: 2 TO 4 hours.
Economy, society, law, and government; the Ottomans and Mediterranean society; Ottoman culture and Islamic tradition; minorities; trade, diplomacy, and capitulations; "decline" and dismemberment; and traditional and westernizing attempts at revival. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 440 Roman Republic to 44 B C credit: 3 OR 4 hours.
Prerequisite: One year of college history or consent of instructor.

HIST 441 The Roman Empire credit: 3 OR 4 hours.
Prerequisite: One year of college history or consent of instructor.

HIST 442 Roman Law and Legal Trad credit: 3 OR 4 hours.
Examines Roman law and legal tradition in the context of historical, political, and social developments; origins of law in primitive and ancient classical societies; surveys development of precedent, codification, and preservation of Roman law, and the impact of Roman law on western legal traditions. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college history, political science, or classical civilization; or consent of instructor.

HIST 443 Byzantine Empire AD 284-717 credit: 3 OR 4 hours.
Examination of the political, social, economic, military, institutional, religious and cultural development of the early Byzantine Empire from the reign of Diocletian (AD 284-305) through the Heraclian Dynasty (AD 610-717). Same as MDVL 443. 3 undergraduate hours. 4 graduate hours. Prerequisite: A year of college history or consent of instructor.

HIST 444 European Education to 1600 credit: 2 OR 3 hours.
Same as EPS 403 and MDVL 403. See EPS 403.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
UIUC: Advanced Composition

HIST 445 Medieval England credit: 2 TO 4 hours.
Economic, intellectual, religious, and social developments as reflected in the art and architecture of medieval England from the time of the German invasions to about the fifteenth century. Same as MDVL 444. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: Sophomore standing or consent of instructor.

HIST 446 England Under Tudors 1485-1603 credit: 3 OR 4 hours.
Politics, religion, and society in the era of the Protestant Reformation. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 447  Britain Stuart Age 1603-1688  credit: 3 OR 4 hours.
Politics, religion and society in 17th-century Britain. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 448  Victorian Britain  credit: 2 TO 4 hours.
History of the political, constitutional, social, economic, and diplomatic developments of the United Kingdom, including Ireland. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history.

HIST 449  Modern Britain Since 1900  credit: 2 TO 4 hours.
History of the political, constitutional, social, economic, and diplomatic developments of the United Kingdom, including Ireland. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history.

HIST 450  European Working Class History  credit: 2 TO 4 hours.
Comparative study of the rise of the working class in European countries; formation, culture, and daily life; stratification within the working class; workers in organized labor and revolutionary movements. Same as LIR 450 and SOC 422. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 451  Industrial Rev in Europe  credit: 2 TO 4 hours.
Comparative analytic study of industrial development in England, France, Germany, and Russia; social, cultural, and demographic consequences of rapid economic change. 3 undergraduate hours. 2 or 4 graduate hours.

HIST 452  War & Soc in Eur 1450-1815  credit: 3 OR 4 hours.
Technology, tactics, operations, and strategy of warfare from the Renaissance through the Napoleonic Era; the impact of war and military institutions upon economics, society, and government; topics vary. 3 undergraduate. 4 graduate hours. Prerequisite: HIST 250, HIST 251, HIST 347, HIST 348, or HIST 349, or consent of instructor.

HIST 455  France 1815-1920  credit: 2 TO 4 hours.
The development of France, with special attention to questions of social history. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 456  Twentieth-Century Germany  credit: 3 OR 4 hours.
Political upheavals of twentieth-century Germany; topics include the First World War's impact on German society, the war's revolutionary aftermath, the political struggles and cultural achievements of the Weimar Republic, the rise of Hitler, the Third Reich, the Holocaust, the Second World War, and the divided postwar Germanies; novels and films complement readings. 3 undergraduate hours. 4 graduate hours. Prerequisite: HIST 142.

HIST 457  European Education since 1600  credit: 2 OR 3 hours.
Same as EPS 404. See EPS 404.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
UIUC: Advanced Composition

HIST 458  Christians and Jews 1099-1789  credit: 3 OR 4 hours.
Same as RLST 458. See RLST 458.

HIST 459  Postcolonial/Queer  credit: 3 OR 4 hours.
Same as GWS 459. See GWS 459.

HIST 460  Russia to Peter the Great  credit: 2 TO 4 hours.
Political, economic, cultural, and social development of Russia during the Kievan and Muscovite periods. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 461  Russia- Peter the Great to Rev  credit: 2 TO 4 hours.
Culture, society, and politics in Imperial Russia, focusing on power and resistance, the lives and culture of ordinary Russians, and competing ideas about the state, the individual, community, nation, religion, and morality. 3 undergraduate hours. 2 or 4 graduate hours. For higher credit, graduate students will be required to do more reading and to write an additional paper. Prerequisite: One year of college history or consent of instructor.

HIST 462  Soviet Union Since 1917  credit: 2 TO 4 hours.
Political, social, and economic development of the USSR since the 1917 revolutions that brought the Bolsheviks to power; social change and social engineering; political struggles among Stalin and his rivals; the "Stalin revolution" from above and economic modernization; the USSR's emergence through World War II and the Cold War as a world power; "developed socialist" society. 3 undergraduate hours. 2 or 4 graduate hours. Graduate students will write an additional substantial paper and engage in special discussion sections. Prerequisite: One year of college history or consent of instructor.

HIST 465 History of Biology credit: 2 TO 4 hours.
Development of biological thought from antiquity to the present, emphasizing evolutionary theory and physiology in the nineteenth century and genetics in the twentieth century. Same as IB 494. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college biology or history, or consent of instructor.

HIST 466 Southeastern Europe credit: 3 OR 4 hours.
The political, economic, and cultural development of the Rumanians, South Slavs, Greeks, and Albanians; the impact of Ottoman rule; the rise of nationalism and the formation of national states; and the Orthodox Church. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 467 Eastern Europe credit: 3 OR 4 hours.
The political, economic, and cultural history of Poland, Czechoslovakia, Hungary, Rumania, Yugoslavia, Bulgaria, Greece, and Albania; particular emphasis upon the post-World War II era. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 469 Women, Autobiography & History credit: 3 OR 4 hours.
The study of women's autobiography as a historical source which can offer us glimpses of the past not available in traditional historical narratives. We will also ask what counts as an autobiography by reading a family history, a novel, and a collection of letters alongside more recognizable autobiographies, in order to tackle questions about the limits of the genre as an historical archive. Same as GWS 469. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college history.

HIST 470 Plantation Soc in Americas credit: 3 OR 4 hours.
Same as AFRO 453. See AFRO 453.

HIST 471 History of American Families credit: 3 OR 4 hours.
Overview of family life in the United States from colonial times to the present. History of childhood and adolescence, dating and courtship, sex and reproduction, husband-wife relations, female-headed households, and aging. Major transformations in family structure and authority patterns, and consequences of those transformations. Same as HDFS 421. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college history.

HIST 472 Immigrant America credit: 3 OR 4 hours.
History of immigration and immigrant groups in the United States from 1830 to 1980. Covers major waves of immigration and focuses on the diverse cultural heritage, social structure, and political activism of immigrants from Europe, the Americas, and Asia. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college American history or consent of instructor.

HIST 473 Crises of Political Tolerance credit: 2 TO 4 hours.
Investigates the character of American political tolerance and freedom in times of crisis, through a series of case studies: images of the American "enemy"; the Red Scare after World War I; the internment of Japanese-Americans in World War II; McCarthyism; and the resentments generated by protest movements in the late 1960's. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history.

HIST 474 War on Home Front 20thC Am credit: 2 TO 4 hours.
Explores the domestic ramifications of war in modern America through a comparison of the U.S. home front experience in the "total" wars of World War I and World War II and "limited" wars in Korea, Vietnam, and the Persian Gulf. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history.

HIST 475 US Pub Health & Health Policy credit: 3 OR 4 hours.
American public health and health policy since the late-nineteenth century. Emergence of modern public-health institutions in America; relation of public health to conceptions of disease, social order, and the role of government; emergence and development of public policy issues in public health and medical care, of the environment for the formulation of policy, and the relation of policy to broader issues of social development, incidence of disease, and assumptions about the proper distribution of public and private responsibility. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 476 History of the American West credit: 3 OR 4 hours.
Examines the changing image of the American West by focusing on the process of conquest and resistance present within the region's history. Same as LLS 475. 3 undergraduate hours. 4 graduate hours. Prerequisite: One semester of U.S. history or consent of instructor.
HIST 477  **The South in American History**  credit: 2 TO 4 hours.
Exploration of the history of the American South identifying and explaining differences between the South and the rest of the nation; examines the correlates of economic change in the realms of politics, social structure, and cultural values. Race relations provides a central theme of the course. Same as AFRO 476. 3 undergraduate hours. 2 or 4 graduate hours.

HIST 478  **Black Freed Move, 1955-Present**  credit: 3 OR 4 hours.
Same as AFRO 474. See AFRO 474.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

HIST 479  **US Intel & Cultr Hist to 1865**  credit: 2 TO 4 hours.
Examines the role of religious, scientific, political, social, educational, and artistic thought and institutions in shaping a distinctive American culture, emphasizing Puritanism, the Enlightenment, and the Romantic movement. Same as RLST 478. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 480  **US Work Class Hist Since 1780**  credit: 2 TO 4 hours.
Focuses on working class formation, culture, ideas, and organization; examines daily experience of work and community life; special emphasis on race, ethnicity, and gender in the process of class formation; labor relations and the changing patterns of working class protest and accommodation. Same as LIR 480. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college level history or consent of instructor.

HIST 481  **US Intel Cultr Hist from 1859**  credit: 2 TO 4 hours.
Treats the leading intellectual and cultural influences in shaping modern and contemporary America, emphasizing the impact of Darwinism and naturalistic thought, science and technology, the American university, divisions in religious thought (Modernism, Fundamentalism, Neo-Orthodoxy), the Counterculture, and the New Conservatism. Same as RLST 479. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 482  **Slavery in the United States**  credit: 3 OR 4 hours.
Same as AFRO 460. See AFRO 460.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

HIST 483  **Race & Science**  credit: 3 OR 4 hours.
Same as AFRO 466. See AFRO 466.

HIST 484  **American Legal History**  credit: 3 OR 4 hours.
Same as LAW 688. See LAW 688.

HIST 485  **History of American Indian Law**  credit: 3 hours.
Introduction to the history of the American Indian struggle for justice within the legal systems of the United States. Traces events and major courtroom disputes from the era of the American Revolution to the present. Prerequisite: One year of College history or consent of instructor.

HIST 486  **Revivalism and Evangelicalism**  credit: 3 OR 4 hours.
Same as RLST 435. See RLST 435.

HIST 490  **Honors Independent Study**  credit: 3 hours.
Readings in selected fields in consultation with the instructor. 3 undergraduate hours. No graduate credit. May be repeated to a maximum of 6 hours. Each 3-hour class must be taken with a different instructor. Prerequisite: Junior or senior of high standing; written consent of the honors adviser.

HIST 492  **Historiography and Methodology**  credit: 3 hours.
Introduction to historiography and research methods preparatory to senior honors work in history. 3 undergraduate hours. No graduate credit. Prerequisite: A grade-point average of 3.5 or higher; junior standing; two semesters honors work in history or equivalent. Sophomores must obtain consent of department.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

HIST 493  **Honors Senior Thesis**  credit: 3 hours.
Two-term research project. 3 undergraduate hours. No graduate credit. Must be repeated for a total of 6 hours. Prerequisite: History major with senior standing and 3.5 grade-point average; written consent of supervising professor and honors advisor. HIST 492 is required before HIST 493 may be undertaken. May be taken by honors students in partial fulfillment of department honors requirement.

HIST 495  **Honors Seminar**  credit: 3 hours.
Special topics course for students pursuing honors in the history major. Prerequisite: HIST 200. May be repeated to a maximum of 6 hours. 3 undergraduate hours. No graduate credit.

HIST 498  **Research and Writing Seminar**  credit: 3 hours.
3 undergraduate hours. No graduate credit. Prerequisite: Junior standing and HIST 200; 14 hours in history, or, with consent of instructor, 14 hours in the social sciences and/or humanities.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

HIST 500  **Problems in Military History**  credit: 4 hours.
HIST 501  **Seminar in Military History**  credit: 4 hours.
Prerequisite: Consent of instructor.

HIST 502  **Prob in Comparative History**  credit: 4 hours.
Intensive comparative examinations of particular issues in the histories of multiple countries, cultures or periods; emphasizes methodology, the discipline of comparative history, and the nature of historiography in a cross-cultural and interdisciplinary context. May be repeated to a maximum of 12 hours.

HIST 503  **Prob in Comp Women's Hist**  credit: 4 hours.
Examines major works in global women’s history from about 1700 to 1950. Introduces students to major themes in women’s history as well as major historiographical debates. Same as GWS 501.

HIST 504  **Seminar in History of Science**  credit: 4 hours.
HIST 505  **Seminar in History of Medicine**  credit: 4 hours.
HIST 506  **Sem in Sci, Tech, Info and Med**  credit: 4 hours.
Same as SOC 570. See SOC 570.

HIST 507  **Prob in Latin American Hist**  credit: 4 hours.
HIST 508  **Seminar in Latin American Hist**  credit: 4 hours.
HIST 510  **Problems in African History**  credit: 4 hours.
Same as AFST 510.

HIST 511  **Seminar in African History**  credit: 4 hours.
Same as AFST 511. Prerequisite: One upper-level African history course.

HIST 519  **Colonialism & Postcolonialism**  credit: 4 hours.
Same as ANTH 504. See ANTH 504.

HIST 520  **Problems in Chinese History**  credit: 4 hours.
Same as EALC 520.

HIST 521  **Seminar in Chinese History**  credit: 4 hours.
Research seminar in Chinese history designed to provide training to graduate students in research skills with an emphasis on the use of source materials in Chinese language. Same as: EALC 522. May be repeated to a maximum of 8 graduate hours. Prerequisite: Proficiency in written Classical or Modern Chinese, EALC 500 for EALC graduate students, and HIST 520 for History graduate students, or the consent of instructor.

HIST 522  **Topics in Korean History**  credit: 4 hours.
Same as EALC 562. See EALC 562.

HIST 526  **Problems in Japanese History**  credit: 4 hours.
Period covered will alternate between the Early Modern (1550 - 1850) and Modern (1850 - present) eras. Same as EALC 526. May be repeated to a maximum of 8 hours.

HIST 527  **Seminar in Japanese History**  credit: 4 hours.
Period covered will alternate between the Early Modern (1550 - 1850) and Modern (1850 - present) eras. Same as EALC 527. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Graduate standing in HIST, EALC, or other related discipline and reading knowledge of Japanese, or consent of instructor.

**HIST 535  Prob Middle Eastern History**  credit: 4 hours.
Covers, in depth, major problems of specific periods and areas and the relevant literature of Near and Middle Eastern History, which will vary from term to term. May be repeated to a maximum of 8 hours if topics vary.

**HIST 536  Seminar in Middle Eastern Hist**  credit: 4 hours.
Investigates research topics in Near and Middle Eastern history in accordance with students’ needs. Topics may vary from term to term. Students will prepare oral and written reports. May be repeated to a maximum of 8 hours.

**HIST 542  Problems in Medieval History**  credit: 4 hours.
Same as MDVL 542.

**HIST 543  Seminar in Medieval History**  credit: 4 hours.
Same as MDVL 543.

**HIST 544  Prob European Hist 1350-1648**  credit: 4 hours.

**HIST 545  Seminar in Early Modern Europe**  credit: 4 hours.

**HIST 546  Prob English Hist Since 1688**  credit: 4 hours.

**HIST 547  Seminar English Hist to 1688**  credit: 4 hours.
Same as MDVL 547.

**HIST 548  Prob English Hist to 1688**  credit: 4 hours.
Same as MDVL 548.

**HIST 549  Sem Eng & Brit Emp Since 1688**  credit: 4 hours.

**HIST 550  Prob Early Mod European Hist**  credit: 4 hours.

**HIST 551  Prob European Hist Since 1789**  credit: 4 hours.
May be repeated in the same or subsequent terms as topics vary.

**HIST 552  European Seminar Since 1789**  credit: 4 hours.

**HIST 560  Problems in Russian History**  credit: 4 hours.

**HIST 561  Seminar in Russian History**  credit: 4 hours.

**HIST 570  Prob in American Hist to 1830**  credit: 4 hours.

**HIST 571  Seminar in Amer Hist to 1789**  credit: 4 hours.

**HIST 572  Prob in US Hist Since 1815**  credit: 4 hours.
May be repeated in the same or subsequent terms as topics vary.

**HIST 573  Seminar Amer Hist Since 1789**  credit: 4 hours.

**HIST 574  Current Legal Problems**  credit: 1 TO 4 hours.
This is an umbrella course listing for specialty topics of current legal issues of interest. May be repeated.

**HIST 575  Problems African American Hist**  credit: 4 hours.
Covers in depth, major problems in the African American experience and in the historiography of that experience, including historical periods, themes and paradigms. Same as AFRO 501. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours.

**HIST 590  History of Historiography**  credit: 4 hours.
Introduction to the great historians from early times to the present. Prerequisite: Graduate standing in history or consent of instructor.

**HIST 591  History and Social Theory**  credit: 4 hours.
Introduces recent historical work drawing upon theories and concepts from the social sciences; considers fields of inquiry which include family history, demographic history, labor history, prosopographical and entrepreneurial studies, local and regional studies, and others.

**HIST 592  Quant Tech for Historians**  credit: 4 hours.
Focuses on the use of quantitative techniques in historical research, exploring problems in research design, data management and computer techniques, and the evaluation of statistics used by historians. Prerequisite: SOC 485 or consent of instructor.

HIST 594  **Intro Historical Writing**  credit: 4 hours.
Seminar for first-year graduate students and is the second half of the introductory graduate sequence. Focuses on the process of writing an original piece of historical scholarship. Topics to be discussed include: developing an argument, exploring sources, arriving at a research strategy, planning and structuring an article, presenting complex data, and producing scholarship that is a coherent representation of an author's perspective on the past. Over the course of the semester, each seminar participant will develop and write an original, article length research paper. Students will work with the assistance of the instructors and an advisor from her or his own research field. Prerequisite: HIST 593.

HIST 596  **Individual Research Project**  credit: 4 hours.
Directed research in special fields; may be taken in lieu of seminars in fields in which seminars are seldom offered.

HIST 597  **Reading Course**  credit: 0 TO 4 hours.
Directed readings in special fields. Primarily, but not exclusively, for students with a master's degree or equivalent, who are preparing for the preliminary examination in history and who need instruction in areas not provided by current course offerings. Approved for both letter and S/U grading. May be repeated in the same or subsequent terms as topics vary. Prerequisite: Consent of instructor.

HIST 598  **Teaching of College History**  credit: 2 hours.
May be repeated. Approved for S/U grading only. Prerequisite: Candidate for Ph.D. degree in history.

HIST 599  **Thesis Research**  credit: 0 TO 16 hours.
Individual direction in research and guidance in writing theses for advanced degrees. May be repeated. Approved for S/U grading only.
Hindi

Linguistics
Head of Department: Elabbas Benmamoun
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3563
www.linguistics.uiuc.edu

HNDI 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
May be repeated.

HNDI 201 Elementary Hindi-Urdu I credit: 5 hours.
Introduction to the Hindi/Urdu language; includes conversation with a native Hindi/Urdu-speaking tutor under the direction of a linguist instructor, and a minimum of formal grammar and Devanagari writing; introduction to Arabic-Persian script by arrangement. Participation in the language laboratory is required.

HNDI 202 Elementary Hindi-Urdu II credit: 5 hours.
Second term of spoken Hindi/Urdu; includes conversation with a native Hindi/Urdu-speaking tutor under the direction of a linguist instructor, formal grammar based on conversational materials, and work on written Hindi; concentration on written Urdu by arrangement. Participation in the language laboratory is required. Prerequisite: HNDI 201.

HNDI 403 Intermediate Hindi I credit: 4 hours.
First term of second year of the Hindi language, including drill for more advanced conversational fluency; introduction to a greater variety of styles and levels of discourse and usage; and increasing study of the written language and more formal grammar. Prerequisite: HNDI 202 or equivalent.

HNDI 404 Intermediate Hindi II credit: 4 hours.
Concentration on ability to engage in reasonably fluent discourse in Hindi, on comprehensive knowledge of formal grammar, and on ability to read ordinary texts in Hindi. Prerequisite: HNDI 403 or equivalent.

HNDI 405 Advanced Hindi I credit: 3 hours.
Course for advanced knowledge of spoken and written Hindi. Participation in the language laboratory is required. Prerequisite: HNDI 404 or consent of instructor.

HNDI 406 Advanced Hindi II credit: 3 hours.
Course for advanced knowledge of spoken and written Hindi with emphasis on modern Hindi literature and language. Participation in the language laboratory is required. Prerequisite: HNDI 405 or consent of instructor.

HNDI 408 Intro to South Asian Lit credit: 3 hours.
Introduces selected literatures of South Asia in a cross-cultural and comparative perspective: emphasizes relating literary texts and trends to the historical, sociocultural, political, and literary contexts of the subcontinent. Texts for South Asian languages are offered in English translation; in addition, there will be texts by South Asian authors written in English. Knowledge of a South Asian language not required. Prerequisite: Consent of course coordinator.
Horticulture

Natural Resources and Environmental Sciences
Head of Department: Bruce Branham
Department Address: W-503 Turner Hall, 1102 South Goodwin Avenue, Urbana
Phone: 333-2770
www.nres.uiuc.edu

HORT 100 Introduction to Horticulture credit: 3 hours.
Basic principles of plant growth and development as they apply to the production, marketing, and utilization of fruits, vegetables, and ornamental plants.

HORT 105 Vegetable Gardening credit: 3 hours.
The science and art of growing vegetables and the connection between gardening and food. Topics include nutrient and pest management, history, folklore, growing requirements, and quality characteristics of vegetables. Lecture and laboratory. Credit is not given to horticulture majors. All other students receive credit for HORT 105 or HORT 364, but not for both.

HORT 106 Home Horticulture credit: 3 hours.
Fundamentals of home gardening and the effective use of ornamentals as a part of the home environment. Subjects include the selection, culture, and use of garden annuals, biennials, perennials, bulbs, and house plants; garden tools and equipment; soil preparation; plant propagation; principles of design and planting methods; garden maintenance; use of fertilizers; pest control; training and pruning; lawn care; hybridizing; growing structures; and care of cut flowers. Not open to students in the Horticulture curriculum.

HORT 107 Introduction to Floral Design credit: 2 hours.
Introduces the art of arranging flowers, foliages, and accessories according to the principles of design. Lecture and lab.

HORT 180 Medicinal Plants and Herbology credit: 3 hours.
The use of cultivated and wild plants in medicines and health products according to Eastern and Western medical traditions. Consideration of herbal medicine use from ancient times to the present, important medicinal chemicals produced by plants, and the evaluation of plant chemical products as potential human medicines. Same as CPSC 180.

HORT 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
Experimental course on a special topic in horticulture. Topic may not be repeated except in accordance with the Code. May be repeated in the same or subsequent terms. No more than 12 hours may be counted toward graduation.

HORT 226 Introduction to Weed Science credit: 3 hours.
Same as CPSC 226. See CPSC 226.

HORT 236 Intro to Turfgrass Management credit: 3 hours.
Examines the principles and practical knowledge necessary for the establishment and maintenance of high-quality turfgrass stands for use as home lawns, golf courses, athletic fields, parks, and other commercial uses. Presents an integrated approach to management that considers conservation of resources and environmental impacts in relationship to turfgrass quality. Prerequisite: IB 103.

HORT 240 Plant Propagation credit: 3 hours.
Examines theories and methods employed in propagation of plants, emphasizing anatomical, physiological, and ecological principles involved in sexual propagation (seeds) and asexual propagation (division, cuttings, budding, grafting, tissue culture, etc.) Prerequisite: IB 103.

HORT 246 Floral Design I credit: 3 hours.
Applies principles of design to the composition and decorative use of flowers, foliages, and accessories. Prerequisite: Enrollment in Horticulture, Human and Community Development, or Hospitality Management.

HORT 250 Floral Crop Quality Evaluation credit: 1 hours.
Teaches students industry standards for acceptable potted flowers, potted foliage, and cut flower crops. Students actively participate in staging plant classes for judging, judge plant material, and justify class placement. The top four students are invited to represent the University of Illinois in the National Intercollegiate Floral Quality Evaluation and Design Competition. May be repeated to a maximum of 2 hours if topics vary.

HORT 261 Biotechnology in Agriculture credit: 3 hours.
Same as CPSC 261. See CPSC 261.
This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

HORT 293  **Professional Internship**  credit: 1 TO 4 hours.
Off-campus experience in a field directly pertaining to a subject matter in horticulture. May be repeated to a maximum of 4 hours. Approved for both letter and S/U grading. Prerequisite: Consent of academic advisor or Department Internship Coordinator.

HORT 294  **Resident Internship**  credit: 1 TO 4 hours.
Supervised, on-campus, learning experience with faculty engaged in research. Approved for both letter and S/U grading. May be repeated to a maximum of 4 hours. Prerequisite: Consent of academic advisor or Department Internship Coordinator.

HORT 295  **Undergrad Research or Thesis**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward degree. Prerequisite: Junior standing, cumulative GPA of 2.5 or above at the time the activity is arranged, and consent of instructor.

HORT 298  **Undergraduate Seminar**  credit: 1 TO 3 hours.
Group discussion on a special topic in a field of study directly pertaining to subject matter in horticulture. May be repeated to a maximum of 12 hours. Prerequisite: Junior standing.

HORT 301  **Woody Landscape Plants I**  credit: 3 hours.
Systematic approach to the identification, ornamental characters, culture, and use of woody landscape deciduous trees and shrubs with special emphasis on cultivated varieties. Prerequisite: IB 102 or IB 103.

HORT 302  **Woody Landscape Plants II**  credit: 3 hours.
Systematic approach to the identification, ornamental characters, culture, and use of woody landscape conifers, broadleaf evergreens, vines, ground covers, and woody ornamental deciduous trees and shrubs with special emphasis on cultivated varieties. Required field trip. Prerequisite: NRES 302 or HORT 301.

HORT 341  **Greenhouse Mgmt and Production**  credit: 4 hours.
Survey of topics relating to commercial greenhouse operations, management, and production. Examines design, location, and glazing of greenhouse structures; greenhouse operations such as heating, cooling, environmental control, and irrigation systems; production factors including light, temperature, root media, fertilization, watering, and integrated pest management; and management concepts such as industry trends and cost analysis. Production of fall potted crops will be emphasized. Prerequisite: NRES 201 and HORT 100.

HORT 343  **Herbaceous Plants I**  credit: 3 hours.
Course includes identification, culture, and landscape use of herbaceous, frost-tender ornamental plants. Emphasis on flowering annuals, tropical foliage plants used for outdoor displays, and foliage plants used for interiorscaping. Elements of design will be addressed; design projects will integrate concepts. Prerequisite: IB 103.

HORT 344  **Herbaceous Plants II**  credit: 3 hours.
Course includes identification, cultural requirements, and landscape uses of herbaceous perennials and hardy bulbs. The design of perennial borders for continuous flowering will be emphasized. Prerequisite: IB 103.

HORT 346  **Floristry and Floral Design II**  credit: 3 hours.
Examines flower shop management including establishment, financing and creation of a business plan. Covers pricing, buying, delivery display, and advanced floral design skills. Prerequisite: HORT 246.

HORT 359  **Landscape Plants Production**  credit: 3 hours.
Emphasizes woody landscape plant production, nursery operation, and nursery business management techniques; includes both traditional and computer-aided management tools; examines industry scope and diversity through nursery visits, presentations by nursery operators, and field trips. Offered in alternate years. Prerequisite: NRES 302 or HORT 301 and HORT 240.

HORT 361  **Small Fruits and Viticulture**  credit: 3 hours.
Technological application of biological principles to the culture of strawberry, grape, blueberry, raspberry, blackberry, currant, gooseberry, and miscellaneous small fruits. Prerequisite: HORT 100 or IB 103.

HORT 362  **Tree Fruit Production**  credit: 3 hours.
Examines biological principles and cultural practices involved in the growth and production of apple, pear, peach, cherry, plum, apricot, almond, and miscellaneous citrus and nut crops. Offered in alternate years. Prerequisite: HORT 100 or IB 103.

HORT 396  **Ug Honors Research or Thesis**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the direction of the Honors advisor. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward degree. Prerequisite: Junior standing, admission to the ACES Honors Program, and consent of instructor.

**HORT 421  **Horticultural Physiology  **credit:** 4 hours.

Horticultural crop growth is examined in relation to plant structure, environment, and cultural practices. Emphasizes environmental control of whole plant growth as influenced by the supply of the raw materials required for growth: water, carbon dioxide, radiant energy, including the influence of temperature and photoperiod on plant growth and development. The shoot and root interactions with the environment are characterized relative to cultural practices. Prerequisite: HORT 100 or IB 103 and junior standing.

**HORT 436  **Perennial Grass Ecosystems  **credit:** 4 hours.

Examines different levels of ecological organization in perennial grass ecosystems. Provides advanced study for students in turfgrass management. Cultural programs are derived from an understanding of interrelationships between different components of the ecosystem. Field trips. Same as CPSC 416. Offered in alternate years. Prerequisite: HORT 236.

**HORT 441  **Floricultural Crops Production  **credit:** 4 hours.

Examines the commercial production cycles of floricultural crops grown as potted flowering plants, cut flowers, and bedding plants. Cultural practices are derived from an understanding of the interrelationships among environmental conditions, species requirements, production systems, and floricultural physiology. Crop scheduling, production and cost analysis are emphasized in an applied setting. Field trip required. Prerequisite: HORT 240 and HORT 341.

**HORT 442  **Plant Nutrition  **credit:** 4 hours.

Mechanisms and factors affecting the absorption, transport, distribution, and functions of the essential elements required by higher plants. Offered in alternate years. Prerequisite: NRES 201 and IB 334 or IB 420.

**HORT 443  **Horticulture Entreprenership I  **credit:** 1 OR 3 hours.

An active learning experience in which students will be responsible for planning, implementing, and marketing a campus based horticultural company. Lectures, case studies, community service events, and greenhouse/crop management provides students with the knowledge needed to successfully propose and implement a business model. Students are expected to participate in out-of-class learning opportunities. Because the class is taught as an active business, students are encouraged to participate for an annual cycle of business by registering for HORT 444. Class laboratory fee is required. 3 undergraduate hours. 1 graduate hour. Prerequisite: HORT 441, BADM 510, or consent of instructor.

**HORT 444  **Horticulture Entreprenership II  **credit:** 1 OR 3 hours.

An active learning experience in which students will be responsible for the implementing, evaluating, and expanding a campus based horticultural company. Lectures, case studies, community service events, and greenhouse/crop management provides students with the knowledge needed to successfully implement a business model and strategically plan for expansion. Students are expected to participate in out-of-class learning opportunities. Because the class is taught as an active business, students are expected to complete HORT 443 before enrolling in this class. Class laboratory fee is required. 3 undergraduate hours. 1 graduate hour. Prerequisite: HORT 443, BADM 510, or consent of instructor.

**HORT 447  **Horticultural Plant Breeding  **credit:** 3 hours.

Methodology, objectives, and constraints of breeding for improved cultivars of flowers, woody ornamentals, turfgrasses, fruits, and vegetables. Emphasis on breeding objectives unique to horticultural commodities such as color, appearance, flavor, shelf-life, nutritional value, and other characteristics that determine product quality. Offered in alternate years. Prerequisite: CPSC 352.

**HORT 450  **Landscape Contracting  **credit:** 3 hours.

Interpreting landscape plans; writing landscape installation and construction specifications; bidding and estimating costs and quantities of landscape construction materials; landscape surveying techniques; selecting materials, preparing the site and constructing landscape structures; evaluating landscape business management practices. Field trip required. Credit no given for both HORT 450 and LA 343. Prerequisite: NRES 302 or HORT 301.

**HORT 453  **Principles of Plant Breeding  **credit:** 4 hours.

Same as CPSC 453. See CPSC 453.

**HORT 455  **Residential Site Design I  **credit:** 4 hours.

Theory and practice of landscape design at a residential scale. Emphasis on developing graphic communication techniques, design vocabulary, and site design skills that use plants, paving, and garden structures. Prerequisite: HORT 302.

**HORT 456  **Residential Site Design II  **credit:** 3 hours.

Emphasis on the design process, comprehensive development of residential sites, advanced graphic communication techniques, and theories regarding human-environment interactions. Prerequisite: HORT 455.
HORT 458  **Tree Mgmt in the Urban Forest**  credit: 4 hours.
Application of woody plant physiology and anatomy to arboricultural technical skills in commercial and municipal settings. Topics include the benefits of trees to urban and landscape settings, how woody plants react to urban stresses, and tree care practices. Emphasis is placed on the development and improvement of professionalism, concentrating on marketing and promotion of horticultural expertise at the individual plant, urban and community forest levels. Students learn to plant, prune, fertilize and perform other tree care practices. Students conduct urban tree inventories and learn about municipal tree ordinances, and placing monetary value on individual privately-owned and civically-controlled trees. GIS and GPS technology are taught in the context of management tools for the urban forest. Includes field trips and field laboratory exercises. Fee required. Prerequisite: NRES 201 and NRES 302 or HORT 301.

HORT 464  **International Hort Products**  credit: 3 hours.
Survey of the international trade in and production of horticultural foods, beverages, herbs, spices, floricultural crops, interior plants, and landscape plants. Important export and import crops will be discussed. Legal and environmental issues are explored. Term project required. Prerequisite: CPSC 112, or HORT 100 or IB 103.

HORT 465  **Ethics in Biotechnology**  credit: 3 hours.
Covers principles of ethics related to developments in biotechnology, the impact of biotechnology on environments, health, and food, and societal perception and conflict in addressing biotechnology. The course includes discussion, debate, and conflict resolution. Same as ANSC 465 and CPSC 465. Prerequisite: CPSC 261 or CPSC 265.

HORT 466  **Growth and Dev of Hort Crops**  credit: 4 hours.
Factors affecting growth, development, and quality of horticultural crops, such as photoperiodism, growth regulators, and carbon dioxide levels. Prerequisite: CHEM 104 and NRES 426 or HORT 421 or IB 420.

HORT 482  **Plant Tissue Culture**  credit: 4 hours.
Survey, description, and applications of cell and tissue culture strategies for plant research and production. Topics include culture environment, media composition, tissue manipulation, organogenesis, embryogenesis, somatic hybridization, bioreactors and use of these techniques for plant propagation and physiological and biochemical research. Independent research project is conducted by each student. Same as CPSC 482. Prerequisite: CHEM 232 and IB 103.

HORT 489  **Controlling Turfgrass Pests**  credit: 3 hours.
Principles and strategies of integrated pest management (IPM), turf management practices, and common pests of turf are examined. The biology, habitat, identifying features, and management strategies of each pest are described. Offered in alternate years. Prerequisite: HORT 236 and CPSC 270 or NRES 280; and PLPA 204.

HORT 499  **Experimental Graduate Courses**  credit: 1 TO 3 hours.
Experimental course on a special topic in Horticulture. May be repeated in the same or separate terms to a maximum of 12 hours as topics vary.

HORT 505  **Research Methods in Hort**  credit: 4 hours.
Lectures, discussions, demonstrations, and laboratory exercises dealing with methods and apparatus used in horticultural research.

HORT 566  **Plant Gene Regulation**  credit: 4 hours.
Same as CPSC 566. See CPSC 566.

HORT 588  **Plant Biochemistry**  credit: 4 hours.
Same as CPSC 588 and IB 524. See CPSC 588.

HORT 598  **Experimental Graduate Courses**  credit: 1 TO 3 hours.
Experimental course on a special topic in Horticulture. May be repeated in the same or separate terms to a maximum of 12 hours as topics vary.
Human Resource Education

Human Resource Education
Interim Head: Steven R. Aragon
Department Office: 345 Education Building, 1310 South Sixth, Champaign
Phone: 333-0807
www.hre.uiuc.edu

HRE 199 Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

HRE 400 Principles of HRE  credit: 4 hours.
Study of the basic concepts and practices of education for and about work: its philosophical foundations and historical development, mission and goals, structure and function, curricular areas of emphasis, learner audiences served and settings in which programs are conducted, and issues and trends affecting program change.

HRE 401 Training in Business/Industry  credit: 4 hours.
Study of the status of education, training and development within business and industry; includes an overview of the systemic process for planning, delivery, and evaluation of training programs; and explores major problems, trends, and issues associated with the field.

HRE 402 Business Principles for HRD  credit: 4 hours.
Study of essential business understandings, knowledge, and skills required for HRD professionals to interact effectively with others in the business community.

HRE 411 Instructional Design  credit: 4 hours.
Provides instruction and practice in the selection, organization, and preparation of content for instructional programs in business and technical settings. Provides students with a theoretical orientation to instructional design as well as the opportunity to experience the instructional design process as it applies to business and technical settings through the development of instructional materials.

HRE 412 Instructional Techniques  credit: 4 hours.
Provides a research-based exploration of effective teaching techniques for instructors of business, industry, and community college technical programs. Equip students with a conceptual framework for instruction and provides guidance and experience in the planning, delivery, and evaluation of instruction.

HRE 414 Facilitation Skills  credit: 4 hours.
Provides an in-depth examination into the body of research of effectively facilitating groups, including the nature of groups, the dynamics of individuals within groups, effective planning, role clarification, identification of intervention points in groups, and effective use of tools and techniques. The theoretical foundations for the course reside in theories of human values, group dynamics, decision-making, communication, managing conflicts, and effective group intervention. Course emphasis is on experiential learning, with students practicing self-reflection and self-directed facilitations.

HRE 415 Diversity in the Workplace  credit: 4 hours.
Assists educators, as well as trainers and managers in business and industry, to effectively recognize and understand diversity in school and work settings. Activities focus on understanding the nature of diverse populations, their unique learning needs, and potential collaborative efforts between educators and work place personnel.

HRE 470 Design of Learning Systems  credit: 4 hours.
Provides theoretical and practical learning experiences integrating the fields of Instructional Design and Instructional Technology through the study and development of technology-based learning environments.

HRE 472 Learning Technologies  credit: 4 hours.
The course addresses two important needs of educators. First, educators should be aware of recent developments in the area of instructional technology. Second, educators must be able to select, develop, and effectively use appropriate instructional technologies to enhance learning and communication. To meet these needs, this course covers a wide range of instructional technologies that are used for instructional and administrative purposes. Traditional instructional media are considered in the course although significant emphasis is placed on more recent developments that involve the use of the computer and its applications in education. Instructional technologies such as computer-based instruction, computer-based testing, distance learning, interactive video, and intelligent instructional technologies are covered. Through course readings, discussions, and projects, students in the course are expected to gain skills in choosing appropriate instructional technologies, designing effective presentations that rely on those technologies, and properly
using instructional technologies to enhance communication with an audience. Same as CI 484. Prerequisite: HRE 411 or equivalent course in instructional design.

**HRE 474  Evaluating Learning Technology**  credit: 4 hours.
Same as EPSY 474. See EPSY 474.

**HRE 475  Project Management for HRE**  credit: 4 hours.
Study of the basic principles and techniques related to managing personnel, time and resources in education and training projects. Through group and individual activities, including case study review and project simulation, students will apply project management tools and techniques in international training and educational setting.

**HRE 490  Issues and Developments in HRE**  credit: 2 OR 4 hours.
Special course for experimentation or for seminar on topics not treated by regularly scheduled courses. Topics vary; consult Class Schedule for specific section offerings. May be repeated to a maximum of 8 hours.

**HRE 491  Professional Skill Development**  credit: 2 OR 4 hours.
Designed to teach practitioner-oriented skills in specialized areas of human resource education. Topics vary; consult Class Schedule for specific section offerings. May be repeated to a maximum of 8 hours.

**HRE 492  Supervised Internship in HRE**  credit: 2 OR 4 hours.
While employed in approved cooperating organizations, students observe the relationship between HRE and organizational performance.

**HRE 495  Special Study & Investigation**  credit: 2 OR 4 hours.
Offers opportunity for an individual to study, on or off campus, selected problems, trends, and new developments or to conduct specialized investigations for the improvement of instructional programs in areas related to education and training. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours.

**HRE 501  The Community College**  credit: 4 hours.
Same as EOL 573. See EOL 573.

**HRE 509  Advanced Theories in HRD**  credit: 4 hours.
Provides a reading of advanced texts related to Human Resource Development from a variety of applied social science disciplines. Targeted towards doctoral students in the later stage of their course work who are interested in HRE theory and social science foundations. Prerequisite: HRE 400, HRE 411, HRE 530.

**HRE 510  Expertise and Its Development**  credit: 4 hours.
Covers developments in cognitive-based research as they relate to the design and implementation of technical instruction. Through readings, discussions, and projects, students gain an understanding of how people learn complex information, how skills are developed, and how instructors can better guide their students toward the development of expertise.

**HRE 517  Community College Program Dev**  credit: 4 hours.
Synthesizes selected sociological, psychological, and epistemological foundations for curriculum development in education and training; application of theories from fundamental disciplines to practice in existing and emerging curricula involving perceptual and psychomotor learning.

**HRE 530  Organization Development**  credit: 4 hours.
Addresses the history, concepts, theories, and techniques of Organization Development as applied in Human Resource Education; emphasis on creating, managing, and sustaining system-wide change in public and private organizations; organized around diagnosis, implementation, and evaluation of individual, team, and organization-wide interventions.

**HRE 531  Quality Process Improvement**  credit: 4 hours.
Examines quality and process improvement philosophies, theories, and strategies as they apply to the practice of professionals in human resource education. Based on a critical analysis of the historical antecedents, theoretical foundations, and empirical research results of Total Quality Management (TQM) and Continuous Process Improvement (CPI), students will be able to apply improvement strategies and evaluate the merits and limitations in public and private settings. Same as EOL 587.

**HRE 532  Strategic HRD**  credit: 4 hours.
Study of the theories, research, and applications of strategic human resource development in a variety of organizational settings.

**HRE 533  Management of HRD**  credit: 4 hours.
Study of management fundamentals related to planning, organizing, staffing, leading, and controlling the HRD function in organizations.
HRE 534  Economics of Human Resources  credit: 4 hours.
Same as LIR 545. See LIR 545.

HRE 535  Consulting in HRD  credit: 4 hours.
Analysis of key elements of consulting in the human resource development profession. Emphasis is placed on subject matter expertise, consulting skills, marketing, organization, business management, communication, and life/work balance. The course examines both the internal and external consulting practices. Issues of education and training of consultants for work in industry, business, government, and non-profit sectors are covered in detail.

HRE 536  International HRD  credit: 4 hours.
Course is designed to provide insights into international HRD at macro and micro levels. Course will cover: cross-cultural issues in international HRD; design and delivery of international HRD programs; HRD practices and programs in different regions of the world; national HRD programs; expatriate training and training in multinational corporations.

HRE 570  Technology Transfer  credit: 4 hours.
Examines the processes involved in transferring technologies from one organization or culture to another. Special emphasis is placed on the change process and its relationship to the diffusion of technology. Concludes with the identification of strategies that can be used to facilitate successful technology transfer. Students are required to complete extensive readings on the relevant topics, participate in discussions, and examine case studies related to technology transfer.

HRE 572  e-Learning Ecologies  credit: 4 hours.
An examination of emerging environments of e-learning, some setting out to emulate the heritage social relationships and discourses of the classroom, others attempting to create new forms of learning. Aims to push the imaginative boundaries of what might be possible in e-learning environments. Explores the ways in which assessments can be constructed and implemented which are integral to the learning process, with the assistance of today's social networking and other information technologies. Prerequisite: Acceptance into the Master of Education with an emphasis on New Learning and New Literacies program.

HRE 580  Disciplined Inquiry in Educ  credit: 4 hours.
Provides an analysis and synthesis of disciplined inquiry in human resource education including an historical perspective, formulation of the research process, and the utilization and communication of research.

HRE 582  Thesis Dissert Proposal Prep  credit: 4 hours.
Designed to take students through the entire process of proposal development, this course is intended for masters or doctoral students who are ready to prepare a thesis or dissertation proposal. Students will learn to use a systematic and comprehensive approach to develop the research proposal and how each step in the research process is related.

HRE 585  Program Evaluation  credit: 4 hours.
Theory and techniques of evaluation in cognitive, affective, and psychomotor domains at different educational levels and settings; development and analysis of activities and instruments for students and program evaluation, follow-up studies, and interpretation of results for self-evaluation and for administrative decision making.

HRE 590  Seminar for Advanced Students  credit: 0 TO 8 hours.
Seminar open to persons who have been admitted for doctoral study in human resource education. May be repeated to a maximum of 8 hours. Approved for both letter and S/U grading.

HRE 591  Field Study & Thesis Seminar  credit: 4 TO 8 hours.
Assists doctoral candidates in planning field studies and thesis problems; students present their studies at each of four stages: (1) the inception, delimitation, tentative design stage; (2) the proposed design stage; (3) the revised design stage; and (4) the final design stage. Students are expected to analyze critically all presentations.

HRE 592  Special Topics in HRE  credit: 4 hours.
Introduction to significant problems, points of view, and trends in the field; explores significant research relating to organization, content, and techniques. Topics vary; consult Class Schedule for specific section offerings. May be repeated with approval.

HRE 595  Independent Study  credit: 2 OR 4 hours.
Offers opportunity and challenge of self-directive, independent study, that is, develops the individual's ability as an independent student and enables the student to pursue needed study in a field in which appropriate courses are not being offered during a given term. May be repeated with approval. Prerequisite: Approval of study outline by adviser prior to enrollment.

HRE 599  Thesis Research  credit: 0 TO 16 hours.
Individual direction of research and thesis writing. May be repeated. Approved for S/U grading only.
Humanities Courses

Liberal Arts and Sciences
LAS Program Advisor: Mercedes Ramirez Fernandez
College Office: 270 Lincoln Hall, 702 South Wright, Urbana

HUM 141  Intro to American Civ I  credit: 3 hours.
Introduction to the multidisciplinary study of major aspects, events, and periods of the American experience; includes a series of topics, each focusing on one society, movement, or historical event as reflected in literature, art, history, and politics.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HUM 142  Intro to American Civ II  credit: 3 hours.
Continuation of HUM 141.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

HUM 191  Freshman Honors Tutorial  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars. May be repeated one time. Prerequisite: Consent of departmental honors adviser.

HUM 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

HUM 390  Individual Study  credit: 2 TO 4 hours.
Supervised reading and research on interdisciplinary humanities topics chosen by the student in consultation with a faculty member. May be repeated to a maximum of 8 hours. Prerequisite: Consent of humanities adviser (An approved Learning Agreement must be submitted to 270 Lincoln Hall, 702 S. Wright Street, Urbana, not later than the second week of the semester or the first week of the summer session).

HUM 395  Special Topics  credit: 3 hours.
Interdisciplinary topics in the humanities; topics vary, but are normally related to one of the options in the humanities major. May be repeated if topics vary. Students may register in more than one section per term.

HUM 397  Special Topics Junior  credit: 3 hours.
Interdisciplinary seminar and tutorial in selected topics related to one of the options in the humanities major. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing and consent of humanities adviser (Tutorial students must submit an Approved Learning Agreement to 270 Lincoln Hall, 702 S. Wright Street, Urbana, not later than the second week of the semester or the first week of the summer session).

HUM 471  Intro Second Lang Learn Tchg  credit: 4 hours.
Same as CHIN 471, FR 471, GER 469, JAPN 471, LAT 471, RUSS 471, and SPAN 471. See SPAN 471.

HUM 482  Computer Foreign Lang Tchg  credit: 4 hours.
Theory and practice of computer-assisted instruction, with special emphasis on problems and techniques of foreign-language instruction. General principles; survey of existent and probable future CAI systems; and practical experience with lesson design and programming on the IBM and Macintosh personal computers. Linguistics majors are advised to complete LING 406 before registering for this course. Same as CLCV 482, EIL 482, FR 482, GER 482, ITAL 482, LING 486, PORT 482, SLAV 482, and SPAN 482. Prerequisite: Two years college language or equivalent, and consent of instructor.

HUM 488  French & Comparative Cinema I  credit: 4 hours.
Same as CINE 488, CWL 488, and FR 488. See FR 488.

HUM 489  French & Comparative Cinema II  credit: 4 hours.
Same as CINE 489, CWL 489, and FR 489. See FR 489.

HUM 492  Senior Thesis  credit: 2 TO 4 hours.
Individual research for majors in humanities leading to the completion of a thesis. May be repeated to a maximum of 8 hours. No graduate credit. Prerequisite: Senior standing, a declared option in humanities major, and consent of advisor.

**HUM 495  Special Advanced Topics**  credit: 3 OR 4 hours.
Offers interdisciplinary topics in the humanities; topics vary, but normally relate to the interdisciplinary areas of study within the humanities major or to the special humanities facilities (e.g., the Language Learning Laboratory). 3 undergraduate hours. 4 graduate hours. May be repeated as topics vary to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisites will vary according to topic. See Class Schedule.

**HUM 496  Advanced Topics**  credit: 1 TO 4 hours.
Offers interdisciplinary topics in the humanities; topics vary. Approved for both letter and S/U grading. May be repeated in the same or subsequent semesters to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Prerequisites will vary according to topic. See Class Schedule.

**HUM 498  Special Topics Senior**  credit: 3 hours.
Interdisciplinary seminar and tutorial in selected topics related to one of the options in the humanities major. 3 undergraduate hours. No graduate credit. May be repeated to a maximum of 6 hours. Prerequisite: Senior standing and consent of humanities adviser (Tutorial students must submit an approved Learning Agreement to 270 Lincoln Hall, 702 S. Wright Street, Urbana, not later than the second week of the semester or the first week of the summer session).
**IB 100 Biological Sciences**  
Credit: 3 hours.  
Introduction to biology for the non-major. In-depth focus on three contemporary problems-maintaining a livable environment, issues of human health, and evolution. Credit is not given for both IB 100 and IB 101.

This course satisfies the General Education Criteria for a:  
UIUC: Life Sciences

**IB 101 Biological Sciences**  
Credit: 4 hours.  
Introduction to biology for the non-major, including laboratory. In-depth focus on three contemporary problems-maintaining a livable environment, issues of human health, and evolution. Emphasis in laboratory is on science as a process. Lecture and laboratory. Credit is not given for both IB 101 and IB 100.

This course satisfies the General Education Criteria for a:  
UIUC: Life Sciences

**IB 102 Plants, People & Environment**  
Credit: 3 hours.  
Designed primarily to give the nonscience student an introduction to plants, and their biological, economic, and environmental importance in today's world. Discussions and demonstrations emphasize practical aspects of plant biology and science as they relate to current environmental issues. Lecture and discussion. Credit is not given for both IB 102 and IB 103.

This course satisfies the General Education Criteria for a:  
UIUC: Life Sciences

**IB 103 Introduction to Plant Biology**  
Credit: 4 hours.  
Basic principles of growth and form, physiology, genetics, evolution, and ecology in plant biology. Lecture and laboratory. Credit is not given for both IB 103 and IB 102.

This course satisfies the General Education Criteria for a:  
UIUC: Life Sciences

**IB 104 Animal Biology**  
Credit: 4 hours.  
Introductory zoological concepts with emphasis on the diversity and comparative anatomy of animals and the fundamentals of physiology, genetics, evolution, and behavior. Lecture and laboratory. The laboratory includes vertebrate dissection.

**IB 105 Environmental Biology**  
Credit: 3 hours.  
Introduction to ecological principles in relation to understanding environmental problems; lecture and discussion emphasize impacts upon ecosystems by human activities such as air and water pollution, usage of pesticides and pest control measures, expansion of agriculture in tropics and arid regions, harvesting the oceans, and development of energy sources.

This course satisfies the General Education Criteria for a:  
UIUC: Life Sciences

**IB 107 Global Warming, Biofuels, Food**  
Credit: 3 hours.  
Introduction for non-science majors to the biology and ecology underlying the likely impacts of global change on our society this century. Topics include: global warming, alternative biofuels, future food security, and conservation of biodiversity. For non-majors only.

This course satisfies the General Education Criteria for a:  
UIUC: Life Sciences

**IB 109 Insects and People**  
Credit: 3 OR 4 hours.  
Fundamentals of insect biology as reflected in human culture; insect physiology, ecology, and behavior discussed in the context of art, literature, movies, medicine, sports, law, and history. Optional two-hour laboratory for 1 hour additional credit.

This course satisfies the General Education Criteria for a:  
UIUC: Life Sciences
IB 150 Organismal & Evolutionary Biol  credit: 4 hours.
Introduction to function, genetics, and evolution of organisms, and their ecology and diversity.
This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

IB 151 Organismal & Evol Biol Lab  credit: 1 hours.
Topics follow lecture topics in IB 150 and include labs in ecology, plant and animal function, and genetics and evolution. Designed for non-majors needing a year of biology with lab. Credit for IB 151 cannot be counted for Integrative Biology or Molecular and Cellular Biology majors. Prerequisite: Credit or concurrent registration in IB 150.

IB 199 Undergraduate Open Seminar  credit: 0 TO 5 hours.
Approved for both letter and S/U grading. May be repeated to a maximum of 5 hours.

IB 202 Structure and Function  credit: 4 hours.
How organisms function in acquiring, processing, and allocating resources in the face of environmental constraints. The laboratory emphasizes the variation among organisms in their anatomy and physiology. The laboratory includes vertebrate dissection. Prerequisite: IB 150 and MCB 150.

IB 203 Ecology  credit: 4 hours.
The links between evolution and ecology, population dynamics, community structure and function, and ecosystem function on local and global scales. Basic ecology needed to understand environmental problems and to conserve biodiversity. Investigations in both field and laboratory included. Prerequisite: IB 150 and MCB 150.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

IB 204 Genetics  credit: 3 OR 4 hours.
The fundamentals of inheritance, with an emphasis on eukaryotes. Major topics include transmission genetics, quantitative genetics, cytogenetics, genomics, genetics of development and behavior, and population genetics. Laboratory emphasizes an experimental, inquiry-based approach to modern and classical genetics. Lecture only, 3 hours; with laboratory, 4 hours. Students must complete the laboratory portion of the course to receive 4 hours of credit. Students may not receive credit for both IB 204 and IB 201. Prerequisite: IB 150 and MCB 150.

IB 220 Applied Entomology  credit: 3 hours.
Same as CPSC 270 and NRES 270. See CPSC 270.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

IB 270 Evolution of Molecules & Cells  credit: 5 hours.
The major evolutionary transitions of biomolecules and cells including: energy acquisition and metabolism; information inheritance, system regulation, and genomes; the origin of life and of the prokaryotic cell, eukaryotic cell, and multicellularity. Lecture and laboratory. Students may not receive credit for both IB 270 and MCB 250 or MCB 252. Prerequisite: Admission to the IB honors biology option; credit or concurrent registration in organic chemistry.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

IB 271 Organismal Biology  credit: 5 hours.
Integrated study of the diversity and structure and function of plants and animals in evolutionary and environmental contexts. Conceptual themes and techniques of molecular and cellular levels of biological organization will be integrated as well. Lecture and laboratory. The laboratory includes vertebrate dissection. Students may not receive credit for both IB 271 and IB 202. Prerequisite: IB 270; good standing in the honors biology option.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

IB 302 Evolution  credit: 4 hours.
Broad introduction to evolutionary biology, including natural selection and microevolution, phylogeny, speciation, molecular evolution, macroevolution and the fossil records. The laboratory emphasizes a survey of biodiversity and processes and patterns of evolution. Laboratory includes animal dissections. Credit is not given for both IB 302 and IB 201. Prerequisite: IB 204 or consent of instructor.

IB 331 Biology of Reproduction  credit: 4 hours.
Same as ANSC 331. See ANSC 331.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences
IB 334  Organismal Biology of Plants  credit: 3 hours.
Physiological and morphological attributes that underlie the biosynthesis, growth, and reproduction of flowering plants in relation to the environment. Prerequisite: IB 102, IB 103, or IB 150; CHEM 104 and CHEM 105; or consent of instructor.

IB 335  Systematics of Plants  credit: 4 hours.
Introduces the principles and methods of the identification, naming, classification, systematics, and evolution of flowering plants; includes a survey of selected flowering plant families with information on their interrelationships. Prerequisite: One of the following: IB 100, IB 101, IB 102, IB 103, or IB 150; consent of the instructor.

IB 348  Fish and Wildlife Ecology  credit: 3 hours.
Same as NRES 348. See NRES 348.

IB 363  Plants and Their Uses  credit: 3 hours.
Consideration of plants which are useful or harmful: their origins and history, botanical relationships, chemical constituents which make them economically important, and their roles in prehistoric and modern cultures and civilizations. Same as ANTH 378. Prerequisite: IB 102, IB 103, or IB 150; or consent of instructor.

IB 368  Vertebrate Natural History  credit: 4 hours.
Introduction to the classification, life histories, adaptations, and ecology of fishes, amphibians, reptiles, birds, and mammals. Focus is on species of the Midwest region. Laboratory emphasizes identification and distribution of Illinois' vertebrate fauna. Some Saturday field trips are required. Same as NRES 368. Prerequisite: IB 203 or NRES 219 or consent of instructor.

IB 372  Ecology and Evolution  credit: 5 hours.
Integrated study of ecology, population genetics, and evolution. Conceptual themes and techniques from the molecular, cellular, and organismal levels of biology will be integrated as well. Lecture, laboratory, and field work. Students may not receive credit for both IB 372 and either IB 201, IB 203, or IB 302. Prerequisite: IB 271; good standing in the IB honors biology option.

IB 390  Introductory Research  credit: 1 TO 5 hours.
Laboratory and/or field research and/or reading supervised by faculty members in the School of Integrative Biology. May be repeated. Approved for S/U grading only. No more than a combined maximum of 10 hours of IB 390 or IB 490 may count toward graduation for IB majors. Prerequisite: Consent of instructor.

IB 401  Introduction to Entomology  credit: 3 OR 4 hours.
Integrated studies of the principal morphological, physiological, ecological and behavioral relationships among insects. Lecture and laboratory. An insect collection will be required for 4 hours credit. Prerequisite: IB 150; or consent of instructor.

IB 402  Molecular Evolution  credit: 3 hours.
Introduction to evidence for evolutionary change at the molecular and cellular levels of organization; origin and changes in macromolecules, genes, cells, and their organelles emphasized. Prerequisite: IB 302 or consent of instructor.

IB 403  Behavioral Inference & Fossils  credit: 3 OR 4 hours.
Same as ANTH 446. See ANTH 446.

IB 404  Comp Genomics of Eukaryotes  credit: 2 hours.
Introduction to the genomes of the major molecular genetic model eukaryotes. Focuses on methods for comparative genomics and the insights gained from these comparisons, from the level of polymorphism within a species to comparisons across kingdoms. Potential for extension beyond model organisms and for insights into global aspects of eukaryotic genome evolution is demonstrated. Prerequisite: MCB 150; IB 204 or MCB 250; or consent of instructor. IB 302 and MBC 405 recommended.

IB 405  Ecological Genetics  credit: 3 hours.
Study of the genetics of natural populations, stressing empirical observations and experiments. Emphasis on recent theories of genotype/environmental interactions and their relationship to evolutionary processes. Prerequisite: IB 204; or consent of instructor.

IB 406  Evolution of Adaptive Systems  credit: 3 hours.
Evolutionary mechanisms underlying adaptations; emphasizes origin and subsequent modification of major complex systems; pertinent evidence considered from several disciplines, including population biology, developmental biology, structural analysis and paleobiology. Prerequisite: IB 302; or consent of instructor.

IB 409  Evol of Infectious Disease  credit: 3 hours.
An integrative approach will be used to evaluate selected evolutionary mechanisms and processes employed by a variety of microbial pathogens. Different evolutionary strategies used to become a successful pathogen will be emphasized rather than a focus on clinical issues. The majority of hosts used as examples will be human. Concept will be presented in an evolutionary and phylogenetic context.
Designed for advanced undergraduate or beginning graduate students in biology who have a solid course background in evolution. Prerequisite: IB 302 or IB 372 or consent of instructor.

**IB 410 Evolution and Development**  credit: 3 hours.

Every animal is the product of two processes: development from an egg and evolution from its ancestors. The new field of evolutionary development biology, or "evo-devo", examines the relationship between these two processes. This course examines the developmental mechanism underlying the evolution of animal design, particularly with regard to the patterning of animal body plans and body parts. Takes an integrative approach, synthesizing data from paleontology, embryology, and genetics. Designed for students with prior coursework in evolution who are interested in understanding the mechanisms behind evolution. No previous background in development is required. Prerequisite: IB 302 or IB 372 or consent of instructor.

**IB 416 Population Genetics**  credit: 3 OR 4 hours.

Same as ANSC 446. See ANSC 446.

**IB 417 Quantitative Genetics**  credit: 3 OR 4 hours.

Same as ANSC 447. See ANSC 447.

**IB 420 Plant Physiology**  credit: 3 hours.

General course concerned with plant functions, including water relations, mineral nutrition, metabolism, growth, and reproduction. Same as CPSC 484. Prerequisite: IB 103 or IB 150 and MCB 150; CHEM 232; IB 202 recommended; or consent of instructor.

**IB 421 Photosynthesis**  credit: 3 hours.

Same as BIOP 432 and CPSC 489. See BIOP 432.

**IB 423 Plant Anatomy**  credit: 4 hours.

Lecture and laboratory course dealing with the structural characteristics of mature and developing cells, tissues, and organs of vascular plants, with special emphasis on the vegetative parts of flowering plants. Prerequisite: IB 103 or IB 150; IB 202 recommended; or consent of instructor.

**IB 424 Plant Development**  credit: 4 hours.

Mechanisms underlying plant development: cytodifferentiation and the cell cycle, regulation of gene expression, induction, determination, morphogenesis, and pattern formation. Offered in alternate years. Prerequisite: IB 103 or IB 150; and MCB 150; IB 202 recommended; or consent of instructor.

**IB 425 Plant Secondary Metabolism**  credit: 3 hours.

The natural products of plants with emphasis on biosynthesis, distribution and function of relevant compounds of ecological, pharmacological, toxicological, and economic interest. Offered in alternate years. Prerequisite: MCB 354 or MCB 450; or consent of instructor.

**IB 426 Env and Evol Physl of Animals**  credit: 3 hours.

Physiological adaptations of invertebrate and vertebrate animals to diverse aquatic and terrestrial environments and the extreme habitats embodied therein. Prerequisite: MCB 150; IB 202; CHEM 232; or consent of instructor.

**IB 427 Insect Physiology**  credit: 4 hours.

The principal physiological and biochemical functions of insects. Lecture and laboratory. Offered in alternate years. Prerequisite: IB 202 and IB 401; or consent of instructor.

**IB 428 Primate Form and Behavior**  credit: 3 OR 4 hours.

Same as ANTH 443. See ANTH 443.

**IB 429 Animal Behavior**  credit: 3 hours.

Introductory course emphasizing how patterns of behavior promote survival, change through evolution, and are modified by the environment. Same as ANSC 466 and ANTH 442. Prerequisite: IB 150 and MCB 150; or consent of instructor. Credit is not given for both IB 429 and ANSC 363.

**IB 430 Hormones and Behavior**  credit: 3 OR 4 hours.

Same as NEUR 444 and PSYC 444. See PSYC 444.

**IB 431 Behavioral Ecology**  credit: 3 hours.

In-depth examination of areas of current interest at the interface of behavior, ecology, and evolution; focuses on communication, foraging, and social behavior. Offered in alternate years. Prerequisite: IB 302 or IB 429; or consent of instructor.

**IB 432 Genes and Behavior**  credit: 3 hours.
Concepts, methods, and problems in the analysis of the relationship between genes and behavior, the complex neurobiological processes that mediate action on behavior, in appropriate ecological and evolutionary contexts. Same as ANTH 432, NEUR 432, and PSYC 432. Prerequisite: IB 150 and either IB 204 or IB 429 or consent of instructor.

IB 433  **Comparative Anatomy**  credit: 5 hours.
Comparative structure, evolution, and classification of chordate animals emphasizing vertebrates. Strong attention to relationships of fossils to present animals. Function of parts, their evolution, and some developmental aspects. Lab involves dissection of vertebrates. Lecture and Laboratory. Same as ANTH 434. Prerequisite: IB 202, IB 302, or consent of instructor.

IB 437  **Primate Behav Endocrinology**  credit: 3 OR 4 hours.
Same as ANTH 437. See ANTH 437.

IB 440  **Plants and Global Change**  credit: 3 hours.
Same as CPSC 431 and NRES 431. See CPSC 431.

IB 443  **Evolutionary Ecology**  credit: 3 hours.
Emphasizes the evolution of life-history strategies in plants and animals (reproductive rates, life cycles, sex ratios, breeding and mating systems) and the coevolution of animals and plants (pollination, dispersal, and herbivory). Offered in alternate years. Prerequisite: IB 203 or equivalent; IB 302; or consent of instructor.

IB 444  **Insect Ecology**  credit: 3 OR 4 hours.
Discussion of the practical and theoretical aspects of ecology in relation to insects as individuals, populations, and communities; emphasis on the role of insects in the environment. Offered in alternate years. Lecture only, 3 hours; with laboratory, 4 hours. Prerequisite: IB 150 and MCB 150 or consent of instructor.

IB 445  **Chemical Ecology**  credit: 3 hours.
Chemical bases of ecological interactions among organisms; topics include the chemical structures and functions of messenger compounds important in inter- and intraspecific interactions among plants, insects, higher animals, fungi, microbes, and their environments. Offered in alternate years. Prerequisite: IB 150 and MCB 150 and CHEM 232; or consent of instructor.

IB 446  **Tropical Ecology**  credit: 3 hours.
Ecological principles as they apply to plants, animals, and humans in tropical habitats; topics include climate, soils and ecosystem processes; seasonality and habitat diversity; community structure, species diversity, and plant-animal interactions; regrowth following natural and human disturbances; and human use and abuse of tropical forests. Offered in alternate years. Prerequisite: IB 203; or consent of instructor.

IB 447  **Field Ecology**  credit: 1 hours.
Study of habitats in various sections of North America during spring vacation or intersession. Outdoor cooking and camping; transportation in University cars. May be repeated to a maximum of 3 hours. Prerequisite: IB 203; or consent of instructor.

IB 449  **Limnology**  credit: 4 OR 5 hours.
Fresh water biology; study of the lake, pond, and river with emphasis on the physical environment as well as on the plants and animals which live in fresh water. Lectures, discussions, laboratory, and field work. Offered in alternate years. 5 undergraduate hours. 4 graduate hours. Prerequisite: IB 203 or consent of instructor.

IB 450  **Stream Ecology**  credit: 3 hours.
Same as CEE 432. See CEE 432.

IB 451  **Conservation Biology**  credit: 4 hours.
Synthesis of conservation biology with an emphasis on the preservation of biological diversity and its evolutionary potential. Laboratory includes an introduction to the use of modern molecular techniques in conservation biology, computer simulation modeling, and field conservation problem solving. Same as CPSC 436 and ENVS 420. Offered in alternate years. Prerequisite: IB 203 or consent of instructor.

IB 452  **Ecosystem Ecology**  credit: 3 hours.
Distribution and structure of ecosystems on earth; integration of multiple disciplines to gain a holistic view of ecosystem function; ecosystem concepts as they apply to understand natural and anthropogenic environmental change. Same as NRES 462. Prerequisite: IB 203 or IB 441; CHEM 102 and CHEM 104; or consent of instructor.

IB 453  **Community Ecology**  credit: 3 hours.
The direct and indirect interactions among species that determine the structure and composition of plant and animal communities. Emphasis will be on the maintenance of species diversity and its consequences at both local and regional scales. Same as NRES 452. Offered in alternate years. Prerequisite: IB 203, IB 441, or consent of instructor.
IB 454  **Latin American Ethnobotany**  credit: 3 OR 4 hours.
Same as ANTH 401, HIST 409, and LAST 401. See LAST 401.

IB 461  **Ornithology**  credit: 4 hours.
Structure, function, ecology, behavior, and evolution of the birds of the world; laboratory devoted to anatomy and identification; and
field studies devoted to identification and behavior of birds. Independent research project and two optional weekend field trips. Same as
NRES 461. Offered in alternate years. Prerequisite: IB 203; or consent of instructor.

IB 462  **Mammalogy**  credit: 5 hours.
Classification, distribution, structure, function, life history, evolution and identification of mammals. Lecture/discussions, laboratory and
field work. The laboratory includes vertebrate dissection. Offered in alternate years. Prerequisite: IB 202 and IB 203; or consent of
instructor.

IB 463  **Ichthyology**  credit: 4 hours.
Classification, anatomy, ecology, behavior, distribution, and evolution of fishes of the world. Emphasis is on morphological, ecological,
and behavioral diversification of fishes in a phylogenetic context. Laboratory devoted to anatomy and identification. Offered in alternate
years. Prerequisite: IB 302; or consent of instructor.

IB 464  **Herpetology**  credit: 4 hours.
Classification, diversity, structure, function, ecology, behavior and evolution of amphibians and reptiles. Laboratory devoted to anatomy
and identification. Offered in alternate years. Prerequisite: IB 302; or consent of instructor.

IB 466  **Invertebrate Zoology**  credit: 4 hours.
Invertebrates; structure and development; application of biological principles; specific and comparative morphology of the invertebrates;
and coordination of structure and function, origin, development, and life histories. Lecture and laboratory. Offered in alternate years.
Prerequisite: IB 302; IB 203 recommended; or consent of instructor.

IB 467  **Principles of Systematics**  credit: 4 hours.
Comprehensive survey of the theory and methodology of systematics as they are applied today to all groups of organisms, with a
practical experience in the acquisition and analysis of systematic data. Offered in alternate years. Prerequisite: IB 302 and IB 335 or IB
468; or consent of instructor.

IB 468  **Insect Classification and Evol**  credit: 4 hours.
Analytical survey of the classification and evolution of the orders and principal families of insects, with practical experience in the
identification of insects at these taxonomic levels; field trips required. Lecture and laboratory. Offered in alternate years. Prerequisite: IB
460 or consent of instructor.

IB 469  **Evolutionary Survey of Plants**  credit: 4 hours.
Lecture and laboratory course dealing with the structure, reproduction, and evolutionary origins of land plants as represented by living
mosses, liverworts, ferns, lycopods, horsetails, conifers, cycads and flowering plants. Prerequisite: IB 102 or IB 103 or IB 150; IB 302
recommended; or consent of instructor.

IB 470  **Field Botany**  credit: 5 hours.
Identification and classification of native and naturalized flowering plants of eastern North America. Lecture and laboratory. Offered in
the summer session only. Prerequisite: IB 103 or IB 150; or consent of instructor.

IB 471  **General Mycology**  credit: 4 hours.
Structure, classification, and identification of fungi, including those of economic importance. Prerequisite: IB 150 and MCB 150; IB 302
recommended; or consent of instructor.

IB 472  **Plant Molecular Biology**  credit: 1 hours.
The basic concepts and methodologies of measuring plant gene expression and gene product activity and constructing transgenic
plants are presented and discussed. Serves as a gateway to specialized methodology approaches covered in IB 473, IB 474, and IB
475. Same as CPSC 462. Prerequisite: MCB 150 and IB 204; or consent of instructor.

IB 473  **Plant Genomics**  credit: 1 hours.
Provides broad overview of structural and functional genomics, including genetic and physical mapping, whole genome sequencing,
comparative genomic analysis, evolution of gene families and repetitive sequences, genome-wide expression analysis. Emphasis
on structural and comparative genomics with brief introduction to functional genomics and bioinformatics. Same as CPSC 467.
Prerequisite: MCB 250; IB 472; or consent of instructor.

IB 474  **Plant Proteomics**  credit: 1 hours.
Broad introduction to plant proteomics, including a survey of contemporary methods and their applications for protein identification and the study of posttranslational modifications and protein-protein interactions. These topics will be studied in relation to the proteomes of organs and subcellular compartments, stress, nutrition, and signal transduction. Same as CPSC 468. Prerequisite: MCB 354; IB 472; or consent of instructor.

**IB 475 Plant Metabolomics**  credit: 1 hours.

An introduction to plant metabolomics. Metabolites are not only compounds being modified in pathways, but also are signals that connect metabolic homeostasis to growth and development of organs and cells in plants. Introduces the complexities of metabolism profiling, the dynamics of metabolite changes in plants under stress, and the current concepts on pathway tracing and elucidation. Includes an introduction to basic and advanced research methods, including the use of statistical methods and bioinformatics. Same as CPSC 469. Prerequisite: MCB 354; IB 472; or consent of instructor.

**IB 477 Concepts and Tools of Genomics**  credit: 3 hours.

Same as CPSC 466. See CPSC 466.

**IB 481 Biology of Disease Vectors**  credit: 4 hours.

The major groups of arthropods and associated pathogens that affect the health and well-being of humans and other animals. Training will include identification, classification, methods of injury, habits, vector competence, and control of insects, ticks and mites that are predators, parasites, or vectors of disease. The course will examine and use both classical and molecular technologies to address epidemiological, ecological, and diagnostic factors associated with arthropod-borne diseases. Graduate students required to write a term paper. Offered in alternate years. Prerequisite: One year college biology, IB 460; or consent of department.

**IB 482 Insect Pest Management**  credit: 4 hours.

The principles underlying the control of important insect pests of agriculture and of human and animal health; emphasis on integrated pest management involving a systems approach which combines biological, cultural, and chemical suppressive factors into ecologically sound and socially and economically acceptable technology. Lecture and laboratory. Offered in alternate years. Same as CPSC 479. Prerequisite: IB 150 or equivalent; or consent of department.

**IB 483 Insect Pathology**  credit: 4 hours.

The general principles of pathology as they apply to insects; includes non-infectious and infectious diseases caused by viruses, bacteria, fungi, protozoa, and nematodes. Studies the epizootiology of naturally occurring insect disease and the use of insect pathogens as microbial control agents. Lecture and laboratory. Offered every three years. Same as CPSC 475 and NRES 443. Prerequisite: IB 150 and MCB 150 or consent of instructor.

**IB 484 Biological Control**  credit: 3 hours.

Biological control is an exercise in applied ecology that is a powerful tool in the management of natural resources and in pest management. The course will highlight the theory behind this discipline and the current and potential applications. Students will also get an understanding of a practical biological control program. Same as CPSC 477. Offered in alternate years. Prerequisite: IB 444 or IB 482; or consent of instructor.

**IB 485 Environmental Toxicology**  credit: 3 hours.

Explores toxicological, environmental, public health, occupational and ecological aspects of the use and release of toxic substances in the environment; features case histories of environmental contamination that illustrate ecological, health, and social aspects of pollution; emphasizes biochemical mechanisms and ecosystem consequences. Same as CHLH 461, CPSC 435, and ENVS 431. Prerequisite: A college chemistry course and a college biology course; or consent of instructor.

**IB 486 Pesticide Toxicology**  credit: 3 OR 4 hours.

Examines the biological effects of major classes of insecticides and herbicides, and of selected individual fungicides, including: toxicity to nontarget organisms, persistence and fate in the environment, biotransformation, and ecological consequences. Current regulations on pesticide testing will also be presented. The mechanism of action on target species will be discussed only in relation to effects on nontarget organisms. Offered in alternate years. Same as ENVS 433 and VB 534. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college chemistry and one year of college biology; or consent of instructor.

**IB 487 Math Modeling in Life Sciences**  credit: 3 OR 4 hours.

Same as ANSC 448 and STAT 458. See ANSC 448.

**IB 490 Independent Study**  credit: 1 TO 5 hours.

Laboratory and/or field research supervised by faculty members in the School of Integrative Biology. A written report is required. May be repeated. No more than a combined maximum of 10 hours of IB 390 or IB 490 may count toward graduation for IB majors. Prerequisite: Consent of instructor.

**IB 491 Biological Modeling**  credit: 3 OR 4 hours.

Same as ANSC 449, CPSC 448, and GEOG 468. See GEOG 468.
IB 492  **Spatial Ecosystem Modeling**  credit: 3 OR 4 hours.
Same as CPSC 449, GEOG 469, and NRES 469. See GEOG 469.

IB 493  **Statistical Ecology**  credit: 4 hours.
Study of methods used in the collection and analyses of ecological data. Emphasis on sampling, experimental design, multivariate techniques, exploratory analyses, and computer intensive applications such as exact tests and permutation procedures. Laboratory emphasis on analyses and interpretation of ecological data with statistical software. Offered in alternate years. Same as NRES 493. Prerequisite: One course in ecology such as IB 203 including basic concepts in population and community ecology and one course in statistics such as IB 488 or CPSC 440 including basic concepts of sampling, hypothesis testing/inference, and techniques such as t-tests and ANOVA; or consent of instructor.

IB 494  **History of Biology**  credit: 2 TO 4 hours.
Same as HIST 465. See HIST 465.

IB 495  **Philosophy of Biology**  credit: 3 OR 4 hours.
Same as PHIL 473. See PHIL 473.

IB 496  **Special Courses**  credit: 1 TO 5 hours.
Experimental and temporary courses. May be repeated as topics vary. 1 to 5 undergraduate hours. 1 to 4 graduate hours. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

IB 504  **Genomic Analysis of Insects**  credit: 3 hours.
Comprehensive and integrated presentation of insect genomic analysis from the molecular level to that of the population; concepts are applied to certain aspects of insect population regulation. Prerequisite: IB 204 or consent of instructor.

IB 505  **Bioinformatics & Systems Biol**  credit: 4 hours.
Same as CPSC 567. See CPSC 567.

IB 506  **Applied Bioinformatics**  credit: 4 hours.
Same as ANSC 542 and CPSC 569. See ANSC 542.

IB 507  **Statistical Genomics**  credit: 3 OR 4 hours.
Same as ANSC 545 and CPSC 545. See ANSC 545.

IB 508  **Multivariate Biostatistics**  credit: 4 hours.
Same as PATH 528. See PATH 528.

IB 510  **Discussions in Plant Biology**  credit: 0 TO 1 hours.
All graduate students in plant biology, except those with conflicting teaching assignments, are required to register in and attend the general seminar. Approved for both letter and S/U grading. No credit given except to those students presenting the results of their Ph.D. thesis research.

IB 513  **Disc in Plant Physiology**  credit: 1 hours.
May be repeated. Approved for both letter and S/U grading.

IB 514  **Disc in Systematics Biology**  credit: 1 hours.
Approved for both letter and S/U grading.

IB 516  **Ecosystem Biogeochemistry**  credit: 4 hours.
Same as NRES 516. See NRES 516.

IB 518  **Disc in Plant Ecology**  credit: 1 hours.
Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours.

IB 519  **Disc in Photosynthesis**  credit: 0 TO 1 hours.
May be repeated to a maximum of 6 hours. Approved for both letter and S/U grading.

IB 524  **Plant Biochemistry**  credit: 4 hours.
Same as CPSC 588 and HORT 588. See CPSC 588.

IB 526  **Seminar in Entomology**  credit: 0 TO 1 hours.
Discussions, reviews, and appraisals of special topics in the field of entomology. May be repeated to a maximum of 4 hours. Approved for both letter and S/U grading.

IB 542 **Environmental Plant Physiology**  credit: 4 hours.
The interaction of plants and environment at the level of the whole organism, extending to the cell and the community; emphasis on heat and mass transfer, plant and soil potentials, and effects of light on growth. Offered in alternate years. Same as CPSC 538. Prerequisite: IB 420; consent of instructor.

IB 543 **Seminar in Primate Ecology**  credit: 2 OR 4 hours.
Same as ANTH 543. See ANTH 543.

IB 545 **Fish and Wildlife Ecol Seminar**  credit: 2 hours.
Modern ecological principles and concepts to specific problems in fisheries and wildlife. Approved for both letter and S/U grading. Offered in alternate years.

IB 546 **Topics in Ecology & Evolution**  credit: 1 hours.
Speaker seminar series featuring discussion, review and critical analysis of general concepts and specific problems in ecology and evolution. May be repeated to a maximum of 10 hours. Approved for both letter and S/U grading.

IB 552 **Concepts in Ecology**  credit: 2 hours.
Discussion, review, and critical analysis of general concepts and specific problems in ecology with new topics each term. May be repeated. Approved for both letter and S/U grading.

IB 574 **Insect Resistance Management**  credit: 2 hours.
Same as CPSC 574 and NRES 574. See NRES 574.

IB 590 **Individual Topics**  credit: 2 TO 12 hours.
Individual topics in research conducted under the supervision of faculty members in the School of Integrative Biology. Designed for graduate students who would like to become more familiar with specialized fields of study prior to committing themselves to a specific area for their doctorate degree. May be repeated to a maximum of 16 hours. Approved for S/U grading only. Prerequisite: Consent of instructor.
Industrial Engineering

Industrial and Enterprise Systems Engineering
Head of Department: Jong-Shi Pang
Department Office: 117 Transportation Building, 104 South Mathews, Urbana
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IE 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

IE 297  Independent Study  credit: 1 TO 4 hours.
Individual investigations of any phase of Industrial Engineering. May be repeated in separate terms. Prerequisite: Consent of instructor.

IE 300  Analysis of Data  credit: 3 hours.
The nature of probabilistic models for observed data; discrete and continuous distribution function models; inferences on universe parameters based on sample values; introduction to control charts, acceptance sampling, and measurement theory. Credit is not given for both IE 300 and either CEE 202 or GE 331. Prerequisite: MATH 241.

IE 310  Operations Research  credit: 4 hours.
Introduction to deterministic and stochastic models in operations research. Linear programming, integer programming, network models and nonlinear programming, review of basic probability, Bernoulli processes, Markov chains, Markov processes, and queuing theory. Credit is not given for both IE 310 and either CEE 201 or GE 330. Prerequisite: IE 300; credit or concurrent registration in MATH 415.

IE 330  Industrial Quality Control  credit: 3 hours.
Contemporary concepts and methods for quality and productivity design and improvement; philosophies of Deming, Taguchi, and others leading the quality management and engineering movement; Shewhart's methods for statistical process control; process capability analysis; statistical methods for tolerance assessment; process control methods employing attribute data; introduction to design of experiments, concepts, and methods. Prerequisite: IE 300.

IE 340  Human Factors  credit: 4 hours.
Same as AVI 358 and PSYC 358. See PSYC 358.

IE 360  Facilities Planning and Design  credit: 3 hours.
Facility planning, plant layout design, and materials handling analysis; determination of facilities requirements, site selection, materials flow, use of analytical and computerized techniques including simulation, and applications to several areas such as manufacturing, warehousing, and office planning. Prerequisite: IE 310.

IE 361  Production Planning & Control  credit: 3 hours.
The scope of production systems and the activities involved in their design, establishment, management, operation, and maintenance; mathematical and computer models for planning and control of facilities, human resources, projects, products, material, and information in production systems. Prerequisite: IE 310.

IE 390  Seminar  credit: 0 hours.
Series of lectures by faculty and invited authorities from the profession concerning the ethics and practices of industrial engineering in their relationship to other fields of engineering, economics, and the problems of society. Approved for S/U grading only.

IE 397  Independent Study  credit: 1 TO 4 hours.
Individual investigations or studies of any phase of Industrial Engineering. May be repeated in separate terms. Prerequisite: Consent of instructor.

IE 398  Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in industrial engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

IE 400  Design & Anlys of Experiments  credit: 3 OR 4 hours.
Concepts and methods of design of experiments for quality design, improvement and control; simple comparative experiments, including concepts of randomization and blocking, and analysis of variance techniques; factorial and fractional factorial designs;
Taguchi's concepts and methods; second-order designs, response surface methodology. All topics are treated through engineering applications and case studies. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: IE 300.

**IE 410  Stochastic Processes & Applic**  credit: 3 OR 4 hours.
Modeling and analysis of stochastic processes. Transient and steady-state behavior of continuous-time Markov chains; renewal processes; models of queuing systems (birth-and-death models, embedded-Markov-chain models, queuing networks); reliability models; inventory models. Familiarity with discrete-time Markov chains, Poisson processes, and birth-and-death processes is assumed. Same as CS 481. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: IE 310.

**IE 411  Optimization of Large Systems**  credit: 3 OR 4 hours.
Practical methods of optimization of large-scale linear systems including extreme point algorithms, duality theory, parametric linear programming, generalized upper bounding technique, price-directive and resource-directive decomposition techniques, Lagrangian duality, Karmarkar's algorithm, applications in engineering systems and use of state-of-the-art computer codes. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: IE 310 and MATH 415.

**IE 412  OR Models for Mfg Systems**  credit: 3 OR 4 hours.
Introduction to the use of operations research techniques to problems in manufacturing and distribution. Single and multi-stage lot sizing problems, scheduling and sequencing problems, and performance evaluation of manufacturing systems. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: IE 310.

**IE 413  Simulation**  credit: 3 OR 4 hours.
Introduction to the use of discrete-event simulation in the modeling and analysis of complex systems using a simulation package. Components of simulation software, including data structures and event-list processing; verification and validation of simulation models; input modeling, including selection of probability distributions and random variate generation; statistical analysis of output data. Same as CS 482. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: IE 310.

**IE 430  Economic Found of Quality Syst**  credit: 3 OR 4 hours.
Introduction to total quality systems for planning, developing, and manufacturing world-class products. Covers the economic foundations of total quality. Product value, cost, pricing, environmental quality, activity-based costing, design for assembly, organization structure, lead time, innovation, Taguchi methods, simulation-based significance testing, Strategic Quality Deployment, statistical process control, and conjoint analysis. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: IE 300.

**IE 431  Quality Engineering**  credit: 3 hours.
Quality Engineering principles and the Six Sigma Define-Measure-Analyze-Improve-Control (DMAIC) process. Application of concepts and methods of statistical process control, designed experiments, and measurement systems analysis to cases of quality and productivity improvement; application of the fundamentals of quality engineering and the Six Sigma to areas of produce development, service enterprise, and manufacturing processes. Prerequisite: GE 331 or IE 300.

**IE 440  Occupational Biomechanics**  credit: 3 OR 4 hours.
Biomechanical concepts and principles that underlie manual work. Contemporary tools and methods for measuring human physical attributes, evaluating human mechanical capabilities, and modeling human musculoskeletal system or subsystems. Applications of concepts, principles, data, and models to the design of work situations for the purposes of improving human performance and preventing musculoskeletal traumas and disorders. Prerequisite: IE 340 or TAM 212.

**IE 441  Interactive Syst Model & Desgn**  credit: 3 OR 4 hours.
Analysis and modeling of human-machine interaction in large-scale dynamic systems, development of graphical user interface and interactive real-time simulation environments, and human performance evaluation. Utilizes Motif-based user interfaces and the C++ object-oriented programming language. Students work in teams to design, implement, and evaluate graphical interactive simulation environments for complex engineering systems such as manufacturing systems. Same as AVI 441. Prerequisite: CS 101, IE 300, and IE 340.

**IE 442  Safety Engineering**  credit: 3 OR 4 hours.
Industrial accident prevention; safe plant layout; safety in maintenance; boilers and pressure vessels; design and application of machine guards; material handling and storage; hand and power tools; welding hazards; electrical hazards; flammable liquids and fire protection; industrial health engineering; toxic materials. 3 undergraduate hours. 3 or 4 graduate hours.

**IE 445  Hum Perf and Eng Psych**  credit: 3 OR 4 hours.
Same as AVI 456 and PSYC 456. See PSYC 456.

**IE 446  Hum Comp Interaction Lab**  credit: 4 hours.
Same as AVI 429 and PSYC 429. See PSYC 429.

**IE 470  Senior Engineering Project**  credit: 3 hours.
Students are assigned an actual, real world design problem for which they must develop, evaluate, and recommend alternative solutions and satisfy realistic constraints that include most of the following considerations: economic; environmental; sustainability; manufacturability; ethical; health and safety; social; political. 3 undergraduate hours. No graduate credit. Prerequisite: Concurrent enrollment in no more than two required IE courses; completion of all other required courses.

This course satisfies the General Education Criteria for a:

UIUC: Advanced Composition

IE 485  MEMS Devices & Systems  credit: 3 hours.
Same as ECE 485 and ME 485. See ECE 485.

IE 496  Honors Project  credit: 1 TO 4 hours.
Special project or reading course for James Scholars in engineering. 1 to 4 undergraduate hours. No graduate credit. Prerequisite: Consent of instructor.

IE 497  Independent Study  credit: 1 TO 4 hours.
Independent study of advanced problems related to industrial engineering. May be repeated. Prerequisite: Consent of instructor.

IE 498  Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in industrial engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 9 hours.

IE 510  Applied Nonlinear Programming  credit: 4 hours.
Optimization of nonlinear systems, including: a survey of classical methods and concepts such as the Lagrangian method, the Jacobian method, and Kuhn-Tucker conditions; modern algorithms; numerical methods for digital computers; applications in engineering design; use of state-of-the-art computer codes. Prerequisite: IE 310.

IE 511  Integer Programming  credit: 4 hours.
Optimization of linear systems involving integer variables and discrete alternatives. Modeling; computational complexity; matroids; branch and bound methods; Langrangian and surrogate duality; cutting plane methods and polyhedral theory; special structured problems such as knapsack, set packing and covering, traveling salesman, etc. Prerequisite: IE 411 or MATH 482.

IE 512  Network Analysis of Systems  credit: 4 hours.
Basic concepts, theories, and techniques of systems analysis, including modeling of large scale systems, forecasting, planning, control, and information handling; modeling of systems with network techniques, including distance, flow, and project networks; advanced network topics such as out-of-kilter algorithm and project resource analysis. Same as CEE 516. Prerequisite: IE 361 or CEE 201.

IE 513  Optimal System Design  credit: 4 hours.
Fundamental theories for optimal product realization: (1) product planning-demand modeling, customers' preference analysis, and profit modeling under uncertainty; (2) product design-fundamental of engineering optimization theory; (3) product development-analitical problem formulation to achieve the performance targets assigned at the enterprise level and the engineering design level. Core components of modeling, solving, and validating optimization models using quantitative mathematical criteria. An individual or group term project is required. Prerequisite: GE 330 or IE 310.

IE 540  Design of Man-Machine Systems  credit: 4 hours.
Input-output models of man as an information processor, controller, and decision maker are critically evaluated and applied to the analysis and design of specific man-machine systems. Intended for graduate students working in areas of man-machine systems, engineering psychology, control systems, or operations research. Prerequisite: ME 340 and IE 300.

IE 542  Cooperative Problem Solving  credit: 4 hours.
Advanced graduate seminar on problem-solving models and taxonomies, models of coordination of activity and communication among multiple agents, design of human-machine cooperative problem-solving systems, adaptive automation, and intelligent decision support. Readings drawn from work in pragmatics, distributed artificial intelligence, cognitive engineering, and other related areas. Same as AVI 542. Prerequisite: IE 542. Credit or concurrent registration in at least one of CS 440, IE 540, PSYC 527.

IE 550  Manufacturing Process Planning  credit: 4 hours.
Representation of mechanical solids; reasoning about shape of a single solid; manufacturing and design features -- representation and recognition; reasoning about multiple solids -- machining path generation, assembly sequencing, path planning and obstacle avoidance; task-level robot programming; inspection planning. Prerequisite: ME 451 or ME 452.

IE 551  Control of Machine Systems  credit: 4 hours.

**IE 590 Seminar** credit: 0 hours.
Required of all graduate students each term with the exception of doctoral candidates who have passed their preliminary examination. Presentation and discussion of significant developments in industrial engineering. Approved for S/U grading only. May be repeated.

**IE 597 Independent Study** credit: 1 TO 4 hours.
Independent study of advanced problems related to industrial engineering. May be repeated in the same or separate terms if topics vary to a maximum of 12 hours. Prerequisite: Consent of instructor.

**IE 598 Special Topics** credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in industrial engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

**IE 599 Thesis Research** credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
INFO 102  **Little Bits to Big Ideas**  credit: 4 hours.
Broad introduction to the nature, capabilities, and limitations of computing. Topics range from the way data is represented and stored, to the way today's computers work, to the general ideas of algorithms and computational efficiency, to the future of computing. Covers "Great Ideas" across various areas of the field, including, for example, cryptography and internet security, problem solving, modeling and simulation, and artificial intelligence.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

INFO 103  **Introduction to Programming**  credit: 3 hours.
Introduction to computer programming with non-technical focus. Elementary principles of object-oriented programming. Problem solving in various domains. Areas of application include graphics and multimedia, game design, programming in a 3D environment, computer art and poetry. Basic concepts and skills covered include data types and data representation, arithmetic, logical, and string operations, conditional execution, iteration recursion, modular programming, functions, procedures, libraries and code re-use. Language used and problem domain area may vary by semester.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

INFO 202  **Social Aspects Info Systems**  credit: 3 hours.
Explores the way in which information technologies have and are transforming society and how these affect a range of social, political and economic issues from the individual to societal levels. Same as LIS 202 and MS 202. Prerequisite: Sophomore standing.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

INFO 390  **Special Topics**  credit: 1 TO 3 hours.
Explores a variety of informatics topics. Topics and prerequisites vary by section; see current Class Schedule for details. May be repeated indefinitely in separate terms when taken as different sections.

INFO 399  **Individual Study**  credit: 1 TO 3 hours.
Individual study in a subject related to informatics not covered in normal course offerings. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: Consent of instructor.

INFO 490  **Special Topics**  credit: 3 hours.
Topics of current interest. May be repeated in separate terms. Prerequisite: Consent of instructor. Other prerequisites as specified for each topic offering. See Class Schedule.

INFO 599  **Thesis Research**  credit: 0 TO 16 hours.
Research for Ph.D. thesis. May be repeated in separate terms. Prerequisite: Instructor approval required.
ITAL 101 **Elementary Italian I**  credit: 4 hours.
For students who have no credit in Italian.

ITAL 102 **Elementary Italian II**  credit: 4 hours.
Continuation of ITAL 101. Prerequisite: ITAL 101 or one year of high school Italian.

ITAL 103 **Intermediate Italian I**  credit: 4 hours.
Rapid reading, review of grammar, composition, and conversation. Prerequisite: ITAL 102 or two years of high school Italian.

ITAL 104 **Intermediate Italian II**  credit: 4 hours.
Continuation of ITAL 103. Prerequisite: ITAL 103 or three years of high school Italian.

ITAL 191 **Freshman Honors Tutorial**  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars and Associates. May be repeated one time to a maximum of 6 hours. Prerequisite: Consent of departmental honors adviser in Italian.

ITAL 199 **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated to a maximum of 5 hours. Approved for both letter and S/U grading.

ITAL 200 **Intro Italian Literature**  credit: 3 hours.
Emphasis on methodology for critical analysis of literary texts and on major periods and movements in their cultural and historical contexts. Prerequisite: ITAL 104 or consent of instructor.

ITAL 210 **Practical Review Italian**  credit: 3 hours.
Reviews major challenges in Italian grammar, with particular emphasis on the verb system (major tenses and moods, morphology, and aspect) and areas of contrast with English. Prerequisite: Credit or concurrent enrollment in ITAL 104 or equivalent.

ITAL 220 **Comtemp Italian Oral & Written**  credit: 3 hours.
Training in oral-aural skill and in writing. Prerequisite: ITAL 210 or consent of instructor.

ITAL 240 **Italy Middle Ages & Renaiiss**  credit: 3 hours.
The development of Medieval Italian civilization in a literary context from the Sicilian School of love poetry to the early Renaissance in Florence; lectures and readings are in English. Same as CWL 240 and MDVL 240.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ITAL 270 **Introduction to Italian Cinema**  credit: 3 hours.
Introduction to major films, movements and directors in the Italian tradition, paying particular attention to questions of national identity, gender and political and social history. Knowledge of Italian not required.

ITAL 310 **Advanced Grammar**  credit: 3 hours.
Study of the structure of modern Italian in both its phonological and syntactic aspects for the student who already has a functional command of the language, with an emphasis on developing ability to analyze and interpret grammatical structures. Prerequisite: ITAL 210 or consent of instructor.

ITAL 380 **Ital Business & Profess**  credit: 3 hours.
Builds preexisting language skills through the study of Italian business practices: financial systems, transactions, banking, import/export and commercial correspondence. Prerequisite: ITAL 210 or equivalent.

ITAL 390 **Spec Topics Italian Studies**  credit: 2 TO 4 hours.
Selected substantive readings for independent study on a given special topic of Italian literature, culture, language, or linguistics. May be repeated. Prerequisite: ITAL 104 and consent of instructor.
ITAL 400  **Italian Speakers Rom Langs**  credit: 3 hours.
Accelerated language learning course designed for speakers of Romance languages. The focus will be primarily on those linguistic structures specific to Italian which differ significantly from equivalents in other Romance languages. Early emphasis on production skills; comprehension-based skills will be introduced in rapid succession. Students may not receive credit for ITAL 400 and ITAL 101 and ITAL 102. Prerequisite: Native or near-native proficiency in a Romance language (SPAN, FR, PORT, or RMLG).

ITAL 406  **Italian Culture**  credit: 3 hours.
Introduction to factors that have shaped present-day Italy; basic concepts contributing to understanding its present social and cultural development; taught in Italian. Prerequisite: ITAL 200 or ITAL 220, or consent of instructor.

ITAL 413  **Dante**  credit: 3 hours.
Interpretation of Dante's Divine Comedy with special attention to its position in the medieval world; a knowledge of Italian not required. Same as CWL 413 and MDVL 413.

ITAL 414  **Petrarch & Boccaccio**  credit: 3 hours.
Studies in Petrarch and Boccaccio; nonmajors in Italian may read the works in translation; lectures are in English. Same as CWL 414 and MDVL 414. Prerequisite: Fulfillment of campus rhetoric requirement.

ITAL 420  **Masterpieces Renaisss Lit**  credit: 3 hours.
Reading of masterpieces of the 1400 and 1500s and a study of their predecessors and influence; nonconcentrators in Italian may read the works in translation; lectures are in English. Content rotates. Same as CWL 420 and MDVL 420. May be repeated to a maximum of 6 hours with consent of instructor. Prerequisite: Fulfillment of campus rhetoric requirement.

ITAL 435  **Intro Romance Ling**  credit: 3 OR 4 hours.
Same as FR 462, LING 462, PORT 435, RMLG 435 and SPAN 435. See SPAN 435.

ITAL 440  **Modern Italian Novel**  credit: 3 hours.
Appreciation of the modern Italian novel through a close reading of some representative works (e.g., Verga, Moravia, Vittorini, Pavese). Prerequisite: ITAL 200 or consent of instructor.

ITAL 450  **Italian Syntax & Phonology**  credit: 3 hours.
Introduction to the essential syntactic and phonological structures of Modern Standard Italian in combination with appropriate discussion of corresponding linguistic concepts. Prerequisite: ITAL 310 and ITAL 402, or consent of instructor.

ITAL 460  **Principles of Language Testing**  credit: 3 OR 4 hours.
Same as EIL 460, EPSY 487, FR 460, GER 460, PORT 460, SLS 460, and SPAN 460. See EIL 460.

ITAL 470  **Topics in Italian Cinema**  credit: 3 OR 4 hours.
An in-depth examination of a particular director, genre or school from the Italian cinematic tradition (e.g., Fellini, Italian horror, or noerealism); topic will vary each semester. No knowledge of Italian is required. Same as CINE 470. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours.

ITAL 482  **Computer Foreign Lang Tchg**  credit: 4 hours.
Same as CLCV 482, EIL 482, FR 482, GER 482, HUM 482, LING 486, PORT 482, SLAV 482, and SPAN 482. See HUM 482.

ITAL 489  **Theoretical Foundations of SLA**  credit: 3 OR 4 hours.
Same as EIL 489, FR 481, GER 489, LING 489, PORT 489, SLS 489, and SPAN 489. See EIL 489.

ITAL 490  **Italy, Modernity & Theory**  credit: 3 OR 4 hours.
Selected substantive readings on a specialized topic in Italian literature, culture, theory, or linguistics. 3 undergraduate hours. 4 graduate hours. May be repeated in the same semester to a maximum of 6 undergraduate hours or 8 graduate hours if topic varies. May be repeated in separate semesters to a maximum of 9 undergraduate hours or 12 graduate hours if topic varies. Prerequisite: At least two 200-level courses in Italian, or consent of instructor.

ITAL 491  **Honors Senior Thesis**  credit: 2 hours.
For candidates for honors in Italian. 2 undergraduate hours. May be repeated.

ITAL 510  **Seminar in Italian Studies**  credit: 4 hours.
Graduate seminar in Italian culture, literature, linguistics, or critical theory. Topics vary. May be repeated in the same semester to a maximum of 8 hours as topics vary. May be repeated in separate semesters to a maximum of 16 hours as topics vary.

ITAL 559  **Sem Romance Ling**  credit: 4 hours.
ITAL 563  College Teaching Foreign Langs  credit: 2 OR 4 hours.
Same as EIL 563, FR 563, GER 563, PORT 563, RUSS 563, and SPAN 563. See FR 563.

ITAL 571  Proseminar For Lang Tchg  credit: 4 hours.
Same as PORT 571 and SPAN 571. See SPAN 571.

ITAL 572  Theory and Literary Criticism  credit: 4 hours.
Same as PORT 572 and SPAN 572. See SPAN 572.

ITAL 580  Classroom Lang Acquisition  credit: 4 hours.
Same as EIL 580, FR 580, GER 580, PORT 580, SLS 580, and SPAN 580. See SPAN 580.

ITAL 584  Theories in SLA  credit: 4 hours.
Same as CI 584, EALC 584, EIL 584, EPSY 563, FR 584, GER 584, LING 584, PORT 584, SLS 584, and SPAN 584. See SPAN 584.

ITAL 587  Lang and Social Interaction II  credit: 2 OR 4 hours.
Same as EIL 556, PORT 587, and SPAN 587. See EIL 556.

ITAL 588  Sem Second Lang Learn  credit: 4 hours.
Same as EALC 588, EIL 590, FR 588, GER 588, LING 588, PORT 588, SLS 588, and SPAN 588. See SPAN 588.

ITAL 595  Spec Topics in Italian  credit: 1 TO 4 hours.
Independent study/research under the direction of a faculty member. May or may not fulfill requirements for a particular degree program in Spanish, Italian, and Portuguese. Consult graduate advisor. May be repeated in same or subsequent terms to a maximum of 8 hours.

ITAL 599  Thesis Research  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
Japanese

East Asian Languages and Cultures
Head of Department: Karen Kelsky
Department Office: 2090 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 244-1432
www.ealc.uiuc.edu

JAPN 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

JAPN 201  Elementary Japanese I  credit: 5 hours.
Introduction to Japanese, spoken language skills and the reading and writing of hirigana, katakana, and kanji.

JAPN 202  Elementary Japanese II  credit: 5 hours.
Continuation of JAPN 201. Prerequisite: JAPN 201.

JAPN 203  Intermediate Japanese I  credit: 5 hours.
Prerequisite: JAPN 202 or equivalent.

JAPN 204  Intermediate Japanese II  credit: 5 hours.
Continuation of JAPN 203. Prerequisite: JAPN 203 or equivalent.

JAPN 305  Advanced Japanese I  credit: 5 hours.
Readings in graded Japanese texts with oral practice designed to help students acquire the sophisticated vocabulary and grammatical structures of written Japanese. Prerequisite: JAPN 204 or placement test for students who have Japanese background or who have previously taken a course(s) in Japanese.

JAPN 306  Advanced Japanese II  credit: 5 hours.
Continuation of JAPN 305. Prerequisite: JAPN 305 or be placement test.

JAPN 407  Intro to Classical Japanese  credit: 3 hours.
Introduction to the grammar, morphology, vocabulary, and style of classical Japanese language as found in premodern Japanese literary and historical writings. Prerequisite: Three years of modern Japanese language or equivalent.

JAPN 408  Readings in Classical Japanese  credit: 3 hours.
Readings in texts in classical Japanese selected from historical and literary sources of the premodern period. Attention is given to grammatical, morphological, and stylistic features and to problems in translation. Introduction to reading of classical syllabaries and manuscript texts. Prerequisite: JAPN 407 or equivalent.

JAPN 409  Social Science Rdgs Japanese  credit: 3 OR 4 hours.
Readings in Japanese social science materials, including articles from newspapers, periodicals, and learned journals. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: JAPN 306 or equivalent.

JAPN 440  Fourth Year Japanese I  credit: 3 OR 4 hours.
Further developments of skills in sophisticated Japanese language use, including readings in authentic materials in a wide variety of writing styles, writing for formal occasions, and speaking appropriately according to the situation while using precise vocabulary in correct level of speech. 3 undergraduate hours. 4 graduate hours. Prerequisite: JAPN 306 or equivalent.

JAPN 441  Fourth Year Japanese II  credit: 3 OR 4 hours.
Continuation of JAPN 440. 3 undergraduate hours. 4 graduate hours. Prerequisite: JAPN 440 or equivalent.

JAPN 460  Japanese as a 2nd Language I  credit: 3 OR 4 hours.
Introduction to basic theory of Japanese pedagogy; teaching methods, and theory and practice of teaching Japanese grammar. 3 undergraduate hours. 4 graduate hours.

JAPN 461  Japanese as a 2nd Language II  credit: 3 OR 4 hours.
Application of pedalinguistics of Japanese; theory and method of instructional exercise development for teaching Japanese in practice teaching of Japanese in the classroom. 3 undergraduate hours. 4 graduate hours. Prerequisite: JAPN 460 or equivalent.
JAPN 471  Intro Second Lang Learn Tchg  credit: 4 hours.
Same as CHIN 471, FR 471, GER 469, HUM 471, LAT 471, RUSS 471, and SPAN 471. See SPAN 471.

JAPN 475  Intro to Comm Lang Tchg  credit: 4 hours.
Same as CHIN 475, FR 475, GER 475, LAT 475, RUSS 475, and SPAN 475. See SPAN 475.

JAPN 478  Topics Secondary Lang Tchg  credit: 4 hours.
Same as CHIN 478, FR 478, GER 478, LAT 478, RUSS 478, and SPAN 478. See SPAN 478.

JAPN 490  Readings in Japanese Lit  credit: 3 OR 4 hours.
Guided readings in Japanese literature in the vernacular with regular individual conferences and a paper. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: Reading knowledge of Japanese and consent of instructor.

JAPN 499  Study Abroad  credit: 0 TO 18 hours.
Lectures, seminars, and practical work in the Japanese language, literature, and civilization, and in other academic areas appropriate to the student's course of study. 0 to 16 undergraduate hours. Approved for both letter and S/U grading. Prerequisite: Junior standing and a GPA of 3.00.
Journalism

Head of Department: Walt Harrington
Department Office: 120A Gregory Hall, 810 South Wright, Urbana
Phone: 333-7931
www.media.illinois.edu/journalism/

JOUR 199 Undergraduate Open Seminar  credit: 0 TO 3 hours.
A changing array of courses focusing on special topics in journalism. May be repeated to a maximum of 12 hours in separate semesters, if topics vary.

JOUR 200 Introduction to Journalism  credit: 3 hours.
Discussion of the history, freedom, technologies, ethics, and functions of the news media. Training in clear, descriptive writing techniques, using journalistic models. Prerequisite: Completion of Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

JOUR 250 Journalism Ethics & Diversity  credit: 3 hours.
Focuses on media decision-making and news judgment, specifically ethics and diversity in newsgathering with regard to scope, privacy, bias, economic concerns, and accountability. Examines real-life news decisions and the thoughts of journalists who lived through famous and infamous ethics situations. Key provisions in the Society of Professional Journalists Code of Ethics regarding use of diverse voices will be discussed and applied in practical ways, and both students and the instructor will find current examples of ethics issues to present to the class. Diversity education is part of the required standard for achieving journalism accreditation from the discipline's national accrediting body. Prerequisite: JOUR 200.

JOUR 400 Reporting I  credit: 4 hours.
Fundamentals of journalistic writing; reporting news of public affairs. Prerequisite: JOUR 200.

JOUR 405 History of American Journalism  credit: 3 hours.
Surveys the history of the field of journalism since pre-colonial times. Includes the evolution of the media in the United States and the evolution of cultural concepts concerning the media, including rights granted under the First Amendment.

JOUR 411 Law and Communications  credit: 3 hours.
Detailed analysis of the theories of freedom of expression, the legal doctrines of greatest concern to mass communicators, and contemporary issues related to free speech and press, including libel, copyright, and news-gathering.

JOUR 415 Reporting II  credit: 4 hours.
Study and extensive practice of in-depth public affairs reporting - its concepts, techniques, traditions, ethics, and social obligations. Prerequisite: JOUR 400.

JOUR 420 News Editing  credit: 4 hours.
Newspaper editing and headline writing, news judgment, ethics and leadership. Prerequisite: JOUR 400.

JOUR 425 Graphics and Design  credit: 4 hours.
Principles of visual reporting and editing. Introduction to newspaper page design, information graphics research and design, photojournalism, online design, and project planning. Prerequisite: JOUR 400.

JOUR 435 Radio Journalism  credit: 4 hours.
Reporting and writing news for radio news programs. Prerequisite: JOUR 400.

JOUR 440 Television Journalism I  credit: 4 hours.
Introduces TV news studio and field production and principles of field news reporting and editing; principles of planning, producing, and directing news and public affairs programs. Prerequisite: JOUR 435.

JOUR 445 Television Journalism II  credit: 4 hours.
Advanced techniques for reporting, producing, writing, shooting, and editing television news stories and for producing and airing regularly scheduled news programs on deadline. Prerequisite: JOUR 440.

JOUR 450 Media and Public Opinion  credit: 3 hours.
Theory of public opinion and communications; relation of communication systems to public opinion, social systems, and the political order.

**JOUR 451  Research Methods in Journalism  credit: 3 hours.**

Introduction to social science principles of measurement, sampling, statistical inferences and logic of research design in collection, analysis and interpretation of information used in journalism and mass media. Prerequisite: Completion of Quantitative Reasoning I and JOUR 200 or graduate standing.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

**JOUR 455  Press and Modern Presidency  credit: 3 hours.**

Traces historical development of press commentary about the President, press conferences, news flow from Washington, radio and television coverage of the White House, the White House press corps and more since the Hoover Administration. Reporters’ personal relationships with chief executives and the influence of news organizations upon national policy and issues will be covered.

**JOUR 460  Special Topics  credit: 1 TO 4 hours.**

A changing array of special projects, research or reading in journalism. May be repeated in the same or subsequent semesters if topics vary.

**JOUR 465  Photojournalism  credit: 3 hours.**

This course is designed to acquaint students with fundamentals of photojournalism. Instruction will include techniques to produce photographs; the conception and planning of pictures; the pictorial coverage of news events and human interest situation; the planning and execution of photo layouts. Cameras provided by college. Prerequisite: College of Communications major or consent of instructor.

**JOUR 470  International Reporting  credit: 3 hours.**

Role of international news in daily lives. Examines those who report it and those who pioneered it. Students monitor how U.S. and international media cover selected countries and learn how to write international news.

**JOUR 475  Magazine Writing  credit: 3 hours.**

Preparation of feature stories and articles; techniques of marketing, market analysis, and publishing articles written in the course. Prerequisite: JOUR 400.

**JOUR 480  Advanced Reporting Topics  credit: 3 hours.**

Advanced reporting projects or techniques, with separate sections for a varying array of topics such as investigative reporting, immersion journalism, literary journalism, business and financial journalism, online publishing, radio news features, sports writing, broadcast documentary production, digital journalism, and photo journalism. May be repeated in the same or subsequent semesters if topics vary. Prerequisite: JOUR 400.

**JOUR 485  Magazine Editing  credit: 3 hours.**

Basic principles of editing for consumer, business, trade, and company magazines; communications theory, market analysis, editorial process, design process, production process, and distribution process as they relate to magazine publishing. Prerequisite: JOUR 420, JOUR 425 and JOUR 475.

**JOUR 490  Professional Project  credit: 3 hours.**

Individual and team-produced advanced enterprise projects in specialized fields typically with separate sections for news-editorial and broadcast journalism students. May be repeated in the same or subsequent semesters if topics vary. Prerequisite: Either JOUR 415, JOUR 420 and JOUR 425 or JOUR 435, JOUR 440 and JOUR 445.

**JOUR 495  Internship Seminar  credit: 0 TO 1 hours.**

Seminar based on internship experience. Offered for College of Communications students who complete an approved professional, industry related internship. Approved for S/U grading only. May be repeated in the same term to a maximum of 2 undergraduate hours or 2 graduate hours. May be repeated in separate terms to a maximum of 3 undergraduate hours or 3 graduate hours. Prerequisite: Consent of instructor.

**JOUR 500  Issues in Journalism  credit: 2 hours.**

Seminar on issues of contemporary importance in journalism in their historical, multicultural contexts. Emphasis on ethical, legal, social, professional aspects of those issues. Aimed at helping students to develop their own journalism philosophies and high standards of conduct. Prerequisite: Consent of department.

**JOUR 505  Master’s Proseminar  credit: 4 hours.**
Introduction to scholarship and research in journalism and mass communication examining theoretical approaches to the meanings, uses, and effects of mass media in society; discussion of media freedom and accountability; humanistic and social scientific contributions to understanding mass communication. Prerequisite: Consent of department.

**JOUR 510 Master's Readings** credit: 2 TO 3 hours.
Readings in journalism analyzes journalism texts through written assignments in which students compare and contrast the works selected. Prerequisite: Must be a journalism graduate student.

**JOUR 515 Master's Project** credit: 4 hours.
A professional journalism project demonstrating development of analytical and critical thinking abilities appropriate to the profession and effective application of journalism methodology. Prerequisite: Consent of department.
Kinesiology

Kinesiology & Community Health
Head of Department: Wojciech Chodzko-Zajko
Department Office: 117 Freer Hall, 906 South Goodwin, Urbana
Phone: 244-0823
www.kch.uiuc.edu

KIN 100 Development Activities credit: 1 TO 2 hours.
Skills and knowledge essential for leisure-time activities which are classified as developmental activities. Prerequisites and descriptions for each developmental activity are provided in the Class Schedule. More than one activity (Sections A through Z) may be taken in the same term. May be repeated to a maximum of 2 hours.

KIN 101 Dance Activities credit: 1 hours.
Skills and knowledge essential for leisure-time activities which are classified as dance activities. Prerequisites for each dance activity are provided in the Class Schedule. More than one activity (Sections A through Z) may be taken in the same term.

KIN 102 Individual and Dual Activities credit: 1 hours.
Skills and knowledge essential for leisure-time activities which are classified as individual and dual activities. Prerequisites for each individual or dual activity are provided in the Class Schedule. More than one activity (Sections A through Z) may be taken in the same term.

KIN 103 Indoor Court Activities credit: 1 hours.
Skills and knowledge essential for leisure-time activities which are classified as indoor court activities. Prerequisites for each indoor court activity are provided in the Class Schedule. More than one activity (Sections A through Z) may be taken in the same term.

KIN 104 Skating Activities credit: 1 hours.
Skills and knowledge essential for leisure-time activities which are classified as skating activities. Prerequisites for each skating activity are provided in the Class Schedule. More than one activity (Sections A through Z) may be taken in the same term.

KIN 106 Swimming Activities credit: 1 hours.
Skills and knowledge essential for leisure-time activities which are classified as swimming activities. Prerequisites for each swimming activity are provided in the Class Schedule. More than one activity (Sections A through Z) may be taken in the same term if these activities are offered on an 8-week basis.

KIN 107 Aquatic Sport Activities credit: 1 hours.
Skills and knowledge essential for leisure-time activities which are classified as aquatic sport activities. Prerequisites for each aquatic sport activity are provided in the Class Schedule. More than one activity (Sections A through Z) may be taken in the same term.

KIN 109 Team Sport Activities credit: 1 hours.
Skills and knowledge essential for leisure-time activities which are classified as team sport activities. Prerequisites for each team sport activity are provided in the Class Schedule. More than one activity (Sections A through Z) may be taken in the same term.

KIN 110 Gymnastic Activities credit: 1 hours.
Skills and knowledge essential for leisure-time activities which are classified as gymnastic activities. Sections C and Z may be taken in the same term.

KIN 111 Prescribed Exercise credit: 1 hours.
Prescribed exercises adapted to individual needs, capacities, and interests; open to persons with paraplegia, permanently disabled, and individuals with significant temporary disabilities who will require long term rehabilitation. Students must be registered or eligible to register with DRES.

KIN 120 Injuries in Sport credit: 2 hours.
Emphasizes injury mechanisms, means of injury prevention, and emergency care applied to various types of sport injuries; laboratory sessions emphasize preventive and therapeutic taping and emergency first aid.

KIN 121 Survey of Sports Medicine credit: 3 hours.
Introduction to sports medicine for non-kinesiology majors; includes discussion of training, conditioning, preparation for sports, injury aspects of sports, and rehabilitation.

KIN 122 Physical Activity and Health credit: 3 hours.
Provides the scientific evidence of physical activity in preventing disease and optimizing quality of life. Teaches behavioral change strategies to achieve an active lifestyle. Designed for non-majors.

**KIN 125 Intro Kines & Community Health** credit: 1 hours.
Serves as an introduction to the Kinesiology and Community Health Department and provides an overview of the Kinesiology and Community curricula, areas of study, and opportunities available for a careers in the field. Approved for both letter and S/U grading only. Credit will not be given for both KIN 125 and CHLH 111.

**KIN 130 Analysis of Basic Movement** credit: 1 hours.
Introduction to human movement through development of skills and knowledge relative to structure and function of the human body in selected physical activities including: basic postural and locomotion patterns and fundamental throwing patterns; also studies developmental aspects of typical and atypical movement skills. Emphasizes performance and qualitative analysis of movement skills.

**KIN 131 Movement Skills-Fitness** credit: 1 hours.
Development of and participation in a physical fitness program including physical fitness assessment.

**KIN 132 Movement Skills-Swimming** credit: 1 hours.
Development of an understanding of basic swimming skills; emphasizes performance and qualitative analysis of personal aquatic skills, developmental aspects of aquatic skills, and analysis of atypical movement patterns in an aquatic environment. Prior to enrolling in this course, students must have the ability to execute a minimum of one of five basic strokes in deep water, perform a standing dive, and tread in deep water. Prerequisite: KIN 130 or concurrent enrollment or consent of instructor.

**KIN 133 Movement Skills-Dance** credit: 1 hours.
Development of an understanding of basic dance steps, positions and sequences; emphasizes performance and qualitative analysis of personal dance skills, developmental aspects of dance and rhythm, and analysis of atypical movement patterns in a dance setting. Prerequisite: KIN 130 or current enrollment or consent of instructor.

**KIN 134 Movement Skills-Gymnastics** credit: 1 hours.
Development of an understanding of basic gymnastic movements and sequences; emphasizes performance and qualitative analysis of personal gymnastic skills, developmental aspects of gymnastic skills, and analysis of atypical movement patterns in a gymnastic setting. Prerequisite: KIN 130 or current enrollment or consent of instructor.

**KIN 135 Movement Skills-Field** credit: 1 hours.
Development of an understanding of basic field activity skills; emphasizes performance, as well as an appreciation of commonalities, in specific activities including soccer, speedball, speedaway, field hockey and flag football. Prerequisite: KIN 130 or concurrent enrollment or consent of instructor.

**KIN 136 Movement Skills-Racquet** credit: 1 hours.
Development of an understanding of basic racquet activity skills; emphasizes performance, as well as appreciation of commonalities in specific racquet activities such as tennis, badminton, squash or racquetball. Prerequisite: KIN 130 or concurrent enrollment or consent of instructor.

**KIN 140 Social Sci of Human Movement** credit: 3 hours.
Introduction to the social scientific aspects of human movement including sport; particular emphasis on concepts derived from the social sciences (including psychology) that are appropriate to human movement.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**KIN 142 Contemporary Issues in Sport** credit: 3 hours.
Examines current issues in sport relative to competition, economics, race, sex, youth, educational institutions, deviant behavior, religion, psychology, and the media.

**KIN 150 Bioscience of Human Movement** credit: 3 hours.
Integrates anatomical and physiological aspects of human movement; emphasizes how the body moves, physiological responses to exercise stress, physical conditioning and physical fitness.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

**KIN 167 Teaching of Aerobics** credit: 2 hours.
Development of knowledge and practical experience concerned with the teaching and evaluating of aerobic exercise classes. This course will cover teaching, cuing, and performance of stretching, strengthening, and aerobic activities used in exercise classes.
Awareness of injuries, criteria for certifications, format styles, equipment usage, and consumer products will be studied. Prior to enrolling in this course, students must have introductory skills and knowledge of aerobic exercise.

**KIN 168  Lifeguard Instructor Training**  
credit: 2 hours.
Examines the development of aquatic risk management and advanced rescue techniques as well as a system of lifeguard selection and training. Intended primarily for skilled aquatic personnel with the common goal of creating and maintaining a safe aquatic environment. May lead to American Red Cross certification both Lifeguard Training and Lifeguard Instructor Training. Prior to enrolling in this course, students must have the ability to swim 500 yards continuously, swim 15 yards underwater, and recover a 10 lb. brick from a depth of 12 feet.

**KIN 169  WSI Swim Instructor Training**  
credit: 2 hours.
Designed to prepare aquatic professionals to teach progressive levels of swimming. Students will also learn how to analyze human movement in the aquatic environment. May lead to American Red Cross certification both Lifeguard Training and Lifeguard Instructor Training. Prior to enrolling in this course, student must have American Red Cross Level VI swimming ability and Emergency Water Safety knowledge and ability.

**KIN 181  Athl Training Directed Observ**  
credit: 2 hours.
Directed observation and acquisition of athletic training skills for selection into the nationally accredited Commission on Accreditation of Allied Health Education Programs (CAAHEP) Athletic Training Education Program. Emphasis is on acquisition of athletic training skills and the UIUC’s athletic training educational program policies and procedures. May be repeated to a maximum of 4 hours. Prerequisite: KIN 120 or concurrent enrollment, or consent of Kinesiology advisor.

**KIN 182  Clin Progressions in AT I**  
credit: 2 hours.
Supervised practicum in the athletic training setting. Emphasis will be placed on student progression in the athletic training competencies. Offered to those students admitted into the Commission on Accreditation of Allied Health Education Programs. Prerequisite: KIN 181 and admission to the Athletic Training program.

**KIN 199  Undergraduate Open Seminar**  
credit: 0 TO 5 hours.
May be repeated. Approved for both letter and S/U grading.

**KIN 220  Fund of Athletic Training**  
credit: 3 hours.
Discussion of the role of the athletic trainer: legalities, facilities, advanced emergency procedures, injury prevention and organization and administration of athletic health care programs. Understanding the process of injury and healing as a basis for prevention and treatment of athletic injuries is emphasized including general medical terminology. Prerequisite: KIN 120 or consent of instructor.

**KIN 221  Therapeutic Modalities in AT**  
credit: 3 hours.
Emphasis on instrumentation and application of therapeutic modalities in the laboratory setting including therapeutic heat, therapeutic cold, electrotherapy, traction, massage, hydrotherapy, pain control and postural alignment. Prerequisite: Credit or concurrent enrollment in KIN 220, or consent of instructor.

**KIN 222  Base for Prescrip of Therap Ex**  
credit: 3 hours.
Functional anatomy and injury constraints as a basis for prescription of therapeutic exercises for musculoskeletal conditions; laboratory sessions stress clinical evaluation of muscle and joint function and familiarization with therapeutic exercises.

**KIN 230  Leisure Services and Diversity**  
credit: 3 hours.
Same as RST 230. See RST 230.

**KIN 239  Coaching Strategies**  
credit: 3 hours.
Examination of philosophy, ethics, strategies, motivational techniques, performance analysis, program organization, contest administration, and equipment and facility management related to coaching.

**KIN 240  Soc & Psych of Phys Activity**  
credit: 3 hours.
Discusses how social and psychological processes and constraints affect human action in physical activity environments. Attention is given to socialization, personal dynamics, stratification, and ideological and economic constraints upon the manifestations of physical activity. Prerequisite: KIN 140 or consent of instructor and completion of the Campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

**KIN 247  Intro to Sport Psychology**  
credit: 3 hours.
Analysis of the competitive sport process, with study of how personality and situational variables affect motivation, anxiety, and aggression in sport. Attention is given to the psychological skills needed by coaches and athletes for successful and enjoyable sports participation.
KIN 249  **Sport & Modern Society**  credit: 3 hours.
The sociological analysis of sport in modern societies with regard to social class, politics, community, education, and collective behavior. Same as SOC 249.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

KIN 257  **Coordination, Control & Skill**  credit: 3 hours.
Introduction to the concepts and principles of the coordination and control of movement and the development of skilled action. The course will focus on such topics as fundamental movement activities; movement control processes; acquisition, retention and transfer of skill; and the role of constraints to action. These topics have implications for understanding skilled performance, motor development and human performance in general. Prerequisite: KIN 140 and KIN 150 or consent of instructor.

KIN 262  **Motor Development, Growth & Form**  credit: 3 hours.
Examination of the concepts of motor development, physical growth, and body form throughout the lifespan. Major emphasis is on the period of birth through adolescence. Same as HDFS 262.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

KIN 268  **Children's Movement**  credit: 3 hours.
Introduction and overview of kinesiology principles and physical activity related to children. Laboratory portion of class focuses on the application of information to teaching physical activity to elementary school children. For non-kinesiology majors.

KIN 281  **Clinical Progression AT II**  credit: 2 hours.
Progression in athletic training clinical skills for the Athletic Training Education Program. Emphasis is on mastery of entry-level athletic training skills for first aid, injury management, and knowledge of initial screening and record keeping methods of the athletic training profession. Prerequisite: KIN 182 and consent of academic advisor.

KIN 282  **Clinical Progression AT III**  credit: 2 hours.
Progression in athletic training clinical skills for the Athletic Training Education Program. Emphasis is on mastery of entry-level athletic training skills for therapeutic exercise injury management, and knowledge of athletic injury triage for the athletic training profession. Prerequisite: KIN 281 and consent of academic advisor.

KIN 320  **Adv Assess of Athl Injuries UE**  credit: 3 hours.
Analyzes injury patterns and mechanisms for the various joints and body segments; emphasizes the nature of the injuries, clinical evaluation and therapeutic principles, the physiology of the healing process, and functional anatomy. Prerequisite: KIN 220 or consent of instructor.

KIN 325  **Adv Assess of Athl Inj - LE**  credit: 3 hours.
Provides knowledge of low back and lower extremity. Emphasis is on acquisition of athletic training policies and procedures including content areas of assessment, evaluation, general medical conditions and temporary disabilities of the low back and lower extremity. Prerequisite: KIN 320 or consent of instructor.

KIN 344  **Anthropology of Play**  credit: 3 hours.
Overview of the general field, research and literature comprising the anthropological study of human play. Emphasis is on the study of definitions and critiques of human play from various cultural perspectives. Provides extensive practice in writing within the genre of cultural anthropology. Same as ANTH 344. Prerequisite: One course in Socio-Cultural Anthropology or consent of instructor and a Composition I course.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

KIN 352  **Bioenergetics of Movement**  credit: 3 hours.
Study of the nature of energy transfer during physical activity; mechanisms of metabolic control, force production, cardiorespiratory support and adaptation relative to physical activity. Prerequisite: MCB 103.

KIN 355  **Biomechanics of Human Movement**  credit: 3 hours.
Studies the biological and mechanical principles of human motor performance; analyzes selected movement skills in depth. Prerequisite: CSB 334, MATH 012 or above, or consent of instructor.

KIN 360  **Adapted Physical Education**  credit: 3 hours.
Organization, administration, and conduct of physical education programs for the most prevalent types of medical conditions found in school settings; emphasis on analyzing motoric needs and prescribing programs of motor activity for special populations, including
individuals with mental retardation and learning disabilities. Prerequisite: Junior standing or above and enrollment in the Teacher Certification program or consent of instructor.

**KIN 361  Curriculum in Grades K-6  credit: 3 hours.**
Examines the theoretical and philosophic curricular principles necessary to the development of a sound, professionally grounded, and research-based curriculum for children in grades K-6. Requires planning a variety of developmentally appropriate learning activities that are taught to children during micro-teaching experiences in the field. Prerequisite: Junior standing or above and enrollment in the Teacher Certification program or consent of instructor.

**KIN 362  Curriculum in Grades 7-12  credit: 3 hours.**
Provides students with theoretical knowledge and professional practice in secondary physical education curriculum and instruction. This research-based course emphasizes effective teaching, development of content, and analysis of curricular models in grades 7-12. Prerequisite: Junior standing or above and enrollment in the Teacher Certification program or consent of instructor.

**KIN 363  Instructional Strategies in PE  credit: 3 hours.**
Analyzes the teaching-learning process, emphasizing the identification of instructional strategies specific to the development of skilled performance in movement activities. Prerequisite: Junior standing or above and enrollment in the Teacher Certification program.

**KIN 364  Exper in the Common School  credit: 3 hours.**
Supervised practice in observing, assisting, and teaching children in elementary, junior high school, and senior high school. Emphasis is on understanding motor behavior, teacher-learner behavior, and interrelatedness with other aspects of the learning environment. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing or above and enrollment in the Teacher Certification program or consent of the instructor.

**KIN 368  Clinical Progression AT IV  credit: 2 hours.**
Progression in athletic training clinical skills for the Athletic Training Education Program. Emphasis is on mastery of entry-level athletic training skills for therapeutic modalities and knowledge of athletic injuries for the athletic training profession to real problems in the context of patient, subject and athlete outcome objectives. Prerequisite: KIN 282 and consent of academic advisor.

**KIN 382  Organization & Admin in AT  credit: 2 hours.**
Advanced organization and administration principles in clinical athletic training and sports medicine. Emphasizes the objectives, principles, and problems in the management of a comprehensive sports medicine program. Prerequisite: KIN 282 and concurrent enrollment in KIN 381.

**KIN 384  Capstone Proficiency AT  credit: 2 hours.**
Capstone clinical proficiency for the Athletic Training Education Program. Emphasis is on independent clinical proficiency of athletic training skills. Students may choose any 384 section for their capstone clinical experience: High School, Rehabilitation, SportWell and Athletic Training Room sections. May be repeated to a maximum of 8 hours. Prerequisite: Concurrent enrollment or credit in KIN 381, or consent of academic advisor.

**KIN 385  Exper in Kinesiology Research  credit: 3 hours.**
Supervised laboratory experiences in kinesiology research; individual work under the supervision of members of the faculty in their respective fields. The student assists with data collection, processing, and analysis for research in progress. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

**KIN 386  Exercise Instruction & Elderly  credit: 3 hours.**
This course is designed to offer practical experience opportunities to undergraduate Kinesiology students aspiring to work in applied exercise fields with a diverse aged population. It will entail extensive "on the job" training through the Lifetime Fitness Program, an older adult service program of the Department of Kinesiology. Additionally, students will gain training in current program management practices. May be repeated to a maximum of 6 hours. Prerequisite: KIN 352 or consent of instructor is required. A current CPR is required at the beginning of the term and certification must remain current.

**KIN 387  Exper in the Agency Setting  credit: 3 hours.**
Supervised practical experience in leadership roles in nonschool agency settings; emphasis on observing, planning, and conducting physical activity programs for children and/or adults in preschool, recreation, or other social agencies. May be repeated for a maximum of 6 hours.

**KIN 390  Honors  credit: 2 hours.**
Lectures and discussion dealing with issues in kinesiology, dance, health education, recreation education, and related fields. Same as CHLH 390 and RST 390. May be repeated to a maximum of 6 hours. Prerequisite: James Scholar standing or grade-point average of 3.0.

**KIN 391  Special Project-Problems  credit: 2 OR 3 hours.**
Special projects in research and independent investigation in any phase of health, kinesiology, physical education, and related areas selected by the students. May be repeated to a maximum of 6 hours. Prerequisite: Junior or senior standing; grade-point average of 2.5; consent of instructor.

**KIN 393  Honors Thesis  credit: 3 hours.**
Planning, researching and writing of an honors thesis, under supervision of a faculty member, on a problem of appropriate scope and character. Paper will be presented at a suitable meeting and/or seminar. May be repeated to a maximum of 6 hours. Prerequisite: Senior standing when enrolling; minimum grade point average (total, University and Kinesiology prefix courses) of 3.25; a minimum of one full year (2 semesters) remaining at the University of Illinois, Urbana-Champaign campus; and submission of a written proposal.

**KIN 401  Measure & Eval in Kinesiology  credit: 3 OR 4 hours.**
Examines the concepts of observation, measurement, and evaluation of human motor performance and functioning in physical activity contexts. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 140 and KIN 150, or graduate standing, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

**KIN 407  Disability, Culture & Society  credit: 3 OR 4 hours.**
Same as ANTH 404, CHLH 407, and REHB 407. See CHLH 407.

**KIN 411  Games in Culture  credit: 3 OR 4 hours.**
Examines game phenomena as cultural action systems with special emphasis on the biosocial behavior expressed in varying societies; topics include game components, cultural contexts, ecological strategies, enculturation, acculturation, symbolism, change process, and maladaptive behavior. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior, Senior or graduate standing or consent of instructor.

**KIN 442  Body, Culture & Society  credit: 3 OR 4 hours.**
Analysis of the significant social aspects of the human body including anthropological, historical, psychological and sociological perspectives. Places emphasis on cross-culture and cross-national studies of bodily behavior with particular stress on exercise, health and sport practices. Same as GWS 442. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 249 or SOC 249, or graduate standing; or consent of instructor.

**KIN 443  Psychophysiology in Ex & Sport  credit: 3 OR 4 hours.**
Designed to give the student an understanding of the interaction between psychological processes and physiological parameters in exercise and sport. Examines psychophysiological exercise and sport research with particular attention to relevant models and theories. Same as PSYC 443. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior or senior standing, KIN 240, or graduate standing, or consent of instructor.

**KIN 444  Physical Activity Epidemiology  credit: 3 OR 4 hours.**
Focuses on the scientific evidence regarding physical and psychological health benefits of exercise, physical activity, and physical fitness from the perspective of epidemiology and addresses the biological mechanisms for healthy adaptations. Reviews the empirical and theoretical determinants of participation in physical activity and exercise. 3 undergraduate hours. 4 graduate hours.

**KIN 446  Gender & Physical Activity  credit: 3 OR 4 hours.**
Examines the gendered nature of physical activity in such contexts as physical education, sport, play, games, and leisure. Analyzes theoretical and methodological assumptions pertaining to gender and physical activity/sport contexts with particular attention on concepts of masculinity, femininity, role conflict, socialization influences and media representations of gender. The feminist critique of socio-cultural sport studies is also considered. Same as GWS 446. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 240, or graduate standing, or consent of instructor.

**KIN 447  Psych of Sport Performance  credit: 3 OR 4 hours.**
Outlines the social psychological parameters which influence behavior and performance in sport; emphasizes the impact of social influences upon the individual within the sport context, including such factors as achievement motivation, competition, anxiety, aggression, and personality. Same as PSYC 447. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 140, KIN 247, or PSYC 201, or graduate standing, or consent of instructor.

**KIN 448  Exercise & Health Psychology  credit: 3 OR 4 hours.**
Examines the psychological determinants and consequences of exercise and physical activity as a health promoting behavioral process. Same as CHLH 448. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior standing or above, or graduate standing, or consent of instructor.

**KIN 449  Sociology of Sport  credit: 3 OR 4 hours.**
Sociological analysis of sport as a sociocultural system which progresses from the micro to the macro level; focuses on theoretical and conceptual issues in sociology of sport. Same as SOC 479. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 249, or SOC 249, or graduate standing, or consent of instructor.

KIN 450  **Biochemistry of Exercise**  credit: 3 OR 4 hours.
Introduces the metabolic and biochemical adaptation of the body in response to acute and chronic physical activity. Primary focus is given to the subcellular and enzymatic regulation and integration during exercise. Substrate metabolism, bioenergetics, hormonal action and nutritional influences as related to exercise are emphasized. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 352 or MCB 350 or consent of instructor.

KIN 451  **Skeletal Muscle Physiology**  credit: 3 OR 4 hours.
Offers advanced material on skeletal muscle anatomy, physiology, and functional properties which will provide a basis for understanding changes in muscle structure and function during periods of increased use, such as endurance or strength training, or periods of decreased use, such as injury. The effects of hormones and/or ergogenic aids on muscle repair, power and endurance will be discussed. Knowledge gained in this course can be used in areas such as the design of training programs, physical therapy, or injury prevention. 3 undergraduate hours. 4 graduate hours. Prerequisite: The student is expected to have taken at least one or more of the following: MCB 103, MCB 240, KIN 352 or prior consent of the instructor.

KIN 452  **Clin & Applied Ex Physiology**  credit: 0 TO 4 hours.
Physical fitness appraisal and guidance in clinical and applied settings with emphasis on medical clearance, risk factor assessment, physical fitness assessment and exercise prescription. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 352, or graduate standing, or consent of instructor.

KIN 453  **Body Composition**  credit: 3 OR 4 hours.
Examines the theoretical and technical aspects of measuring human body composition; introduces relevant techniques and instrumentation currently in use; reviews research methodology and findings pertaining to the effects of exercise conditioning and nutritional modification on body composition. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 352 or graduate standing or consent of instructor.

KIN 454  **Growth & Physical Development**  credit: 3 OR 4 hours.
Study of the growth and physical development of children through adolescence with emphasis on those systems and body composition changes related to motor performance and exercise stress. Same as HDFS 454. 3 undergraduate hours. 4 graduate hours. Prerequisite: MCB 103 and MCB 334 or graduate standing or consent of instructor.

KIN 455  **Quant Analysis of Human Motion**  credit: 3 OR 4 hours.
Quantitative mechanical analysis of human motion using film-based, video-based, and optical-electronic motion measurement systems. Basic mechanical concepts are presented using a vector algebra approach. The focus is on two-dimensional motion analysis with an introduction to three-dimensional techniques. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 355 or graduate standing or consent of instructor.

KIN 456  **Electromyographic Kinesiology**  credit: 3 OR 4 hours.
Focuses upon the biological components of volitional and reflexive movement in humans; theory and technology of electromyography are utilized to describe and quantify the neuromuscular input to the mechanical output. 3 undergraduate hours. 4 graduate hours. Prerequisite: MCB 103, MCB 334, or graduate standing or consent of instructor.

KIN 457  **Motor Learning & Control**  credit: 0 TO 4 hours.
Discussion and analysis of scientific principles related to the learning and control of motor skills; review of related literature and research in motor learning and control. The focus of the course is on mechanisms for the control of movement and recent theories of how movements are acquired and performed. Course information: 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 257 or graduate standing or consent of instructor.

KIN 458  **Neurobio of Aging**  credit: 0 TO 4 hours.
Same as PSYC 451 and NEUR 451. See PSYC 451.

KIN 459  **Physical Activity & Aging**  credit: 3 OR 4 hours.
Examines aging and age-related changes in the cells, tissues, organs, and systems of the human body; emphasizes the role of physical activity and other lifestyle choices in modifying the aging process and in influencing the onset and progression of the chronic diseases which accompany aging. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior, Senior, or graduate standing or consent of instructor.

KIN 460  **Technology & Pedagogical KINES**  credit: 3 OR 4 hours.
Promotes mastery of technology skills and complex computer applications through the analysis of research and critical issues related to technology in Kinesiology. The completion of technology modules, requiring problem solving and the collection and analysis of
assessment data, will culminate in an interactive, multimedia project. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior standing.

**KIN 465 Qualitative Research Methods**  credit: 3 OR 4 hours.
Introduces students to qualitative methodology in the educational and health-related professions settings. Students will learn to interpret qualitative research, understand its theoretical underpinnings, acquire interviewing and observation skills, design and evaluate a community-based group research project, learn to collaborate with others, and critically assess the contributions to the project of self and peers. 3 undergraduate hours. 4 graduate hours.

**KIN 473 Skill Acquisition Strategies**  credit: 3 OR 4 hours.
Examines theory and practice related to structuring practice conditions to maximize the acquisition and performance of motor skills. The nature of skill, activities, and strategies for enhancing skill are discussed with particular emphasis placed on strategies that instructors, teachers, and/or coaches can use to enhance skill acquisition and performance. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 257 or graduate standing or consent of instructor.

**KIN 481 Med Aspects of Sports Medicine**  credit: 3 OR 4 hours.
Focuses on the identification and management of common medical conditions and illnesses associated with the physically active population. Content will address common assessment and evaluation procedures and the development of an appropriate management plan for the return to activity and/or continuation of current physical activity status. Emphasis will be given to the role of the Athletic Trainer. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 325 or consent of instructor.

**KIN 483 Sport Med III: Med Sup: CI**  credit: 2 hours.
Fundamentals of medical supervision with the emphasis on acquisition of athletic training skills to recognize, treat, and refer, when appropriate, the general medical conditions and disabilities of athletes. This includes 30 hours of clinical practice with a consulting physician, including selected medical criterion for return to sport participation. 2 undergraduate hours. 2 graduate hours. May be repeated to a maximum of 4 hours. Prerequisite: KIN 320 or consent of instructor.

**KIN 484 Clin Resrch in Sports Med & AT**  credit: 1 hours.
Current topics course including lectures, discussions, invited speakers, faculty presentation, and student presentation in the study and analysis of research topics in Sports Medicine and Athletic Training. The topics will be based on the National Athletic Trainers' Association's Educational Competencies and the U.S. Joint Review Committee on Athletic Training. May be repeated to a maximum of 4 hours. Prerequisite: KIN 320 or consent of instructor.

**KIN 485 Clin Exper in Sports Medicine**  credit: 2 TO 8 hours.
Clinical experiences in medical supervision of sports programs, in the areas of therapeutic exercises, fitness programming, and cardiac rehabilitation. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

**KIN 494 Special Topics**  credit: 1 TO 4 hours.
Lecture course on topics of current interest; specific topics announced in the Class Schedule. May be repeated.

**KIN 501 Kinesiology Research Methods**  credit: 4 hours.
Review and appraisal of common research procedures; application of statistical procedures, library methods, evaluation procedures, and experimental methods.

**KIN 520 Issues in Sports Medicine**  credit: 4 hours.
Addresses current issues in the medical aspects of sports; examples of these issues are epidemiology of injuries and treatment forms, use of sports equipment, questionable sports practices, and preventive techniques.

**KIN 522 Ortho-Kinesiology**  credit: 4 hours.
Analyzes pathomechanics underlying injury and orthopedic problems; also analyzes rehabilitation methods for orthopedic and neurological dysfunctions.

**KIN 547 Sport Psychology**  credit: 4 hours.
Analysis of psychological factors and principles with special reference to motor performance, learning motor skills, perception, and emotion in sports situations; review of literature; and independent projects. Prerequisite: KIN 447 or consent of instructor.

**KIN 551 Sci Basis of Phys Performance**  credit: 4 hours.
Contemporary trends in the study of human performance and exercise stress; analysis of the research literature, experimental strategies, and research instrumentation. Lecture-discussion and laboratory.

**KIN 552 Neuromuscular Physiology**  credit: 4 hours.
In-depth study of the neuromuscular aspects of human activity; focus on selected topics related to growth, physical development, exercise prescriptions, athletic conditioning, and fitness.
KIN 553  **Circulorespiratory Physiology**  credit: 4 hours.
Aerobic performance responses to short-term, intermittent, and prolonged physical activity; special consideration given to endurance training methods and assessment techniques, ergogenic aids, and problems associated with growth, environmental influences, and competitive sport. Prerequisite: KIN 551 or consent of instructor.

KIN 555  **Experimental Kinesiology**  credit: 4 hours.
Mechanical and neuromuscular approach to human movement; analysis and experimental research. Prerequisite: KIN 455 or consent of instructor.

KIN 557  **Stress Immunology**  credit: 4 hours.
This course will examine the role of stress in modulating immune function and the pathobiological mechanisms resulting in disease. An emphasis will be placed upon the reciprocal communication pathways that exist between the central nervous, endocrine and immune systems. Prerequisite: Consent of the instructor. It will be assumed that students will have introductory knowledge in biochemistry, endocrinology, and immunology.

KIN 560  **Research on Teacher Education**  credit: 4 hours.
Critically examines advanced theories, trends, problems, and implications of research on teacher education in Kinesiology. Students will complete a series of written assignments that are grounded in theory, illustrate critical thinking skills, and demonstrate extensive knowledge of the literature. Prerequisite: Graduate standing.

KIN 569  **Administration of PE & Sport**  credit: 4 hours.
Analysis of completed research relating to theory and practice of administration in physical education and sport; the development of policy statements and procedures manuals for the various educational levels; and experience in the use of the case plan of instruction as a teaching technique for the development of competence and knowledge relating to human relations and administration in this specialized field.

KIN 575  **Leisure and Culture**  credit: 4 hours.
Same as ANTH 575 and RST 575. See RST 575.

KIN 590  **Independent Study**  credit: 2 OR 4 hours.
Independent research on special projects. May be repeated.

KIN 591  **Seminar**  credit: 0 hours.
Lectures, discussions, and critiques on kinesiology and related subjects by faculty members and visiting professional leaders; presentation and criticism of student research. May be repeated in the same or subsequent terms as topics vary. Approved for S/U grading only.

KIN 594  **Special Topics**  credit: 2 OR 4 hours.
Lecture course in topics of current interest; specific subject matter announced in the Schedule. May be repeated.

KIN 599  **Thesis Research**  credit: 0 TO 16 hours.
Preparation of theses in kinesiology. May be repeated. Approved for S/U grading only.
Korean

East Asian Languages and Cultures
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KOR 201  **Elementary Korean I**  credit: 5 hours.
Introduction to Korean, including conversation with a native Korean-speaking tutor under the direction of a linguist-instructor, and a
minimum of formal grammar and writing. Credit is not given for both KOR 201 and KOR 221.

KOR 202  **Elementary Korean II**  credit: 5 hours.
Second term of spoken Korean, including conversation with a native Korean-speaking tutor under the direction of linguist instructor;
studies formal grammar based on conversational materials; and includes some work on written Korean. Credit is not given for both
KOR 202 and KOR 222. Prerequisite: KOR 201.

KOR 203  **Intermediate Korean I**  credit: 5 hours.
First term of second year of the Korean language, including drill for advanced conversational fluency; introduces a variety of styles and
levels of discourse and usage; and increases study of the written language and formal grammar. Credit is not given for both KOR 203
and KOR 222. Prerequisite: KOR 202.

KOR 204  **Intermediate Korean II**  credit: 5 hours.
Second term of second year of the Korean language including drill for more advanced conversational fluency; more variety of styles and
levels of discourse and usage; more formal grammar and an introduction of basic Chinese characters. Credit is not given for both KOR
204 and KOR 241. Prerequisite: KOR 203.

KOR 221  **Korean Reading and Writing I**  credit: 4 hours.
Introduction to Korean orthography, syntax, and vocabulary for students who have the ability to speak Korean. Credit is not given
for both KOR 221 and/or KOR 201 - KOR 204. Prerequisite: Ability to speak Korean as determined by a placement test.

KOR 222  **Korean Reading and Writing II**  credit: 4 hours.
Continuation of KOR 221. Credit is not given for both KOR 222 and either KOR 202 or KOR 203. Prerequisite: KOR 221.

KOR 241  **Korean Reading and Writing III**  credit: 4 hours.
Continuation of KOR 222. Credit is not given for both KOR 241 and either KOR 204 or KOR 305. Prerequisite: KOR 222.

KOR 242  **Korean Reading and Writing IV**  credit: 4 hours.
Continuation of KOR 241. Credit is not given for both KOR 242 and KOR 306. Prerequisite: KOR 241.

KOR 305  **Advanced Korean I**  credit: 5 hours.
Concentrates on the ability to engage in fluent discourse, on comprehensive grammatical knowledge, and on the ability to read ordinary
texts in Korean, including some Chinese characters. Credit is not given for both KOR 305 and KOR 241. Prerequisite: KOR 204.

KOR 306  **Advanced Korean II**  credit: 5 hours.
Continuation of KOR 305; emphasizes rapid reading, fluent conversation, learned vocabulary and idiom acquisition, and reading of
newspapers. Credit is not given for both KOR 306 and KOR 242. Prerequisite: KOR 305.

KOR 440  **Fourth Year Korean I**  credit: 3 hours.
Develop skills in upper advanced level Korean language use including formal writings and readings in materials on culture and society,
sophisticated appropriate speaking skills. Basic Chinese characters are systematically introduced. Prerequisite: KOR 242 or KOR 306.

KOR 441  **Fourth Year Korean II**  credit: 3 hours.
Continuation of KOR 440. Prerequisite: KOR 440 or consent of instructor.

KOR 490  **Readings in Korean Lit**  credit: 3 OR 4 hours.
Guided reading in Korean literature in the vernacular. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6
undergraduate hours or 8 graduate hours. Prerequisite: Reading knowledge of Korean and consent of instructor.
Landscape Architecture

Head of Department: M. Elen Deming
Department Office: 101 Temple Hoyne Buell Hall, 611 East Lorado Taft Drive, Champaign
Phone: 333-0176
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LA 101  Landscape Inquiry and Design  credit: 2 hours.
Introduction to primary concepts and methods of landscape inquiry as a means to understand experiential qualities of landscape and to guide landscape design and planning projects.

LA 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

LA 212  Water and Society  credit: 3 hours.
A comparative investigation of built landscapes and hydraulic resources through history. Examines problems of water scarcity, abundance and changes in ecology, human social organization, economy, law, and cultural values related to natural water conditions and human management. Comparative case studies include the ancient Near East and modern Middle East, ancient and modern Egypt, the Roman empire, Peru, the Netherlands, South Asia, Illinois River basin, and the American West.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

LA 215  Buildings, Land and Culture  credit: 3 hours.
Introduction to the study of ordinary American landscapes and buildings. Considers everyday places as reflections of cultural values and asks why they look and function as they do. Topics approached through historical and thematic analysis. Same as ARCH 215.

This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

LA 218  S Asian Cultural Landscapes  credit: 3 hours.
Survey of Hindu, Buddhist, and Islamic landscapes of South Asia. Examines urban structures, building typologies, and open space types through history as influenced by concepts of the natural, sacred, political, and social. Same as ASST 218.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

LA 220  Exploring African Cities  credit: 3 hours.
Examines the buildings, landscapes, and societies of pre-colonial, sub-Saharan African cities from the third century BCE until the nineteenth century CE. Same as ANTH 223.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

LA 222  Islamic Gardens & Architecture  credit: 3 hours.
Study of the formation, history, and meaning of the landscape and architecture of the Islamic world. Same as ARCH 222.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

LA 233  Foundation Design Studio  credit: 5 hours.
Introduction to the fundamentals of design, including studies in two- and three-dimensional abstract and applied problems, basic elements and procedures of design, and principles of landscape composition. Open to Landscape Architecture majors only.
Prerequisite: Credit or concurrent registration in LA 280 or consent of instructor.

LA 234  Site Design Studio  credit: 5 hours.
Site as the fundamental unit of landscape design. Involves ecological, cultural and experiential understanding of sites, and the creation of place-specific designs. Field trip required; see Class Schedule for current fees. Prerequisite: LA 233 or consent of instructor.
LA 241  **Landform Design & Construction**  credit: 3 hours.
Introduction to landform design, drainage, stormwater management, surveying, and materials. Prerequisite: MATH 014 or 016.

LA 242  **Nature and American Culture**  credit: 3 hours.
Same as HIST 282, RST 242, and NRES 242. See RST 242.
This course satisfies the General Education Criteria for a:
UIUC: Western Civilizations

LA 244  **Sci-Values of Envt Decisions**  credit: 3 hours.
Same as RST 244 and NRES 244. See RST 244.

LA 250  **Environmental Site Analysis**  credit: 3 hours.
Principles and practices of identifying, analyzing, and recording landscape resources. Field trip required; see Class Schedule for current fees. Prerequisite: GEOL 101 or GEOG 103 or consent of instructor.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

LA 270  **Behavioral Factors in Design**  credit: 3 hours.
Introduces the impacts of cultural and social factors, such as age, gender, physical ability, economic status, ethnicity and how people interact with the environment. Reading assignments, short exercises, field trips, and evaluation of space will enable students to evaluate and potentially design more socially and ecologically responsive environments.

LA 280  **Design Communications I**  credit: 3 hours.
Fundamentals of visual communication in the design process and presentation for landscape architecture. Includes freehand and constructed drawing, color, media, and models. Open to Landscape Architecture majors only. Prerequisite: Concurrent registration in LA 233.

LA 281  **Design Communications II**  credit: 3 hours.
Advanced principles and techniques of visual communication in landscape architectural rendering, emphasizing computer-based techniques. Open to Landscape Architecture majors only. Prerequisite: Concurrent registration in LA 234; completion of LA 280 and completion of campus Composition I general education requirement or consent of instructor.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

LA 301  **Senior Honors**  credit: 1 TO 6 hours.
Independent guided study and research in a selected area of landscape architecture; for candidates for honors in landscape architecture. May be repeated to a maximum of 9 hours. Prerequisite: Senior standing in landscape architecture, a university grade-point average of 3.0, and consent of head of department.

LA 314  **History of World Landscapes**  credit: 3 hours.
Analysis of the development of landscape architecture as a result of environmental and cultural influences. Same as ARCH 314.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Civilizations

LA 315  **History of Modern Landscape Arch**  credit: 3 hours.
A selected overview of developments in landscape architecture in the western world from 1900 to the present. Prerequisite: LA 314.

LA 335  **Community & Open Space Studio**  credit: 5 hours.
Development of design solutions at site and master plan scale relative to community, urban and open space problems; emphasizes development of analysis and design techniques to integrate physical context of place with social context. Field trip required; see Class Schedule for current fees. Prerequisite: LA 234 or consent of instructor.

LA 336  **Design Workshop Studio I**  credit: 5 hours.
Project design at various scales utilizing problems of a wide range of complexity and subject matter; rural, community, and urban problems, housing, recreation, and natural areas; emphasizes problem analysis and generation of innovative design alternatives. Students select from several sections depending on specific interests. Prerequisite: LA 335 or consent of instructor.

LA 342  **Site Engineering**  credit: 4 hours.
Principles of site engineering including landform design, stormwater management, site surveying, circulation systems and site utility planning. Prerequisite: LA 241 and college trigonometry; or consent of instructor.

LA 343 Landscape Construction credit: 4 hours.
Construction methods, materials, and procedures related to the design of landscape structures; development of design details and cost estimating. Prerequisite: LA 342 or consent of instructor.

LA 345 Professional Internship credit: 0 TO 12 hours.
Professionally supervised field experience in design offices and public agencies intended to introduce students to practice. Students work in the department-approved firm or agency of their choice. Fifty hours of employment is required for each one hour of course credit. Approved for S/U grading only. May be repeated to a maximum of 24 hours. Prerequisite: Upper division undergraduate standing or consent of instructor.

LA 346 Professional Practice credit: 2 hours.
Study of the profession of landscape architecture including an introduction to modes of practice, career evolution, organizational theory, office procedures, project management and professional ethics. Field trip required; see Class Schedule for current fees. Prerequisite: Junior standing or consent of instructor.

LA 390 Independent Study credit: 1 TO 6 hours.
Supervised independent study, research, or special project in a selected area related to landscape architecture. May be repeated to a maximum of 9 hours. Prerequisite: Junior or senior standing; consent of instructor and head of department prior to advance enrollment and registration.

LA 399 Off-Campus Study credit: 0 TO 15 hours.
Provides campus credit for off-campus study. (Summer session, 0 to 6 undergraduate hours). Final determination of appropriate credit is made by a faculty review committee upon completion of the student's work. Maximum credit, 15 hours (summer session, 6 hours), all of which must be earned within one term. Approved for both letter and S/U grading. Prerequisite: Junior standing; prior review and approval of the student's written proposal by a faculty committee and the department head.

LA 425 Hist Geog Amer Land to 1880 credit: 4 hours.
Same as GEOG 425. See GEOG 425.

LA 426 Hist Geog Amer Land Since 1880 credit: 4 hours.
Same as GEOG 426. See GEOG 426.

LA 427 Amer Vernacular Cultural Land credit: 4 hours.
Focuses on vernacular structures in the cultural landscape, especially common houses, barns, and commercial and industrial structures; examines origin and geographical diffusion of vernacular architecture in the United States. Same as GEOG 427.

LA 437 Regional Design Studio credit: 5 OR 6 hours.
Ecological design and planning studio emphasizing team approaches to design development and evaluation using current human and environmental research results. Projects require field work, analysis, problem-solving, and advanced design and presentation products. 5 undergraduate hours. 6 graduate hours. Prerequisite: LA 336 or consent of instructor.

LA 438 Design Workshop Studio II credit: 3 TO 6 hours.
Project design at various scales utilizing problems of a wide range of complexity and subject matter; rural, community, and urban problems, housing, recreation, and natural areas; and emphasizes problem analysis and generation of innovative design alternatives. The student selects from several sections depending on specific interests. 5 undergraduate hours. 3 to 6 graduate hours. Prerequisite: LA 336 or consent of instructor.

LA 441 Land Resource Evaluation credit: 4 hours.
Examines concepts for the value of land, land resource problems and policy responses, methods for evaluating land resource development and policy alternatives, and case studies of land resource evaluation. Same as UP 441. Prerequisite: Graduate standing or consent of instructor.

LA 444 Social Impact Assessment credit: 3 OR 4 hours.
Same as ENVS 444, RST 444, NRES 444, RSOC 444, and UP 444. See RST 444.

LA 450 Ecology for Land Restoration credit: 4 hours.
Ecological implications of alternative land use patterns; equipment, field techniques, and nomenclature in current use by environmental consultants; and elements of a baseline ecosystem study. Prerequisite: Consent of instructor.

LA 452 Natural Precedent in Planting credit: 3 hours.
Biogeography; identification of native species, uses of native plants in the landscape; and restoration and planting design projects. Field trips required. Prerequisite: HORT 302 or consent of instructor.

LA 453  Cultural Precedent in Planting  credit: 3 hours.
Planting design issues; historic precedent and contemporary comprehensive design projects; management practices; technical documents; and plant use and identification. Field trips required. Prerequisite: LA 452.

LA 454  Landscape Archaeology  credit: 3 OR 4 hours.
Same as ANTH 453. See ANTH 453.

LA 460  Heritage Management  credit: 3 OR 4 hours.
Same as ANTH 460. See ANTH 460.

LA 470  Social/Cultural Design Issues  credit: 3 hours.
Critical discussion of notions and theories pertaining to the reciprocal effects of landscape architectural design and human behavior.

LA 472  Museum Theory and Practice  credit: 3 OR 4 hours.
Same as ANTH 462 and ARTH 462. See ANTH 462.

LA 501  Landscape Arch Theory & Prac  credit: 2 hours.
Seminar to introduce the discipline, profession, and practice of landscape architecture. Emphasis is on understanding the skills and knowledge base of the profession including environmental, social, and historical factors in design.

LA 505  Methods in Arch & LA History  credit: 2 TO 4 hours.
Seminar on the historiography of architectural and landscape history, including an introduction to the major concepts and figures in the discipline, past and present. Students will learn of approaches historians have used for analyzing the built environment from traditional methods to newer interpretive frameworks, and examine how contemporary values determine or inform the writing of history.

LA 506  Landscape and Vision  credit: 4 hours.
A study of the major 20th-century texts on vision, perception, and perspective as applied to architecture and landscape. Prerequisite: Doctoral students only; master's level students must receive permission from instructor.

LA 513  History of World Landscapes  credit: 4 hours.
Introduction to the landscape architectural heritage of the past in its social, environmental and historical context. Same as ARCH 510.

LA 515  Hist & Thry of Modrn Land Arch  credit: 4 hours.
A selected overview of developments in landscape architecture in the western world from 1900 to the present. Prerequisite: LA 513 or approval of instructor.

LA 517  Land and Society  credit: 4 hours.
Historical and cross-cultural investigation of the use, shaping, and perception of the land-based environment; case studies, critical problems and issues, and theories of social-environmental interaction. Prerequisite: Consent of instructor.

LA 537  Landscape Plan & Design Studio  credit: 6 hours.
Ecological design and planning studio emphasizing design that reflects evaluation and integration of human and environmental research results. Detailed investigation of design options. Prerequisite: LA 441 and LA 450, or consent of instructor.

LA 540  Public Involvement in Res Mgmt  credit: 3 TO 4 hours.
Same as ENVS 540, RST 540, NRES 540, RSOC 540, and UP 540. See NRES 540.

LA 542  Landscape Modeling  credit: 4 hours.
Computational representations and modeling of landscape processes and solution methods for problems involving the special arrangement of land use activities: estimation, simulation and optimization methods, their effectiveness, efficiency; and application. Same as UP 542. Prerequisite: LA 441 or consent of instructor.

LA 550  Environ. Impact Assessment  credit: 4 hours.
Requirements of the National Environmental Policy Act and Guidelines from the Council on Environmental Quality for preparing and writing environmental impact statements; includes interdisciplinary team efforts and impact assessment techniques. Prerequisite: Graduate or law school standing, or consent of instructor.

LA 562  Social Construction of Space  credit: 4 hours.
Same as ANTH 557. See ANTH 557.
LA 563  **Soc/Beh Research Designed Env**  credit: 4 hours.
Same as ARCH 563. See ARCH 563.

LA 565  **Design/Behavior Studio**  credit: 6 hours.
Development of site or project scale design emphasizing the integration of user needs and behavioral factors. Same as ARCH 565.
May be repeated to a maximum of 12 hours. Prerequisite: LA 564 or consent of instructor.

LA 583  **Environ History Cities&Regions**  credit: 4 hours.
Same as GEOG 583 and UP 583. See UP 583.

LA 587  **Graduate Seminar**  credit: 2 TO 4 hours.
Preparation, presentation, and discussion of research papers on current and future areas of landscape architectural application. May be repeated. Prerequisite: Consent of instructor.

LA 590  **Directed Research**  credit: 2 TO 8 hours.
Nature and scope of projects to be determined by consultation between student and faculty adviser; open to landscape architecture majors as well as those from other disciplines who wish to engage in interdisciplinary work. Approved for both letter and S/U grading. May be repeated. Prerequisite: Consent of instructor.

LA 593  **Islamic & S Asian Landscapes**  credit: 4 hours.
Topics in Islamic and South Asian cultural landscape history, including historiography, methodology and recent scholarship. An advanced course that requires disciplinary familiarity with research on the built environment, material culture and visual culture. May be repeated to a maximum of 8 hours per semester; may be repeated to a maximum of 12 total hours.

LA 594  **Cultural Heritage**  credit: 2 OR 4 hours.
Topics in cultural landscape heritage, conservation planning and design. Investigates theories of landscape, heritage, and their intersections, with readings drawn from anthropology, geography, and landscape studies, as well as applied work on historical landscape conservation, preservation and management. Same as ANTH 594. May be repeated to a maximum of 10 hours per semester; may be repeated to a maximum of 16 total hours. Prerequisite: Concurrent enrollment in LA 438 may be required in the spring semester; check Class Schedule.

LA 598  **Master's Project**  credit: 0 TO 8 hours.
Major independent or small-group project synthesizing knowledge from previous coursework. Approved for both letter and S/U grading. Prerequisite: Consent of instructor and program adviser.

LA 599  **Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only. Prerequisite: Graduate standing in landscape architecture.
LAS 100  Intro Collaborative Learning  credit: 1 hours.
Weekly meetings for students enrolled in the College of LAS Learning Communities program to prepare freshmen for collaborative learning environments through campus orientation, study skills, study groups, and project-based assignments related to their linked courses. Approved for S/U grading only.
Prerequisite: Students must be enrolled in a freshman LAS Learning Community set of linked courses.

LAS 101  Global Awareness I  credit: 1 hours.
Weekly meetings for students enrolled in the College of LAS Global Studies Initiative program to prepare freshmen for collaborative learning environments through campus orientation, study skills, study groups, and project-based assignments related to their global studies course.
Prerequisite: Students must be enrolled in a freshman LAS Global Studies Initiative Course.
Must enroll concurrently in LAS 100.

LAS 102  Global Awareness II  credit: 1 hours.
Weekly meetings for students enrolled in the College of LAS Global Studies Initiative program to prepare freshmen for collaborative learning environments through campus orientation, study skills, study groups, and project-based assignments related to their global studies course. Spring Semester Course.
Prerequisite: Students must be enrolled in a freshmen LAS Global Studies Initiative Course.

LAS 110  Workshop-Tutorial  credit: 0 TO 4 hours.
Independent study and experimental seminars open to Unit One students and to others; specific offerings vary each term. Credit toward college or departmental requirements is contingent upon approval by the appropriate unit. A total of 12 hours of LAS 110 credit may be applied toward graduation in the College of Liberal Arts and Sciences. Approved for both letter and S/U grading.
Prerequisite: Unit One students or consent of Unit One Director.

LAS 111  Illinois Experience  credit: 1 hours.
Weekly meetings for first term students to prepare them for university learning environments through campus orientation programs, study skills seminar, study groups and critical thinking assignments. Discussion groups are designed to address topics related to their chosen majors and academic and social adjustments. Course content focuses on academic and workplace success in a diverse environment.

LAS 199  Undergraduate Open Seminar  credit: 0.5 TO 5 hours.
May be repeated.

LAS 298  Study Abroad Predepart Orient  credit: 1 hours.
Eight-week course designed for students planning to study abroad. Examines the effects of different cultural orientations upon interaction and adjustment; explores the issues surrounding the experience of entering, interacting within, and returning from a foreign culture; increases awareness of verbal, non-verbal, and cultural factors affecting information processing. Course combines the theoretical with a strong experiential component and hands-on training.
Prerequisite: Study Abroad Office approval.

LAS 299  LAS Study Abroad  credit: 0 TO 18 hours.
Provides credit toward the undergraduate degree for study at accredited foreign institutions or approved overseas programs. Final determination of credit is made upon the student's completion of the work. (Summer session, 0 to 8 hours). May be repeated to a maximum of 36 term hours per academic year or to a total of 44 term hours, all of which must be earned within one calendar year. Approved for both letter and S/U grading.
Prerequisite: One year of residence at UIUC, good academic standing, and prior approval of the major department and the College of Liberal Arts and Sciences.

LAS 494  Senior Project  credit: 2 OR 4 hours.
For students seeking graduation with distinction in IPS. 2 or 4 undergraduate hours. No graduate credit. May be repeated to a maximum of 4 undergraduate hours.
Prerequisite: Consent of instructor and IPS Advisory Committee; open only to students whose major is IPS and who have a cumulative grade point average of at least 3.25.

LAS 495  Interdiscipl Honors Seminar  credit: 3 hours.
Seminar on interdisciplinary topics in the natural sciences, social sciences, humanities, and arts. 3 undergraduate hours. No graduate credit. May be repeated to a maximum of 6 undergraduate hours.
Prerequisite: Consent of instructor.
LAST 170  **Introduction to Latin America**  credit: 3 hours.
Interdisciplinary introduction to the ways of life of Latin American peoples, their origins and current expressions; discusses social, economic issues, and domestic and international policies related to them in the context of other societies in developing countries.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

LAST 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

LAST 240  **Constr Afr and Carib Identity**  credit: 3 hours.
Same as AFST 209, CWL 225, and FR 240. See FR 240.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

LAST 325  **Cultural Prod in Dictatorships**  credit: 3 hours.
Cultural production (visual and literary) of three Latin American dictatorships: Chile (1973-1990), Uruguay (1973-1985) and Argentina (1976-1983). Provides a comparative study of narrative - both short stories and novels - and films covering the dictatorship years and the process of redemocratization. The guiding questions are: how and through which means can a traumatic past be represented? Do texts and films share topics and strategies to depict authoritarianism? Prerequisite: LAST 170 or consent of instructor.

LAST 395  **Special Topics**  credit: 2 TO 4 hours.
Topical survey of cultural, social, economic, and political factors in Latin American life. Each term a particular topic is considered. Prerequisite: A basic course in a humanities or social science discipline.

LAST 401  **Latin American Ethnobotany**  credit: 3 OR 4 hours.
Background in the major issues involving plant sciences, culture, and history, focused on indigenous knowledge and practices in Latin America. Same as ANTH 401 and HIST 409. 3 undergraduate hours. 4 graduate hours. Prerequisite: Students should have some background in biology, ecology, history, or anthropology, or consent of instructor.

LAST 425  **Depictions of Violence**  credit: 3 OR 4 hours.
A comparative study of themes, forms and representations of violence in twentieth-century Latin American literature and cinema. Examines the treatment of a variety of issues: perpetrators, victims, types of violence, concepts of community, etc. in readings and films from Argentina, Colombia, Cuba, Brazil and Mexico. The readings and films will be related to specific historical periods. 3 undergraduate hours. 4 graduate hours. Prerequisite: LAST 170 or consent of instructor.

LAST 442  **Arts of Colonial Latin America**  credit: 3 OR 4 hours.
Same as ARTH 442. See ARTH 442.

LAST 445  **Native Latin Amer Languages**  credit: 2 TO 4 hours.
Upon the consent of the Director of the Center for Latin American and Caribbean Studies, tutorials are available in special native Latin American languages not regularly offered by the University (ie. Quechua, Kagchikel Mayan). Tutorials at the elementary, intermediate, and advanced levels may be arranged. Students registering for unit credit for the first two terms must first present satisfactory evidence of knowledge of the language at the elementary level, either in the form of credit earned at another institution or by passing a proficiency examination. May be repeated in 6 terms successively, to a maximum of 16 hours. Graduate credit is given only for work beyond the elementary level. Prerequisite: Consent of instructor.

LAST 476  **Four Lat Am Political Ideas**  credit: 2 TO 4 hours.
Same as HIST 408. See HIST 408.

LAST 490  **Individual Study**  credit: 1 TO 5 hours.
Major tutorial normally taken in the senior year. Students read the works from list devised in consultation with a faculty tutor and write a term paper. May be repeated as topics vary to a maximum of 6 hours. Prerequisite: LAST 170; a declared major in Latin American and Caribbean Studies; consent of instructor.

LAST 550  Interdisc Seminar Latin Am St  credit: 4 hours.
Examines the interconnections among research approaches and problems in the field of Latin American and Caribbean Studies. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: M.A. standing in Latin American and Caribbean Studies or consent of instructor.

LAST 597  M.A. Research  credit: 4 hours.
Open to students who choose to complete their M.A. by submitting two departmental papers. May be repeated in the same or subsequent terms to a maximum of 8 hours. Prerequisite: M.A. standing in Latin American Studies and consent of instructor and advisor.

LAST 599  Thesis Research  credit: 4 hours.
Preparation of M.A. thesis. May be repeated to a maximum of 8 hours with approval. Students may register in more than one section per term. Approved for S/U grading only. Prerequisite: M.A. standing in Latin American and Caribbean Studies and consent of instructor.
LAT 101  **Elementary Latin I**  credit: 4 hours.
Grammar and reading for students who have had no work in Latin.

LAT 102  **Elementary Latin II**  credit: 4 hours.
Grammar and reading of easy prose. Prerequisite: LAT 101 or one year of high school Latin.

LAT 103  **Intermediate Latin**  credit: 4 hours.
Review of grammar; reading of easy narrative prose. Prerequisite: LAT 102 or two years of high school Latin.

LAT 104  **Intro to Latin Literature**  credit: 4 hours.
Continuation of LAT 103, with readings chiefly in Latin poetic literature.

LAT 106  **Intensive Intermediate Latin**  credit: 8 hours.
Equivalent to LAT 103 and LAT 104. Review of grammar and syntax and reading of easy prose and poetry for students who have attained 102 proficiency and wish to advance more rapidly; use of computer-assisted program materials. Prerequisite: LAT 102, or a placement score showing high school achievement equivalent to LAT 102.

LAT 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

LAT 301  **Survey of Latin Literature I**  credit: 3 hours.
The republican period. Prerequisite: LAT 104 or four years of high school Latin.

LAT 302  **Survey of Latin Literature II**  credit: 3 hours.
The imperial period. Prerequisite: LAT 104 or four years of high school Latin.

LAT 410  **Intro to Indo-European Ling**  credit: 3 OR 4 hours.
Same as GRK 410 and LING 409. See LING 409.

LAT 411  **Intermediate Prose Composition**  credit: 3 hours.
Practice in the writing of Latin prose. Prerequisite: LAT 104 or the equivalent.

LAT 460  **Medieval Latin**  credit: 3 hours.
Literary and historical texts in prose and poetry will be read in the original; the course will also cover patristic writings. Same as MDVL 460. Prerequisite: Two years of college Latin or consent of instructor.

LAT 471  **Intro Second Lang Learn Tchg**  credit: 4 hours.
Same as CHIN 471, FR 471, GER 469, HUM 471, JAPN 471, RUSS 471, and SPAN 471. See SPAN 471.

LAT 475  **Intro to Comm Lang Tchg**  credit: 4 hours.
Same as CHIN 475, FR 475, GER 475, JAPN 475, RUSS 475, and SPAN 475. See SPAN 475.

LAT 478  **Topics Secondary Lang Tchg**  credit: 4 hours.
Same as CHIN 478, FR 478, GER 478, JAPN 471, RUSS 478, and SPAN 478. See SPAN 478.

LAT 491  **Readings in Latin Literature**  credit: 3 OR 4 hours.
Readings in authors or special topics chosen by the instructor from the entire extant literature in Latin. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated. Prerequisite: Three years of college Latin or equivalent; consent of instructor.

LAT 492  **Senior Thesis**  credit: 2 OR 4 hours.
Thesis and honors. For candidates for honors in Latin and for other seniors. No graduate credit. Prerequisite: Senior standing and consent of Classics Honors Program.
LAT 493  **Independent Reading**  credit: 1 TO 4 hours.
May be repeated to a maximum of 8 undergraduate hours or 12 graduate hours. Prerequisite: LAT 302 and consent of instructor.

LAT 498  **Senior Survey**  credit: 2 OR 4 hours.
For candidates for honors in Latin and for other seniors. No graduate credit. Prerequisite: Senior standing and consent of Classics Honors Program.

LAT 511  **Advanced Prose Composition**  credit: 3 hours.
Practice in writing Latin prose, with special attention to stylistic questions. Prerequisite: LAT 411 or equivalent.

LAT 520  **Proseminar**  credit: 4 hours.
Alternating poetry and prose, concentrates on a major author from one of the following areas: epic, oratory, lyric and elegiac poetry, history, drama, philosophy, satire, or epistolography. Areas normally follow this sequence in successive years. May be repeated to a maximum of 20 hours if topics vary. Prerequisite: LAT 491 or equivalent.

LAT 531  **Special Disciplines**  credit: 4 hours.
Same as GRK 531. See GRK 531.

LAT 580  **Latin Seminar**  credit: 4 hours.
Research on special problems of Latin literature; required of all majors in classical philology. May be repeated if topics vary. Prerequisite: A Latin proseminar.

LAT 595  **Intro to Classical Studies**  credit: 4 hours.
Same as GRK 595. See GRK 595.

LAT 599  **Thesis Research**  credit: 0 TO 16 hours.
Guidance in writing theses for advanced degrees. May be repeated. Approved for S/U grading only.
LAW 199 Undergraduate Open Seminar  credit: 1 TO 3 hours.
Approved for both letter and S/U grading.

LAW 301 Introduction to Law  credit: 3 hours.
Guides the undergraduate student in an initial study of law and legal reasoning. Covers the nature and function of rules/law, the distinctiveness of legal reasoning, and the way in which law responds to social phenomena and contributes to the development of different social, business and economic institutions. Includes both criminal and civil proceedings. Serves as a foundation course for a minor in law or as a general foundation course for those interested in applying to law school. Also of interest to students who are not interested in pursuing a more formal law education, but for whom general legal training will enhance their career aspirations. Develops skills that are transferable to virtually any career.

LAW 501 Intro to United States Law  credit: 3 OR 4 hours.
Intensive introduction to the American legal system for graduate law students with prior professional training in non-common law legal systems; stresses the functioning of basic U.S. legal institutions and the techniques of American legal research. 3 professional hours. 4 graduate hours.

LAW 599 Thesis Research  credit: 0 TO 16 hours.
Approved for S/U grading only.

LAW 600 Pro Bono Service  credit: 0 hours.
Course carries no academic credit, but recognizes law students who provide at least sixty hours of pro bono legal service to the community. The sixty hours of service may be performed at any time during the student's three years of law school, and must be documented through reports to the Associate Dean for Academic Affairs. 0 credit. Students may enroll only with permission of the Associate Dean for Academic Affairs. Approved for S/U grading only. Prerequisite: Enrollment in the J.D. program at the College of Law.

LAW 601 Contracts  credit: 4 hours.
Enforceability of promises including unjust enrichment and reliance, offer and acceptance, mistake, unfairness and overreaching, unconscionability, Statute of Frauds, interpretation of contract language, conditions, and third party beneficiaries.

LAW 602 Property  credit: 4 hours.
Basic first-year course in property law, required of all students. Provides an overview of law of the land, with incidental coverage of personal property; includes the concept of property, acquisition of private property, recognized property interests, and gratuitous transfer of property interests.

LAW 603 Torts  credit: 4 hours.
Basic course in civil wrongs, including intentional torts (such as assault and battery), negligence (duty, unreasonable risk analysis, actual and proximate cause), and strict liability. Law students only.

LAW 604 Criminal Law  credit: 4 hours.
Sources and purposes of the criminal law; the meaning of criminal responsibility; and the characteristics of particular crimes. Law students only.

LAW 605 Criminal Proc: Investigation  credit: 3 OR 4 hours.
Problems in the administration of criminal justice with emphasis on right to counsel, arrest, search, interrogation, lineups, and the scope and administration of exclusionary rules. 3 professional hours. 4 graduate hours.

LAW 606 Constitutional Law I  credit: 4 hours.
Spring semester first-year course provides an introduction to constitutional law, including the origins of judicial review, basic Article III limits on federal court jurisdiction, the nature and scope of federal legislative power, the Commerce Clause, and the relationship of the federal government to the states.

LAW 607 Civil Procedure  credit: 4 hours.
Role and importance of procedure in litigation, including jurisdiction, pleadings and parties, pretrial motions and discovery, trial practice (except evidence), relationship between judge and jury, the effect of a decision in one case on subsequent litigation between the same or different parties (res judicata), verdicts and judgements, and appellate review.

LAW 609  Legal Writing & Analysis  credit: 2 hours.
Emphasis on development and improvement of skills in legal writing, and training in legal bibliography. Assignments may include brief writing and preparation of legal memoranda and opinions. Approved for S/U grading only.

LAW 610  Introduction to Advocacy  credit: 2 OR 3 hours.
Continuation of LAW 609. Introduction to Advocacy is required in the second semester of the first year for further development of legal research skills persuasive writing and oral advocacy. Each student will work on the preparation of a summary judgment motion and an appellate brief relating to their first semester assignment, then argue their assigned case before a panel of local attorneys and faculty. 3 professional hours. 2 graduate hours. Approved for S/U grading only.

LAW 611  Constitutional Law II  credit: 3 OR 4 hours.
This elective for second- and third-year law students studies constitutional notions of state action; substantive due process and equal protection; procedural due process; and the congressional power to enforce civil rights. Study of the rights guaranteed by the First Amendment is not part of this course (see LAW 612). 3 professional hours. 4 graduate hours. Prerequisite: LAW 606.

LAW 612  Constitutional Law III  credit: 3 OR 4 hours.
This elective for second-and third-year law students is an intensive study of the First Amendment to the Constitution and its application to the states through the Fourteenth Amendment. Examines decisions of the U.S. Supreme Court in areas concerning freedom of speech, religion, and the press. Specific topics include punishment of criminal advocacy; regulation of picketing and public demonstrations; obscenity; commercial speech; regulation of news media; and religious exemptions from government regulation. 3 professional hours. 4 graduate hours. Prerequisite: LAW 606.

LAW 615  Administrative Law  credit: 3 OR 4 hours.
Functions of administrative tribunals in federal, state, and municipal government; the procedure before such administrative tribunals; and judicial relief from administrative decisions. 3 professional hours. 4 graduate hours.

LAW 616  Environmental Law and Pol I  credit: 3 OR 4 hours.
Course is the basic introduction to Environment Law; it considers the principal legal approaches used to deal with environmental problems, including common-law, statutory, regulatory, and economic-incentive systems. 3 professional hours. 4 graduate hours.

LAW 618  Natural Resources  credit: 2 TO 4 hours.
Legal problems associated with the ownership and use of land, water, and mineral resources. 3 professional hours. 2 or 4 graduate hours.

LAW 619  Wildlife Law  credit: 3 OR 4 hours.
Covers a variety of legal issues relating to the status and treatment of wildlife and the management of natural areas for the conservation of biodiversity. 3 professional hours. 4 graduate hours.

LAW 620  Health Law Policy  credit: 3 OR 4 hours.
This course focuses on the profound legal and policy issues raised by changes in health law and the U.S. health care delivery system including: access to health law and the U.S. health care delivery system including: access to health services; the financing and organization of the health care system; development of legal standards to ensure quality of care; and issues of long-term care. In addition, we will focus on the process of making laws and polices; what entities, institutions, and individuals control decisions about the quality and cost of health care. We will also explore the need and basis for reform.

LAW 621  Read in Conservation Theory  credit: 3 OR 4 hours.
Considers selected topics in conservation thought in twentieth-century United States, from the conservation-preservation debate of the Progressive Era through the ethical and ecological debates of the present. 3 professional hours. 4 graduate hours.

LAW 622  Land Use Planning  credit: 2 TO 4 hours.
Examination of the legal and administrative aspects of land development and regulation in an urban society, including the techniques and problems of planning; the tools of plan effectuation, such as zoning, subdivision regulation, renewal and redevelopment, and housing programs; and the allocation of decision-making among various levels of government. 2 to 3 professional hours. 2 to 4 graduate hours.

LAW 623  Real Estate Transactions  credit: 3 OR 4 hours.
Elective for second- and third-year law students introduces various issues relating to real property, transfers, including real estate contracts, conveyancing and title protection. 3 professional hours. 4 graduate hours. Prerequisite: LAW 602.
LAW 624  **Real Estate Finance**  credit: 3 OR 4 hours.
Methods of financing land acquisition and residential and commercial development, including publicly owned and subsidized housing. 3 professional hours. 4 graduate hours.

LAW 625  **State and Local Government**  credit: 3 OR 4 hours.
The law governing the structure, powers, and operation of local governments in urban and suburban areas with analysis of political, economic, and social implications. 3 professional hours. 4 graduate hours. Prerequisite: LAW 606.

LAW 627  **Legal Research**  credit: 1 OR 2 hours.
In this course, students will be introduced to the basic tools and methodology used in conducting legal research and will develop the skills necessary to identify and locate relevant, complete and current legal information in both print and digital formats. Weekly problem-based research exercises will be assigned. The course will meet twice weekly for the first seven weeks of the semester. Required in the first year, fall term.

LAW 629  **Bankruptcy**  credit: 3 OR 4 hours.
Study of the regulation of the relationship between debtors and creditors under the federal Bankruptcy Code. 3 professional hours. 4 graduate hours.

LAW 630  **Bankruptcy Reorganizations**  credit: 3 OR 4 hours.
Detailed study of business bankruptcy reorganizations under Chapter 11 of the Bankruptcy Code. 3 professional hours. 4 graduate hours. Prerequisite: LAW 629.

LAW 631  **Secured Transactions**  credit: 2 TO 4 hours.
Study of secured transactions under Article 9 of the Uniform Commercial Code. 2 to 3 professional hours. 2 to 4 graduate hours.

LAW 632  **Commercial Law**  credit: 3 OR 4 hours.
A survey course of the Uniform Commercial Code. There is substantial coverage of Article 2 (Sales), Article 3 (Negotiable Instruments) and Article 9 (Secured Transactions).

LAW 633  **Business Associations I**  credit: 3 OR 4 hours.
Examines the basic legal consequences for individuals, organizations, and society of the formation, control, and financing of organizations. Surveys agency relationships, partnerships, and close and public corporations. 3 or 4 professional hours. 4 graduate hours.

LAW 634  **Securities Regulation**  credit: 3 OR 4 hours.
Explores the federal securities laws governing issuance of securities in the primary markets. Emphasis on regulatory requirements governing corporate financing. 3 professional hours. 4 graduate hours. Prerequisite: LAW 633.

LAW 635  **Securities Litigation**  credit: 3 OR 4 hours.
This course focuses in detail on the substantive law and strategic considerations that are important in securities litigation, whether private suits by individual investors, private class actions under federal securities laws, or federal and state government enforcement proceedings. Topics include: 10(b) fraud suits under the 1934 Act, 11 and 12(a)(2) suits under the 1933 Act, insider trader liability, procedural issues in class actions, and litigation under federal proxy solicitation and tender offer regulations. Prerequisite: LAW 633.

LAW 636  **Business Associations II**  credit: 3 OR 4 hours.
This is the second course in the sequence (offered during the Spring semester). It covers derivative suits, corporate finance, introduction to securities regulation, insider trading and mergers and acquisitions. Prerequisite: LAW 633.

LAW 637  **Unincorporated Business Assoc**  credit: 3 OR 4 hours.
This course provides in-depth coverage of partnerships, limited liability companies and other unincorporated business entities, emphasizing planning and drafting considerations. Prerequisite: None, though LAW 633 is encouraged.

LAW 638  **White Collar Crime**  credit: 2 TO 4 hours.
This course will focus on the federal statutes commonly invoked in corporate and white collar prosecutions, including those used in prosecutions for conspiracy, mail and wire fraud, RICO, extortion, bribery, tax offenses, obstruction of justice, and false statements. The class will investigate the theoretical and policy framework for individual and institutional responsibility in our criminal justice system and will also explore emerging theories of corporate criminal liability and the principles undergirding the sanctions imposed for white collar crime. Prerequisite: This course is appropriate for law students who have completed introductory courses in criminal law and procedure. Some students have found it helpful to complete the course in LAW 633 before taking this course, but it is not a prerequisite.

LAW 639  **Corporate Finance**  credit: 3 OR 4 hours.
Analysis of corporate and securities law problems using the tools of modern financial theory. Emphases will typically include valuation, capital structure, and fundamental changes of public corporations. 3 professional hours. 4 graduate hours. Prerequisite: LAW 633.

**LAW 642  Antitrust Law  credit: 3 OR 4 hours.**
The limitations imposed by the Sherman Act, Clayton Act, and Federal Trade Commission Act on anticompetitive practices by business firms; emphasizes price fixing and other agreements among competitors, monopolization, mergers, exclusive dealing, tying arrangements. Considers applicability of traditional rules to intellectual property and new technologies. 3 professional hours. 4 graduate hours.

**LAW 643  Trademark & Unfair Competition  credit: 3 OR 4 hours.**
Course introduces basic legal concepts relating to statutory and common-law trademark, interference with contractual relations and trade libel, the federalization of unfair competition law, and the role of the Federal Trade Commission in consumer protection activities. 3 professional hours. 4 graduate hours.

**LAW 644  Copyright Law  credit: 3 OR 4 hours.**
Offers an in-depth look at the legal aspects of copyright with special emphasis on the application of traditional copyright principles to new technologies and media of expression. 3 professional hours. 4 graduate hours. First-year law students who have taken the Copyright Act section of LAW 608 are not permitted to enroll in this course due to overlapping coverage.

**LAW 645  Patent Law  credit: 2 TO 4 hours.**
Historical development of protection of ideas, inventions, and discoveries; patentability; securing the patent; amendment and correction of patents; and infringement remedies, defenses, and procedure. 2 to 3 professional hours. 2 to 4 graduate hours.

**LAW 646  Cyberspace Law  credit: 3 TO 4 hours.**
This course addresses the architecture of cyberspace, applicability and problems of mapping existing legal concepts to the domain, modification of familiar legal concepts for application in cyberspace, and the development of new legal concepts to address emerging problems and disputes in cyberspace. We will examine trademarks and the domain name system; copyright and patent liability; speech in cyberspace; personal jurisdiction; choice of law; governance and sovereignty of cyberspace; and cybercommunities; the individual and privacy in cyberspace.

**LAW 647  Income Taxation  credit: 3 OR 4 hours.**
The fundamental course in federal income taxation. Includes materials relating to income taxation of individuals and an introduction to taxation of corporations and shareholders. 3 or 4 professional hours. 4 graduate hours.

**LAW 648  Corporate Taxation  credit: 3 OR 4 hours.**
In-depth study of federal income tax law related to taxation of corporations, shareholders, partnerships, and partners. 3 professional hours. 4 graduate hours. Prerequisite: LAW 647.

**LAW 649  Partnership Taxation  credit: 3 OR 4 hours.**
Involves the study of Subchapter K of the Internal Revenue Code, including partnership formation, allocations, distributions, and liquidations. Also examines the tax treatment of Subchapter S corporations. 3 professional hours. 4 graduate hours. Prerequisite: LAW 647.

**LAW 650  Estate and Gift Taxation  credit: 3 OR 4 hours.**
Comprehensive treatment of federal transfer (estate and gift) taxes. 3 professional hours. 4 graduate hours. Prerequisite: LAW 647.

**LAW 651  Tax Exempt Organizations  credit: 3 TO 4 hours.**
This course will cover the rationale and technical tax requirements for exempting charities from federal and state taxes. Subjects covered will include the rationale for exemption (especially with respect to churches, schools, and hospitals), qualification rules under I.R.C. Section 5 (c)(3), the Unrelated Business Income Tax, and if time permits, the charitable contributions deduction. Prerequisite: Income Taxation (LAW 647) is a prerequisite, though it may be waived in appropriate cases. The course is otherwise open to second and third year students.

**LAW 652  International Taxation  credit: 3 OR 4 hours.**
Survey of the problems in U.S. taxation of foreign persons and foreign income, with special emphasis upon foreign business transactions of U.S. corporation. 3 professional hours. 4 graduate hours. Prerequisite: LAW 647.

**LAW 653  International Business Trans  credit: 3 OR 4 hours.**
Doing business abroad: export-import regulations, use of foreign commission merchants, licensing of patents and know-how, investment and exchange problems, establishing a foreign operation (including forms of business organization available abroad), and application of United States and foreign antitrust law to the business operation. 3 professional hours. 4 graduate hours.

**LAW 654  International Trade Policy  credit: 3 OR 4 hours.**
Analysis of the regulation of trade between nations by international agreement (e.g., the GATT), by multinational organizations (e.g., the European Communities), and by individual countries; emphasizes U.S. import restraints, export controls, and related laws. 3 professional hours. 4 graduate hours.

LAW 655  **European Union Law**  credit: 2 TO 4 hours.

Intensive study of the European Common Market, particularly of its laws relating to trade barriers, establishment of companies, and antitrust; and United States legislation in the field of international trade. 2 to 3 professional hours. 2 to 4 graduate hours.

LAW 656  **International Law**  credit: 3 TO 4 hours.

The nature, sources, and subjects of international law and its place in the control of international society; includes an examination of the law of jurisdiction, territory, recognition and succession of states, rights and immunities of states in foreign courts, diplomatic immunities, treaties, protection of citizens abroad, settlement of international disputes, war and neutrality, the United Nations, and the International Court of Justice. 3 professional hours. 4 graduate hours.

LAW 657  **International Human Rights Law**  credit: 3 OR 4 hours.

Studies established and developing legal rules and procedures governing the protection of international human rights, including Marxist and Third World, as well as Western, conceptions of those rights. 3 professional hours. 4 graduate hours.

LAW 658  **Comparative Legal Institutions**  credit: 3 hours.

This course is designed to examine a range of foreign legal institutions from an interdisciplinary perspective. The emphasis is not on particular rules of substantive law but on the structure of different legal systems and the consequences of those structural differences for law and society. Examples will be drawn primarily from Europe and Asia, with special emphasis on understanding the contrasts between foreign legal systems and that of the United States. Topics will include judicial review, corporate governance, legal culture, and the question of whether legal systems are converging with globalization. Students will be expected to write a paper.

LAW 659  **Comparative Constitutional Law**  credit: 2 hours.

This course compares U.S. and Canadian Constitutional Law. The class will be taught via teleconferencing to students here at Illinois and students at the University of British Columbia. Class attendance and a paper (which can be used to satisfy the writing requirement) are required. There are no prerequisites - although constitutional decisions that are studied in Con Law II are discussed, none of the Canadian students have had these classes either.

LAW 660  **Individual Employee Rights**  credit: 3 hours.

This course investigates the legal rights and responsibilities of employees in the non-union workplace. The course will emphasize particularly the role of law in adjusting the balance of power between individual employees and employers. It will study the regulation of contract, tort, and statute of suchareas as hiring, discharge, compensation, employee privacy and dignity and the like.

LAW 661  **Introduction to Civil Law**  credit: 3 OR 4 hours.

More individuals in the world solve their legal problems in the framework of what is called the civil law system than in the Anglo-Saxon case law system. This course introduces students to the civil law system, roughly defined as an ensemble of legal thought formations and practices derived from Roman law. Understanding the particularities of the civil law systems furthers a partnership with lawyers working on other continents in different legal traditions. Comparisons of legal frameworks and positions are included in the course approach. 3 professional hours. 4 graduate hours.

LAW 662  **Labor Law I**  credit: 3 OR 4 hours.

Study of the National Labor Relations Act as amended, the preact history of the labor movement, and the judiciary’s response thereto, with emphasis on understanding the problems, experiments, and forces leading to the enactment; includes the negotiation and administration of the collective bargaining agreement, especially the grievance arbitration procedure, its operation and place in national labor policy; and explores the relationship of the individual and the union. Same as LIR 547. 3 or 4 professional hours or 4 graduate hours. Prerequisite: Graduate standing or completion of first year of law curriculum.

LAW 664  **Employment Discrimination**  credit: 2 TO 4 hours.

Problems arising under federal statutory prohibitions of discrimination in employment, with particular emphasis on evidentiary problems and the use of statistical proofs; defining relevant labor pools, using statistical analyses of data, and establishing proof of test validation. 2 to 3 professional hours. 2 or 4 graduate hours. (summer session, 3 professional hours or 4 graduate hours.) Prerequisite: All first year law courses.

LAW 665  **Workplace Dispute Resolution**  credit: 3 OR 4 hours.

Same as ECON 543 and LIR 543. See LIR 543.

LAW 666  **Compar Employmt Relations Sys**  credit: 3 OR 4 hours.

Same as LIR 554. See LIR 554.

LAW 667  **Family Law**  credit: 3 OR 4 hours.
The creation and dissolution of the family, and legal relationships established by marriage, cohabitation and procreation. Covers the law of marriage, divorce, annulment, separation, unmarried cohabitation, illegitimacy, adoption and rights of child custody, parental property on divorce, inheritance, and related rights. Legal rules are placed into the social setting in which they operate, and emphasis is given to family policy as reflected in current developments in family law reform, including constitutional law. 3 professional hours. 4 graduate hours.

**LAW 668 Decedent's Estates and Trusts**  credit: 3 OR 4 hours.
Studies the means of transferring wealth, with primary emphasis on gratuitous transfers; the means available for making gratuitous transfers, including the validity and effect of testamentary instruments and trust deeds; and problems concerning the dispositive provisions of any type of instrument which transfers wealth. 3 professional hours. 4 graduate hours.

**LAW 669 Problems in Estate Planning**  credit: 2 TO 4 hours.
Selected problems in the planning of estates which will serve to integrate the basic materials in property, trusts, wills, and income, estate, and gift taxation. 2 to 3 professional hours. 4 graduate hours. Prerequisite: LAW 647, LAW 650, and LAW 668.

**LAW 670 Elder Law**  credit: 3 OR 4 hours.
Examines the various legal implications of people living longer, with special emphasis on public policies and programs affecting the financing of medical care, housing arrangements, and income maintenance of persons aged 60 years and older. 3 professional hours. 4 graduate hours.

**LAW 671 Children and the Law**  credit: 3 hours.
The course will examine how the law treats children and childhood in civil and criminal legal disputes. It will consider the status, rights and obligations of children when they appear either as actors or subjects in various social and public institutions (e.g. courts, schools, prisons, families, and the workplace). We will explore these issues while considering the fundamental debate of juvenile law: how the legal system should strike the balance between trying to protect children and recognizing children as autonomous and fully accountable persons.

**LAW 672 Feminism and the Law**  credit: 3 hours.
This course focuses on contemporary issues surrounding law and feminism. The course begins with an overview of different strands of feminist theory and then turns to specific issues affecting women. The topics covered in the course include violence against women, reproductive rights, marriage and divorce, motherhood, sexual harassment, critical race feminism, comparable worth, sexual orientation, prostitution, pornography, and women in the legal profession. The readings for the course include not only court opinions, statutes, and law review articles, but also a significant amount of social-science literature. Students are asked to write a 15-page paper and to help lead the discussion once during the semester.

**LAW 673 Workers Compensation**  credit: 2 hours.
This course will be a general survey class on rules relating to workers compensation claims and litigation. The course will begin with an overview of the historical development of workers compensation laws, then survey the general principles applicable to such laws, with particular emphasis on the Illinois Workers Compensation Act. Guest speakers will include an arbitrator, a petitioner's attorney, and a claims manager.

**LAW 675 Products Liability**  credit: 2 TO 4 hours.
Substantive theories of products liability: negligence, breach of warranty, strict liability, and tortious misrepresentation; procedural and remedial problems with, and defenses to, each substantive theory. 2 to 3 professional hours. 2 to 4 graduate hours.

**LAW 676 Insurance Law**  credit: 3 OR 4 hours.
Covers principles generally applicable to insurance law and includes distinctive rules governing certain types of insurance coverage; objectives are to examine the nature of the insurance contract, marketing of insurance, principles of indemnity, individuals and entities protected by insurance rules, and risks that are shifted by insurance coverage. 3 professional hours. 4 graduate hours. Prerequisite: First-year curriculum.

**LAW 678 Anthropology and Law**  credit: 3 OR 4 hours.
Same as ANTH 560. See ANTH 560.

**LAW 679 Criminal Proc: Adjudication**  credit: 3 OR 4 hours.
Problems in the administration of criminal justice, with emphasis upon the commencement of formal proceedings (bail, decision to prosecute, grand jury, preliminary hearing, location of prosecution, scope of prosecution, speedy trial); the adversary system (pleas, discovery, jury trials, prejudicial publicity, ethical problems, double jeopardy); and post-conviction review (post-trial motions, appeals, habeas corpus, related post-conviction remedies). 3 professional hours. 4 graduate hours.

**LAW 680 Professional Responsibility**  credit: 2 TO 4 hours.
Problem course analyzing ethical issues that arise in the practice of law and considering the approaches to such issues taken by the American Bar Association's Code of Professional Responsibility, Model Rules of Professional Conduct, and Code of Judicial Conduct. 2 to 3 professional hours. 2 to 4 graduate hours.

LAW 681  Civil Procedure II  credit: 3 OR 4 hours.
Elective for second- and third- year law students introduces issues of jurisdiction and choice-of-law, such as subject matter jurisdiction, removal, Erie doctrine and federal common law. 3 professional hours. 4 graduate hours. Prerequisite: LAW 607.

LAW 682  Evidence  credit: 3 OR 4 hours.
Law governing the proof of disputed issues of fact; function of the court and jury; competence and examination of witnesses; standards of relevancy; privileged communications; illegal evidence; hearsay rule; best evidence rule; presumptions; and judicial notice. 3 or 4 professional hours. 4 graduate hours.

LAW 683  Complex Litigation  credit: 3 OR 4 hours.
Legal and practical issues in "complex" cases: problems of joinder in multi-party cases, consolidation of cases brought independently (including the activities of the Judicial Panel of Multidistrict Litigation), class actions, discovery issues including the assertion and waiver of evidentiary privileges and use of computers, consequences of active judicial "management" of litigation at the pretrial stage, settlement of complex cases, and res judicata problems. 3 professional hours. 4 graduate hours.

LAW 684  Federal Courts  credit: 3 OR 4 hours.
Examination of the relationship of federal courts to other organs of federal government and to the states, including an analysis of cases dealing with congressional control over jurisdiction, federal review of state court decisions (including the relationship between state and federal substantive and procedural law), and application of law to fact; the scope of the federal question of jurisdiction in federal courts; abstention; federal injunctions of state criminal proceedings; and problems of justiciability, advisory opinions, and mootness. 3 professional hours. 4 graduate hours.

LAW 685  Dispute Resolution  credit: 2 TO 4 hours.
Examination of the limitations, consequences, and costs, as well as the indispensability of some aspects of modern litigation; the possibilities, requirements, and legal problems of consensual and of court-annexed dispute resolution processes alternative to final judicial adjudication, including legal counseling, negotiation, mediation, arbitration, mini-trials, summary trials, summary jury trials, early neutral evaluation, private resolution providers, and settlement processes; current disputes used for illustration. 2 to 3 professional hours. 2 or 4 graduate hours.

LAW 686  Remedies  credit: 2 TO 4 hours.
Survey of legal and equitable remedies for the protection of personal and property rights. Procedural and substantive aspects of injunctions; restitution of unjust enrichment in the context of the receipt of unsolicited benefits, benefits derived from the commission of tortious acts, and the mistaken acquisition of benefits; alternative remedies arising from bargain transactions; and remedies for violations of civil rights. 2 to 3 professional hours. 2 or 4 graduate hours.

LAW 687  Jurisprudence  credit: 3 OR 4 hours.
The place of law in society; the nature, goals, and methods of law; and the relation of law and social science. 3 professional hours. 4 graduate hours.

LAW 688  American Legal History  credit: 3 OR 4 hours.
Studies selected topics in the development of law and legal institutions in the United States with particular emphasis on the history of the legal profession, legal education, and the role of lawyers and courts in U.S. society. Same as HIST 484. 3 professional hours. 4 graduate hours. Prerequisite: Some prior study of U.S. history, particularly social and intellectual, is helpful but not required.

LAW 689  Law and Economics  credit: 3 OR 4 hours.
Introduction to the economic analysis of law, including property, contracts, torts, criminal law, and related topics. 3 professional hours. 4 graduate hours.

LAW 690  Advanced Law and Economics  credit: 2 hours.
This course will examine new literature on topics covered in the basic course on law and economics (such as intellectual property law, moral theory in the law, property and liability rules, and criminal law) and scholarly literature on new issues in the field (such as game theory in the law, bankruptcy, law in assisting the transition and developing economies, econometric studies of legal topics, and behavioral law and economics). Students must lead a discussion, participate in the other seminar discussions, present their paper topics to the group, and submit a substantial research paper of no less than 20 pages. Prerequisite: Completion of LAW 689.

LAW 691  Philosophy of Law  credit: 3 TO 4 hours.
The course works through two topics: the nature of law and legal reasoning; and the nature of both liberty and justice, both by themselves and as limits on what should be the content of law. Under the first topic, we examine both ancient and modern law and natural rights views; legal positivist and skeptical views, divorcing law from any connection to morality; "interpretivist" views that liken
law to literature and other hermeneutic disciplines such as theology and psychoanalysis; and the alleged obligation to obey the law of both citizens and judges. Under the second topic we examine what content can be given to any supposed general right to liberty; how such a right, if it exists, should limit legislation on such topics as abortion, homosexual behavior, birth control, recreational drug use, and the like; what content can be given to three kinds of justice (distributive justice, corrective justice, and retributive justice); whether distributive justice requires, or is even compatible with race-based or gender-based affirmative action plans in employment and education; whether reparations for long past injuries to groups are required by corrective justice; whether the death penalty is required by, or is even consistent with, retributive justice.

**LAW 692 Critical Race Theory** credit: 3 hours.
This seminar will introduce students to the historical development and basic theoretical principles of Critical Race Theory, an intellectual movement in critical scholarship that (1) rejects the possibility of race-neutral practices and institutions; and (2) is committed to the possibility of an affirmative program for racial emancipation. Students will read a variety of writings by critical race theorists and their critics; a paper will be required.

**LAW 693 Clinical Training** credit: 1 TO 4 hours.
Several clinics offer practical legal education, through field work in public agencies (externships) or through a variety of in-house clinics. The clinics focus on specific lawyering skills that are relevant to a particular area of practice (e.g., litigation or transactional), and have a classroom component. Students engage in legal work under the supervision of experienced attorneys; the work may include conducting client interviews, doing legal research and fact investigation, preparing legal documents, negotiating, and in some cases, engaging in real trials. Approved for both letter and S/U grading.

**LAW 694 Trial Advocacy** credit: 1 OR 2 hours.
Examination of the problems of advocacy and tactics at the trial level. Students engage in all aspects of actual trial work, including witness preparation, opening and closing statements, direct and cross examination, and jury instructions; culminates in student conduct of a full jury trial in late spring; demonstrations are conducted by staff and visiting judges and practitioners. May be repeated to a total of 4 hours. Approved for both letter and S/U grading. Prerequisite: Completed or enrolled concurrently with LAW 682. JD students only.

**LAW 695 Fundamentals of Trial Practice** credit: 3 OR 4 hours.
Explores the theory and reality of trial practice, from developing a theory of the case through submission of jury instructions; topics include fact gathering, jury selection, opening statements, direct and cross-examination, exhibits, expert witnesses, and closing arguments. 3 professional hours, 4 graduate hours. Approved for both letter and S/U grading. Prerequisite: LAW 694 and completion or concurrent enrollment in LAW 682. JD students only.

**LAW 696 Legal Problems** credit: 1 TO 2 hours.

**LAW 697 Moot Court Board** credit: 1 TO 2 hours.
Preparation of an appellate brief; presentation of an appellate oral argument; participation in intramural, state, national, or international moot court competition. May be repeated to a maximum of 4 hours. No graduate credit. Approved for S/U grading only.

**LAW 698 Negotiations** credit: 4 hours.
This course provides an overview of the theoretical issues negotiators must confront and an opportunity for students to hone their negotiating skills. Attention will be paid to cooperative and competitive negotiations, strategic and psychological barriers to successful negotiations, the personal styles of negotiators, and differences between two-party and multi-party negotiating situations. There will be numerous in-class exercises and writing assignments.

**LAW 699 Independent Study** credit: 0 TO 2 hours.
Individual research on a special problem selected in consultation with the instructor. 0 to 2 professional hours. No graduate credit. Approved for both letter and S/U grading. May be repeated to a maximum of 2 hours.

**LAW 700 Upper Level Writing** credit: 0 hours.
Carries no academic credit, but recognizes students that have completed the Upper Level Writing requirement. Approved for S/U grading only. May be repeated in the same or separate terms. Prerequisite: Enrollment in the J.D. program with second year standing at the College of Law.

**LAW 792 Current Legal Problems** credit: 1 TO 4 hours.
This is an umbrella course listing for specialty topics of current legal issues of interest. May be repeated.

**LAW 793 Advanced Litigation Topics** credit: 1 TO 4 hours.
This is an umbrella course listing for specialty topics of current interest in litigation. Approved for graduate credit. May be repeated if different underlying section.
LAW 794  **Adv Topics in Business Law**  credit: 1 TO 4 hours.
This is an umbrella course listing in business law for specialty topics of current interest. Approved for both letter and S/U grading. May be repeated if different underlying section.

LAW 795  **Adv Topics in Criminal Law**  credit: 1 TO 4 hours.
This is an umbrella course listing in criminal law for specialty topics of current interest. May be repeated if different underlying section.

LAW 796  **Comparative Law Topics**  credit: 1 TO 4 hours.
This is an umbrella course listing in comparative law for specialty topics of current interest. May be repeated if different underlying section.

LAW 797  **Intellectual Property Topics**  credit: 1 TO 4 hours.
This is an umbrella course listing in intellectual property law for specialty topics of current interest. May be repeated if different underlying section.

LAW 798  **Seminars**  credit: 1 TO 4 hours.
This is an umbrella course listing for specialty topics of special interest. May be repeated.
Lingala

Linguistics
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LGLA 201  Elementary Lingala I  credit: 5 hours.
Introduction to Lingala; emphasizes grammar, pronunciation, reading and conversation in standard Lingala. Participation in language laboratory required. Same as AFST 211.

LGLA 202  Elementary Lingala II  credit: 5 hours.
Continuation of elementary Lingala, with introduction of more advanced grammar; emphasizes more fluency in speaking, reading, and writing simple sentences in standard Lingala. Participation in language laboratory required. Same as AFST 212. Prerequisite: LGLA 201.

LGLA 403  Intermediate Lingala I  credit: 4 hours.
Survey of more advanced grammar, with emphasis on increasing conversational fluency, composition skills, study of written texts in the standard and spoken Lingala dialects, and discussion of grammatical variations. Same as AFST 413. Prerequisite: LGLA 202.

LGLA 404  Intermediate Lingala II  credit: 4 hours.
Continuation of LGLA 403. Emphasizes ability to engage in reasonably fluent discourse in Lingala, comprehensive knowledge of formal grammar, and ability to read ordinary texts in various Lingala dialects. Same as AFST 414. Prerequisite: LGLA 403.

LGLA 405  Advanced Lingala I  credit: 3 hours.
Third-year Lingala with emphasis on conversational fluency and on increased ability in reading and comprehending texts, including newspaper prose and Central African cultural materials, in at least two Lingala varieties. Course will also deal with the advanced level grammar found in such texts. Same as AFST 415. Prerequisite: LGLA 404 or equivalent.

LGLA 406  Advanced Lingala II  credit: 3 hours.
Continuation of LGLA 405 with increased emphasis on conversational fluency and comprehension of advanced level grammar in the reading of a variety of prose texts on current cultural issues. Same as AFST 416. Prerequisite: LGLA 405 or equivalent.

LGLA 407  Topics Lingala Lang & Lit I  credit: 3 hours.
Selected readings from modern Lingala authors and composers, with a focus on novels, plays, music, and basic poetry illustrative of Central African cultural issues and advanced level Lingala grammar, as well as development of expository writing skills. Same as AFST 417. Prerequisite: LGLA 406.

LGLA 408  Topics Lingala Lang & Lit II  credit: 3 hours.
Continuation of LGLA 407 with increased emphasis on the reading and comprehension of literary texts exemplified in advanced level novels, plays, and poetry, as well as on advanced mastery of expository writing skills. Same as AFST 418. Prerequisite: LGLA 407.
LING 100  Intro to Language Science  credit: 3 hours.
Introduction to the theory and methodology of general linguistics; includes the various branches and applications of linguistics.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

LING 104  Talking Culture  credit: 3 hours.
Same as ANTH 104. See ANTH 104.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

LING 105  Language in Daily Life  credit: 3 hours.
Analysis of what constitutes knowledge of language, how it is used in daily life, and how speakers are perceived by others. Emphasis on discovering what makes language function as it does through an examination of its forms and functions in real life.

LING 111  Language in Globalization  credit: 3 hours.
Introduction to the role of language in globalization by examining communication issues concerning language use across cultural, political and geographic boundaries. Explores the interaction of language and other cultural forms in the global context. Among the topics discussed are issues of identity, spread of English and its acculturation to local contexts of use, creativity in language mixing, language in global pop cultures, language in cyberspace, as well as minority language experiences, and loss of indigenous languages. This course can be used to fulfill either Western or Nonwestern general education categories, but not both.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Western Compavr Cult

LING 115  Language and Culture in India  credit: 3 hours.
Examines the relationship between language and culture in the multilingual and multicultural context of India. Special topics of focus are: linguistic and cultural diversity in India, impact of the language and cultural contact on the structure and function of languages (convergence, diglossia, code-mixing, pidgins and creoles), language and identity, language of religion, language and gender, language in the media, literature and culture, language and power, language and globalization. Same as RLST 115.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

LING 121  American Sign Language I  credit: 4 hours.
Same as SHS 121. See SHS 121.

LING 191  Freshman Honors Tutorial  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars. May be repeated once.
Prerequisite: Consent of departmental honors advisor.

LING 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

LING 210  Language History  credit: 3 hours.
Addresses the question "Why does language change?" Specific topics include: the history and origin of writing; why pronunciation changes; change in vocabulary and what it tells us about change in culture and society; the relation between "language" and "dialect"; multilingualism and its consequences, including Pidgins and Creoles; genetic relationship between languages, with focus on the "Indo-European" family (English, German, French, Russia, Latin, Greek, and Sanskrit, etc.) and the relationships between human languages. Prerequisite: Fulfillment of the foreign language requirement of the College of Liberal Arts and Sciences.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Persp
LING 221  American Sign Language II  credit: 4 hours.
Same as SHS 221. See SHS 221.

LING 225  Elements of Psycholinguistics  credit: 3 hours.
Introduction to the theory and methodology of psycholinguistics with emphasis on language acquisition and linguistic behavior.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

LING 240  Language in Human History  credit: 3 hours.
Role of language in the life of nations as a tool of communication, as a symbol of identity, and as a means of power. Scripts and orthographies, language planning, culture and language glossopolitics. Prerequisite: Three years of high school foreign language study or fulfillment of the foreign language requirement of Liberal Arts and Sciences.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

LING 250  Language Diversity in the USA  credit: 3 hours.
Investigation of the uses and users of different language varieties - English and non-English - as well as issues of language discrimination, gender/race/class, youth culture, and new communication technologies.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

LING 260  Language and the Law  credit: 3 hours.
Explores the various ways in which issues of language intersect with issues of law. Through the analysis of specific pieces of legislation and court cases, we study the linguistic aspects of fundamental questions of the humanities and social sciences - individual freedom and group membership, the role of the state, language and culture. Focus on the United States, but other national situations will be included as necessary.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

LING 270  Language, Technology & Society  credit: 3 hours.
What technologies have humans developed to augment the quintessential human ability: language? We start with the development of writing, the first technology that was specifically designed for language, and trace its history through the invention of printing, and into the digital age. With the advent of computers the relevance of language for technology has broadened significantly. We review technologies such as automatic speech recognition, speech synthesis and automatic translation, and discuss their implications for present and future human-machine interaction. Prerequisite: LING 100 or consent of instructor.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

LING 290  Individual Study  credit: 2 TO 4 hours.
Individual readings and research reports on special topics dealing with the theoretical or applied aspects of the linguistic sciences. May be repeated to a maximum of 8 hours. Prerequisite: Written consent of instructor.

LING 300  Anat & Physiol Spch Mechanism  credit: 4 hours.
Same as SHS 300. See SHS 300.

LING 301  Elements of Syntax  credit: 3 hours.
Introduction to concepts and techniques essential for syntactic analysis and description, with special attention to testing analyses and justifying them. Prerequisite: LING 100 or consent of instructor.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

LING 302  Elements of Phonology  credit: 3 hours.
Introduces elements of phonological theory and data analysis. Emphasis is placed on both Structuralist and Generative theories, introducing students to the principles of phonological contrast, allophony, neutralization, and markedness. Formal phonological models are considered, including both distinctive feature theory and prosodic theory. Equal emphasis is placed on linguistics data analysis. Prerequisite: LING 100 or consent of instructor.

LING 303  General Speech Science  credit: 4 hours.
LING 307  **Elmnts Semantics & Pragmatics**  credit: 3 hours.
Introduction to the theory of meaning for natural language, including techniques for the description of lexical meaning, compositional
determination of phrase and sentence meaning, and pragmatic effects on interpretation in context. Prerequisite: LING 100 or consent of
instructor.

LING 321  **American Sign Language III**  credit: 4 hours.
Same as SHS 321. See SHS 321.

LING 391  **Honors Individual Study**  credit: 2 TO 4 hours.
Study and research for honors thesis; open only to seniors in the linguistics major who are eligible for departmental distinction. May be
repeated to a maximum of 8 hours. Prerequisite: Written consent of instructor and linguistics course average of 3.4.

LING 400  **Intro to Linguistic Structure**  credit: 2 OR 3 hours.
Introduction to the theory and methodology of the science of linguistics with special reference to phonology and syntax. Same as ANTH
400. 3 undergraduate hours. 2 graduate hours.

LING 401  **Intro to General Phonetics**  credit: 2 OR 3 hours.
Introduction to the main branches of general phonetics and phonological theory; emphasis on analysis of non-Western languages and
research techniques. 3 undergraduate hours. 2 graduate hours.

LING 402  **Tools & Tech Spch & Lang Proc**  credit: 3 hours.
Introduction to aspects of the tools and methods of studies in speech and natural language processing (NLP), with a focus on
programming for NLP and speech applications, statistical methods for data analysis, and tools for displaying and manipulating speech
data. Prerequisite: LING 400 or equivalent general introduction to linguistics.

LING 404  **Tutorials in Non-Western Lang**  credit: 1 TO 5 hours.
Advanced or intensive language instruction in a selected non-Western language; excludes instruction in East or Southeast Asian
languages. May be repeated with approval. 1 to 5 undergraduate hours. 2 to 4 graduate hours. Prerequisite: Consent of instructor.

LING 405  **Intro to Applied Linguistics**  credit: 2 TO 4 hours.
Introduction to the applications of general linguistic theory to the specific fields of stylistics, theory of translation, contrastive analyses,
and the teaching and learning of foreign and second languages; practical assignment work. Same as EIL 405. 3 undergraduate hours.
2 or 4 graduate hours. Prerequisite: Consent of instructor.

LING 406  **Intro to Computational Ling**  credit: 3 OR 4 hours.
Introduces the field of natural language processing and computational linguistics. Topics include finite-state methods, parsing,
probabilistic methods, machine learning in NLP, computational semantics and applications of NLP technology. The course is mostly
about concepts rather than programming, though some programming assignments will be given. 3 undergraduate hours. 4 graduate
hours. Prerequisite: LING 400 or equivalent; and LING 402 or a C S 100-level programming course, or consent of instructor.

LING 407  **Intro to Mathematical Ling**  credit: 3 OR 4 hours.
Principles of set theory, logic and formal systems, and automata theory; introduction to the formal theory of grammars. Same as ANTH
406. 3 undergraduate hours. 4 graduate hours. Prerequisite: LING 400.

LING 408  **Writing Systems**  credit: 3 OR 4 hours.
Introductory survey of writing systems, with emphasis on what kind of linguistic information is encoded; historical development and
adaptation of writing systems to new languages; computational models of writing systems; decipherment; the effect of properties of
writing systems on human reading, and linguistic awareness; implications of writing systems for linguistic theory. Prerequisite: LING 400
or equivalent general introduction to linguistics, or LING 302 or equivalent introduction to phonology. 3 undergraduate hours. 4 graduate
hours.

LING 409  **Intro to Indo-European Ling**  credit: 3 OR 4 hours.
Introductory survey of Indo-European languages and their mutual relations; exemplification of methods of reconstruction; principles of
comparative phonology and introductory survey of morphology; and discussion of theories about the original home, culture, and society
of the Indo-Europeans. Same as GRK 410 and LAT 410. 3 undergraduate hours. 4 graduate hours. Prerequisite: Fulfillment of the
language requirement of the College of Liberal Arts and Sciences.

LING 410  **Historical Linguistics**  credit: 2 TO 4 hours.
Introduction to historical and comparative linguistics with particular attention to theoretical issues. 3 undergraduate hours. 2 or 4
graduate hours. Prerequisite: LING 400 and LING 401 or concurrent registration.

Same as SHS 301. See SHS 301.
LING 412  **Lang in African Culture & Soc**  credit: 3 OR 4 hours.
Introductory survey of the role of language in African cultures and societies, with particular emphasis on the study of indigenous African linguae francae in multilingual settings, their spread, and use as media of communication in various domains, and as tools of development. Same as AFST 412. 3 undergraduate hours. 4 graduate hours. Prerequisite: AFST 222 or consent of instructor.

LING 416  **Structure of French Language**  credit: 3 hours.
Same as FR 416. See FR 416.

LING 418  **Language&Minorities in Europe**  credit: 3 OR 4 hours.
Same as FR 418, GER 418, PS 418, and SLAV 418. See FR 418.

LING 420  **Intro to African Linguistics**  credit: 3 OR 4 hours.
Introduction to the genetic and typological classification of the main language families of Africa; concentration on grammatical and phonological characteristics. 3 undergraduate hours. 4 graduate hours. Prerequisite: LING 100 or LING 400; consent of instructor.

LING 423  **Language Acquisition**  credit: 3 OR 4 hours.
Same as MS 423 and PSYC 423. See PSYC 423.

LING 425  **Intro to Psycholinguistics**  credit: 3 OR 4 hours.
Introductory survey of psychological and linguistic approaches to the study of communication. Same as MS 425. 3 undergraduate hours. 4 graduate hours. Credit is not given for both LING 425 and PSYC 425. Prerequisite: An introductory course in linguistics or psychology.

LING 427  **Language and the Brain**  credit: 3 OR 4 hours.
Same as PSYC 427 and SHS 427. See PSYC 427.

LING 429  **Language of Religion**  credit: 3 OR 4 hours.
Same as RLST 429. See RLST 429.

LING 430  **Intro to East Asian Ling**  credit: 3 OR 4 hours.
Introduction to the genetic relation of the Far Eastern languages with other languages; concentration on synchronic analysis of phonology and syntax. Same as EALC 430. 3 undergraduate hours. 4 graduate hours. Prerequisite: LING 400; consent of instructor.

LING 432  **Gender and Language**  credit: 3 OR 4 hours.
Same as CMN 432 and GWS 432. See CMN 432.

LING 435  **Neuroling of Bilingualism**  credit: 3 OR 4 hours.
Study of the structure and function of the brain in relation to language processing in bi- and multi-linguals, with a focus on how two or more languages are organized, produced, and perceived in one brain. Same as EIL 435 and SLS 435. 3 undergraduate hours. 4 graduate hours. Graduate students are required to write a term paper. Prerequisite: LING 225, LING 405, LING 425, or consent of instructor.

LING 438  **Philosophy of Language**  credit: 3 OR 4 hours.
Same as PHIL 438. See PHIL 438.

LING 450  **Sociolinguistics I**  credit: 2 TO 4 hours.
Introduction to the fundamental concepts, philosophy, and research methods of the study of language in its social contexts. Special attention to language spread, and language variation; language attitudes; language diversity; code-switching; language standardization; and language identity and loyalty. Same as EIL 450. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: LING 405 or equivalent.

LING 462  **Intro Romance Ling**  credit: 3 OR 4 hours.
Same as FR 462, ITAL 435, PORT 435, RMLG 435, and SPAN 435. See SPAN 435.

LING 465  **Introduction to Bantu Syntax**  credit: 3 OR 4 hours.
Introduction to the study of the syntax of Bantu languages, with particular attention to the morphological, argument, and syntactic structures that characterize these languages. 3 undergraduate hours. 4 graduate hours. Prerequisite: LING 400 or equivalent.

LING 469  **Structure of Semitic Languages**  credit: 3 OR 4 hours.
In-depth survey of comparative issues in Semitic Linguistics, with particular emphasis on morphology, syntax, phonology and language change from the perspectives of current linguistic theories. Same as AFST 469. 3 undergraduate hours. 4 graduate hours. Prerequisite: LING 100, LING 400, or consent of instructor.
LING 470  Mind, Culture and Society  credit: 3 OR 4 hours.  
Same as ANTH 470 and MS 470. See ANTH 470.

LING 480  Intro to Slavic Linguistics  credit: 3 OR 4 hours.  
Same as SLAV 480. See SLAV 480.

LING 486  Computer Foreign Lang Tchg  credit: 4 hours.  
Same as CLCV 482, EIL 482, FR 482, GER 482, HUM 482, ITAL 482, PORT 482, SLAV 482, and SPAN 482. See HUM 482.

LING 488  English Phon & Morph for TESL  credit: 3 OR 4 hours.  
Same as EIL 488. See EIL 488.

LING 489  Theoretical Foundations of SLA  credit: 3 OR 4 hours.  
Same as EIL 489, FR 481, GER 489, ITAL 489, PORT 489, SLS 489, and SPAN 489. See EIL 489.

LING 490  Special Topics in Linguistics  credit: 3 OR 4 hours.  
Course provides an opportunity to focus on various subfields of the linguistic sciences, depending on the interests of the faculty and 
student. 3 undergraduate hours. 4 graduate hours. May be repeated as topic varies to a maximum of 9 undergraduate hours or 12 
graduate hours. Students may register for up to two sections in the same term. Prerequisite: LING 100, LING 400, or consent of 
instructor.

LING 501  Syntax I  credit: 4 hours.  
Introduction to the fundamental concepts, philosophy, and methods of syntactic theory. Prerequisite: LING 400 or equivalent.

LING 502  Phonology I  credit: 4 hours.  
Examination of language-specific phonological problems with a view toward formulating a language-independent theory of phonology. 
Prerequisite: LING 401 or consent of instructor.

LING 504  Practicum  credit: 4 hours.  
Supervised practical experience in extended linguistic research on individual topics of the student's choice. Prerequisite: LING 501 and 
LING 502.

LING 505  Language Teaching Practicum  credit: 1 hours.  
Introduction for graduate teaching assistants to issues specific to the teaching of the so-called less commonly taught language (LCTLs) 
offered by the Department of Linguistics (African Languages, Arabic, Hindi, Persian, Sanskrit, and Turkish). Familiarizes the instructors 
with developments in second language acquisition research with special focus on LCTLs. Different approaches to LCTL teaching will be 
discussed together with practical information on how to develop instructional materials using new technologies and online resources. A 
number of presentations, demonstrations, and discussions will be led by visiting experts from UIUC and outside UIUC. May be repeated 
to a maximum of 2 hours in separate terms.

LING 506  Topics in Computational Ling  credit: 4 hours.  
Provides an introduction to practical problems in computational linguistics in a laboratory setting. At the beginning of the semester, a 
substantial project will be assigned to the class, and the class will work as a team towards implementing a solution, and evaluating 
the final product against a test corpus, which will also be developed during the class. Topical readings will also be assigned and will 
be discussed. May be repeated if topics vary. Students may register in more than one section per term to a maximum of 8 hours and 
may be repeated in subsequent terms to a maximum of 12 hours. Approved for letter or S/U grading. Prerequisite: LING 406, and an 
introductory level Computer Science programming course, or consent of instructor.

LING 507  Formal Semantics I  credit: 4 hours.  
Introduction to formal semantic theory for natural language, with attention to quantification, anaphora, tense, intensionality, and related 
topics. Prerequisite: LING 407 or consent of the instructor.

LING 509  Cognitive Semantics  credit: 4 hours.  
Course analyzes the nature of linguistic semantic categories and their implications for theories of grammar; examining the issues and 
controversies surrounding frame semantics, decompositional semantics, prototype theory, and conceptual metaphor. Approved for both 
letter and S/U grading.

LING 510  Topics in African Linguistics  credit: 4 hours.  
Discussion of advanced selected topics in African linguistics; concentration on morphology, tonology, phonology, sociolinguistics, 
language acquisition, and syntax. May be repeated if topics vary. Students may register in more than one section per term to a 
maximum of 8 hours and may be repeated in subsequent terms to a maximum of 12 hours. Prerequisite: LING 501 and LING 502; or 
consent of instructor.
LING 512  Language and Culture  credit: 4 hours.
Same as ANTH 512. See ANTH 512.

LING 514  Design & Stats in Lang Study  credit: 4 hours.
Quantitatively oriented approach to research design and data analysis in language study, with emphasis on principles of probability theory, descriptive and inferential statistics (including ANOVAs, correlation, and regression and analysis), parametric and non-parametric statistics, and the construction of appropriate research designs for the study of language. Term paper required. Same as EIL 574. Prerequisite: LING 400 or equivalent; LING 425, or EIL 489 or consent of instructor.

LING 515  Topics in Applied Linguistics  credit: 4 hours.
Advanced seminar to critically evaluate linguistic theories by discussing their applications to language-related areas such as contrastive linguistics, corpus linguistics, language acquisition, language and literacy, language policy, language standardization, text linguistics, and translation. Same as EIL 575. May be repeated in the same or subsequent terms to a maximum of 12 hours as topics vary. Prerequisite: LING 400, LING 405, LING 450, or LING 500, or consent of instructor.

LING 516  Field Methods  credit: 4 hours.
Analysis of the phonetic, phonological, morphological, and syntactic structure of an undescribed language through the elicitation of data from a native language consultant. The class develops a linguistic sketch of the language, including a computerized lexicon. Prerequisite: LING 501 and LING 502.

LING 518  Sociolinguistic Methodology  credit: 4 hours.
Advanced research-oriented seminar emphasizing the review and critical evaluation of theoretical and methodological approaches to sociolinguistic variation. Topics include dialectology, diachronic language change, code-mixing, pidgins and Creoles, styles, registers, and genres. Prerequisite: Consent of instructor.

LING 520  Acoustic Phonetics  credit: 4 hours.
Explores advanced issues in acoustic theory and digital signal processing in the context of linguistic phonetics and phonological research. Emphasis is placed on the spectral properties of speech sounds and their instrumental documentation. A significant portion of the course will utilize the phonetics laboratory. Prerequisite: LING 401 and LING 502.

LING 521  Speech and Hearing Acoustics  credit: 4 hours.
Same as ECE 538 and SHS 503. See ECE 538.

LING 522  Articulatory Phonetics  credit: 4 hours.
Explores advanced issues in sound production in the context of linguistic phonetics and phonological research. Three main areas of focus include an overview of vocal tract physiology and anatomy, laboratory/instrumental methodology, and linguistic patterns such as assimilations and coarticulations. Prerequisite: LING 401 or equivalent.

LING 524  Dev Psycholinguistics  credit: 2 OR 4 hours.
Same as MDIA 524 and PSYC 524. See PSYC 524.

LING 525  Psycholinguistics  credit: 2 OR 4 hours.
Same as MDIA 525 and PSYC 525. See PSYC 525.

LING 529  Second Lang Acq & Bilingualism  credit: 4 hours.
Research seminar: students will design and execute a research project on second language acquisition and/or bilingualism. Same as PSYC 529. Prerequisite: Consent of instructor.

LING 541  Syntax II  credit: 4 hours.
Issues in the theory and practice of syntactic description, with special attention to implications for universal grammar. Prerequisite: LING 501 or consent of instructor.

LING 542  Phonology II  credit: 4 hours.
Continuation of LING 502. Prerequisite: LING 502.

LING 547  Formal Semantics II  credit: 4 hours.
A continuation of LING 507 covering advanced topics in formal semantic theory. Prerequisite: LING 507 or consent of instructor.

LING 550  Sociolinguistics II  credit: 4 hours.
Focus on a critical examination of issues in the theory and practice of sociolinguistics concerning the study of language variation from a cross-linguistic perspective, language diversity, multilingualism, language ideology and power. Prerequisite: LING 450 or equivalent.

LING 551  Pragmatics  credit: 4 hours.
Examination and development of theories of language use, addressing the role of pragmatics in linguistics and in linguistic theory, with special attention to the major research questions concerning natural language processing. Prerequisite: LING 501 and LING 507, or consent of instructor.

LING 555  Socioling of World Englishes  credit: 4 hours.
In-depth profile of the sociolinguistics of English as an international language, including study of the processes of nativization and acculturation, the development of new culture-specific discourse types and literatures, attitudes of native and non-native speakers toward the power and domination of English, and approaches to teaching English in international contexts. Prerequisite: LING 450 or equivalent, or consent of instructor.

LING 559  Sem Romance Ling  credit: 4 hours.
Same as FR 559, ITAL 559, PORT 559, RMLG 559, and SPAN 557. See SPAN 557.

LING 560  Seminar in Bilingualism  credit: 4 hours.
Research-oriented seminar on theoretical and applied aspects of bilingualism; critical evaluation of linguistic, neurolinguistic, sociolinguistic, and psycholinguistic approaches to bilingualism; and concentration on selected case studies from Western and non-Western societies, especially Asia and Africa. Prerequisite: LING 450 or an introductory course in linguistics.

LING 570  Seminar in Cognitive Science  credit: 2 OR 4 hours.
Same as PSYC 514, ANTH 514, CS 549, EPSY 551, and PHIL 514. See PSYC 514.

LING 575  Exper Phon I Spch Physiol  credit: 4 hours.
Same as SHS 500. See SHS 500.

LING 576  Exper Phon II Spch Acous Perc  credit: 4 hours.
Same as SHS 501. See SHS 501.

LING 581  Topics in Syntactic Theory  credit: 4 hours.
Investigation of syntactic universals; recent developments in the theory of syntax. May be repeated if topics vary. Prerequisite: LING 541 or consent of instructor.

LING 582  Topics in Phonological Theory  credit: 4 hours.
Recent developments in the theory of phonology. May be repeated if topics vary. Prerequisite: LING 542 or consent of instructor.

LING 583  Topics Historical Linguistics  credit: 4 hours.
Advanced course on methods and current issues in historical linguistics including diachronic phonology, diachronic syntax, and language contact. 4 graduate hours. May be repeated to a maximum of 8 hours. Students may register in more than one section per term. May be repeated in subsequent terms to a maximum of 16 hours. Prerequisite: Graduate concentration in historical linguistics, or consent of instructor.

LING 584  Theories in SLA  credit: 4 hours.
Same as CI 584, EALC 584, EIL 584, EPSY 563, FR 584, GER 584, ITAL 584, PORT 584, SLS 584, and SPAN 584. See SPAN 584.

LING 585  Topics in Semantic Theory  credit: 4 hours.
Advanced topics in theoretical semantics. May be repeated to a maximum of 8 hours. Students may register in more than one section per term. May be repeated in subsequent terms to a maximum of 12 hours. Prerequisite: Consent of instructor.

LING 587  Topics in Sociolinguistics  credit: 4 hours.
Discussion of current topics in sociolinguistics that have relevance to contemporary societies. May be repeated in the same term to a maximum of 8 hours. May be repeated in separate terms to a maximum of 12 hours. Approved for both letter and S/U grading. Prerequisite: LING 450.

LING 588  Sem Second Lang Learn  credit: 4 hours.
Same as EALC 588, EIL 590, FR 588, GER 588, ITAL 588, PORT 588, SLS 588, and SPAN 588. See SPAN 588.

LING 590  Special Topics in Linguistics  credit: 2 TO 8 hours.
Individual studies in the areas of linguistics not covered by regular course offerings.

LING 591  Seminar in Linguistic Analysis  credit: 2 OR 4 hours.
Discussion of advanced topics of current interest. May be repeated with approval. Prerequisite: LING 501 and LING 502.

LING 594  Math Models of Language  credit: 3 OR 4 hours.
Same as ECE 594. See ECE 594.
LING 599  **Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
Labor and Industrial Relations

Labor and Employment Relations
Director of Institute: Joel Cutcher-Gershenfeld
Office: 247 Labor and Employment Relations Building, 504 East Armory, Champaign
Phone: 333-1482
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LIR 100  Introduction to Labor Studies  credit: 3 hours.
Provides an overview of workers and unions in American society. Looks at economic, political, and workplace issues facing working people, why and how workers join unions, how unions are structured and function, and how unions and management bargain a contract. Provides a historical overview of the American labor movement, and discusses the contemporary struggles workers and unions face in a rapidly changing global economy.

LIR 110  Labor and Social Movements  credit: 3 hours.
Explores the role of labor unions in American society. Discusses the role of labor unions in initiating actions on social issues that impact the U.S. working class, the economy, public policy, and politics. Analyzes the labor movement's interaction with the civil rights, women's, student, global justice, and living wage movements.

LIR 120  Contemporary Labor Problems  credit: 3 hours.
Focuses on problems and challenges facing American workers and the U.S. labor movement. Topics include the deterioration of the labor-management "social contract" in recent decades; a review of labor and employment law; the health care crisis; globalization and cross-border union alliances; and union democracy.

LIR 130  Intro Labr Wrkng Class History  credit: 3 hours.
Do working people have a history worth studying? What does the history of the U.S. look like when views from the point of view of those who built the country? Introduces U.S. labor and working class history. Examines the conditions of life and work of the various groups of working people: enslaved, indentured, small farmers, but especially wage workers and their families from the civil War to the present. Studies the main collective actions workers have taken to protect and improve their lives and the organizations and social movements they created to do this. Students who complete LIR 130 and want a more in-depth look at the subject should enroll in HIST 480.

LIR 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

LIR 200  Globalization and Workers  credit: 3 hours.
Is globalization good for working people in the United States and around the world? Globalization is the driving force in the world economy but it is also provoking tremendous debate and popular resistance. Students will learn the basics about globalization and its institutions from the perspective of workers’ right in the U.S. and the Third World. Analyzes the debate over free trade and sweatshops, trade agreements such as the North American Free Trade Agreement, and institutions such as the World Trade Organization and the International Monetary Fund. Closely examines working conditions in several Third World countries, and explores the role of the global justice movement.

LIR 220  The Media, Workers, and Unions  credit: 3 hours.
Workers, unions, and how the news media tells their stories. Looks at the past, the present and future. Analyzes how these stories are told in the mainstream and independent news media in the U.S., and examines the Internet's explosion and impact on these stories. Looks at how blogs, online videos, citizen journalism, and the fast changing world of Internet communication has given voice to workers and their issues. Compares the print and online media with the work done in documentaries and the cinema. Looks at the global telling of these stories. Lastly, examines the ways that unions can better tell their stories.

LIR 250  Grievance Representation  credit: 3 hours.
Examines how a union steward represents workers on the job, including how to investigate, write and negotiate grievances, and how to utilize the law to defend workers’ right on the job. Students will work collectively on case studies to determine how a steward would respond to grievances on issues such as insubordination, absenteeism, vacation, overtime, safety, and racial and sexual harassment.

LIR 260  Union Organizing  credit: 3 hours.
Provides an in-depth understanding of how to organize a union. The first half of the course will review union organizing methods and labor law. The second half of the course will analyze debates over innovative strategies, best practices, and theories of union organizing. Covers skills and theoretical analyses that are applicable for community, student, or social movement organizers.

LIR 300  Workers, Unions, and Politics  credit: 3 hours.
What is the meaning and impact of politics seen from the perspective of those at the bottom of the pyramid of political power rather than from the usual focus on the actions and perceptions of political elites? In what ways do workers become involved in politics? Under what circumstances are they likely to be successful in bringing about change? This course addresses these questions by exploring political power, political participation, and political change from a broad historical and cross-cultural perspective, but always focusing on a view of politics from the bottom up. The course analyzes the political economy of labor, and the labor movement's political influence in politics.

LIR 320 Gender, Race, Class and Work credit: 3 hours.
Provides a historical and contemporary overview of the impact and interplay of gender, race, class and other issues of identity in the workplace. Topics include: pay gap, occupational segregation, workplace harassment, low wage work, and employment discrimination laws. The response of labor unions to identity issues will also be examined. Prerequisite: LIR 100, LIR 110 or one course that covers race or gender issues is required.

LIR 412 Economics of Poverty credit: 2 TO 4 hours.
Same as ECON 412. See ECON 412.

LIR 434 Employee Benefit Plans credit: 3 OR 4 hours.
Same as FIN 434. See FIN 434.

LIR 440 Economics of Labor Markets credit: 2 TO 4 hours.
Same as ECON 440. See ECON 440.

LIR 441 Economics of Human Resources credit: 2 TO 4 hours.
Same as ECON 441. See ECON 441.

LIR 450 European Working Class History credit: 2 TO 4 hours.
Same as HIST 450 and SOC 422. See HIST 450.

LIR 480 US Work Class Hist Since 1780 credit: 2 TO 4 hours.
Same as HIST 480. See HIST 480.

LIR 522 Government Regulation credit: 4 hours.
Focuses on federal and state legislation, court and agency rulings, and executive orders that regulate a wide range of private and public employment practices including: Title VII and Affirmative Action Compliance; American with Disabilities Act; drug-, HIV-, and genetic testing; Fair Labor Standards Act; Civil Service procedures; Equal Pay Act, Family and Medical Leave Act, and employment-at-will; constitutional protection for employees, job-applicants, and others. Prerequisite: LIR 547 or LIR 591, or consent of instructor.

LIR 543 Workplace Dispute Resolution credit: 3 OR 4 hours.
Examination of the use of procedures to resolve employment disputes in both union and nonunion workplaces; comparative analysis of grievance arbitration, interest arbitration, mediation, fact-finding, and combinations of these procedures; special emphasis given to the role of third party intervention. Same as ECON 543 and LAW 665. 3 professional hours. 4 graduate hours. Professional credit only applicable to LAW 665.

LIR 545 Economics of Human Resources credit: 4 hours.
Study of the economics of personnel with the modern corporation. Topics include hiring, promotion, evaluation, discrimination, raiding, job definition, pay schemes, benefits, and design of work. Same as HRE 534. Prerequisite: LIR 593 or equivalent, or consent of instructor.

LIR 547  Labor Law I  credit: 3 OR 4 hours.
Same as LAW 662. See LAW 662.

LIR 548  Topics in Personnel Mgmt  credit: 4 hours.
Same as BADM 511. See BADM 511.

LIR 551  Labor Law and Public Policy  credit: 3 OR 4 hours.
Same as LAW 663. See LAW 663.

LIR 554  Compar Employmt Relations Sys  credit: 3 OR 4 hours.
Examines employment systems in selected developed, newly industrialized, and developing economies. Explores employment systems in the context of regional and political integration. Topics include the organization and policies of unions and employers, as well as management-labor relations, and the roles of firms, national governments, and international organizations in shaping employment systems. Emphasis will be placed on the analytical tools needed to make multi-country comparisons, to link theory and practice, and to understand the reasons for major changes in the nature of the employment relations. Same as LAW 666. 3 professional hours. 4 graduate hours. Professional credit only applicable to LAW 666.

LIR 556  Industrial Relations Theory  credit: 4 hours.
Integrated analysis of the principles of industrial relations through the study of the works of the major theorists and their critics.
Prerequisite: Consent of instructor.

LIR 557  Human Resources Theory  credit: 4 hours.
Continuation of LIR 556. Focuses on contemporary research in human resource management and related fields.

LIR 558  Faculty-Student Workshop  credit: 0 TO 4 hours.
Training and experience for Ph.D. students in the application of social science and industrial relations theory and research methodology to contemporary industrial relations problems through presentation and discussion of faculty and student research. Ph.D. students are required to make presentations and to participate in workshop discussions during the entire period of their campus residency. Approved for both letter and S/U grading.

LIR 559  Micro Research Methods  credit: 4 hours.
Provides doctoral students a foundation for conducting independent, scholarly micro research (i.e., individuals or small groups as the primary unit of analysis) by addressing the components of the research process. This foundation for conducting independent research is based on the research process as an open system of interconnected choices that unfold sequentially: (1) Choosing and framing a research question, (2) Choosing an hypothesis to address the research question, (3) Choosing a Strategy and Design, (4) Choosing modes for treating constructs, (5) Choosing Forms for Converting Data into Observations, (6) Choosing procedures to analyze data, and (7) Choosing conclusions for interpreting results. Prerequisite: Doctoral degree student in LER, Department of Psychology, Economics, College of Business, College of Education. Master's degree students who are considering a doctoral degree program subject to instructor approval.

LIR 561  Compensation Systems  credit: 4 hours.
Compensation theory and practice. Course addresses the theoretical and practical issues associated with the design of effective compensation systems. The design phases include establishing internal equity, external equity, and individual equity. Budgeting and administration are also addressed. Case analyses and computer simulations may be used to supplement course materials.

LIR 562  HR Planning and Staffing  credit: 4 hours.
Examines conceptual issues, policies, and practices relating to the attraction, selection, development, and planning for the most effective utilization of human resources.

LIR 563  HR Info Sys & Comput App in IR  credit: 4 hours.
Design, implementation, and evaluation of human resource information systems (HRIS). Topics to be covered include fundamental database characteristics, information systems and management processes, systems analysis and needs assessment in Human Resources and Industrial Relations departments, implementing HRIS systems, the use of HRIS systems to solve organizational problems, information systems and labor relations. A series of cases and computer exercises which will play a major role in determining the course grade will be used. Regular seminars and some laboratory sessions will be scheduled throughout the term. Prerequisite: Graduate standing in Labor and Employment Relations or consent of instructor.

LIR 564  HR Training and Development  credit: 2 hours.
 Provides students a firm understanding of human resource training and development systems in today's business environment. A constant theme setting the back drop for this course will be on the various kinds of change facing organizations and how these changes relate to human resource training and development. Aspiring HR professionals will gain essential knowledge to effectively manage employee training and development systems in a variety of companies.

**LIR 565  HR Management and Strategy  credit: 4 hours.**

Designed to provide integration across the specific functional areas of the human resources management (HRM) field, while at the same time demonstrating the linkages horizontally within HRM and vertically with strategic management of the firm. This case-focused course places emphasis on human resources issues of strategic importance to the organization. Same as BADM 512. Prerequisite: One prior course from the Organizational Behavior and Personnel Management distribution subject area list (in the MHRIR degree requirements for the graduate degree in Labor and Employment Relations).

**LIR 566  International HR Management  credit: 4 hours.**

Human resource management issues examined from the perspective of the multinational firm. Topics include globalization and human resource strategy, management and the structure of multinational firms, dealing with intercultural differences, selecting employees for foreign assignments, training and developing expatriate employees, evaluation and compensation of employees in international assignments. Individual and group projects. Prerequisite: Graduate standing.

**LIR 567  Negotiation in HR Decisions  credit: 2 hours.**

General survey course concerning the strategies and tactics of bargaining and negotiation, with special emphasis on applications in human resource management contexts. Topics covered will include: the structure of negotiated outcomes; integrative bargaining tactics; distributive bargaining tactics; negotiation planning; power, persuasion and influence; communication; negotiating in teams and groups; negotiating using 3rd parties (arbitrators, mediators, agents); cross-cultural negotiations. Students will discuss negotiation issues and build negotiation skills through a series of experiential exercises and cases. Credit is not given for both this course and MBA 505 (Sections W1 and W2: Managerial Negotiations). Prerequisite: Graduate standing. An introductory course in social psychology or organizational behavior is preferred but not required.

**LIR 568  Firm Performance and HR  credit: 4 hours.**

The purpose of this course is to enable students to understand some basic ideas about and measures of firm performance with heavy emphasis on the role of human resource managers. Students will gain an understanding of how human resource professionals fit into the organization, structure, and function of business firms. Many basic ideas from the field of finance will be studied. The course covers theoretical ideas and has many empirical, policy, and practitioner-relevant applications, all with the goal of providing human resource managers fundamental financial analysis tools to enable them to function effectively in their post-graduate corporate workplaces.

**LIR 569  Power & Influence in HRM  credit: 2 hours.**

Designed to help prospective human resource managers learn how to use power and influence as effective tools for understanding the surroundings in which they will be working with and managing people, and achieving the goals that they set for themselves. It provides frameworks and practical tools that allow students to make sense of on-the-job learning experiences and equip them with basic diagnostic and action-planning skills that they can use at different points in their careers - and to consider difficult ethical questions in the process. Prepares students to get things done in the real world, where personalities and office politics sometimes hinder rather than help them.

**LIR 590  Individual Topics  credit: 0 TO 8 hours.**

Students in labor and industrial relations may register for this unit with the consent of the curriculum adviser and the adviser under whom the student will perform individual study or research. Such individual work may include special study in a subject matter for which no course is available or an individual research project, including on-the-job research in industry, which is not being undertaken for a thesis. Approved for both letter and S/U grading.

**LIR 591  Employment Relations Systems  credit: 4 hours.**

General framework for the analysis of employment relationships. Topics include industrial relations theory, the American system of collective bargaining, intercountry system differences, and human resource management strategies and practices. Prerequisite: Graduate standing.

**LIR 592  Research Methods in LIR  credit: 4 hours.**

Systematic analysis of theories and procedures of the various social and physical sciences bearing on research in labor and industrial relations; primary emphasis on the process of integrating the approaches and techniques of the various social sciences with respect to the study of problems in labor and industrial relations as met in practice in management, the union, and government service, as well as in teaching and research in the field. Prerequisite: Major in social sciences or consent of instructor.

**LIR 593  Quantitative Methods in LIR  credit: 4 hours.**

Application of statistical methods to problems in human resources and industrial relations. Analysis and presentation of results using computer software. Covers statistical techniques through analysis of variance and multiple regression. Prerequisite: Any elementary statistics course.
LIR 594  **Tutorial Seminar**  credit: 0 TO 4 hours.
Research experience for Master’s students in carrying out a problem solving project from formulation to written report in a chosen area of labor and industrial relations. Each student selects an individual topic with the approval and guidance of a faculty member and participates in a Tutorial Workshop. Approved for both letter and S/U grading. Prerequisite: Completion of no fewer than 24 graduate hours of LER course work.

LIR 595  **Managing Diversity Globally**  credit: 4 hours.
In a global economy workplace diversity is not a trend; it is a reality faced by corporate leaders, human resource professionals and management consultants. Within the US, immigration, migration, and gender and racial differences have been major trends shaping workplace composition. Globalization places additional pressures on managing workplace diversity effectively. In this setting, training managers and human resource professionals to manage differences and adapt to multiple national and cultural contexts is an imperative. Course provides an in-depth understanding of how managers and HR professionals can be effective in not only managing diversity in a global context, but also in leveraging global diversity as a competitive advantage. By the end of this course students will have a holistic appreciation of the tools necessary to implement effective diversity management practices for a globally inclusive workplace.

LIR 597  **Managing Employee Performance**  credit: 4 hours.
Managing employee performance effectively is one of the most complex and challenging issues facing companies today. While business leaders acknowledge the need for implementing effective performance management systems, recent studies indicate that an overwhelming majority of performance appraisal and management systems are unsuccessful. Provides students with an understanding of the challenges, opportunities, and pitfalls that govern the implementation of these systems in the present business context. Aims at providing students with practical and conceptual tools that will aid them in future endeavors to design and implement performance management systems. Format includes in-class discussions, case studies and individual assignments and papers.

LIR 598  **Des High-Involvemt Workplaces**  credit: 4 hours.
Intensive analysis of strategies for enhancing the involvement and commitment of employees in work organizations. Focus is on the design of jobs, work teams, feedback programs, and reward systems that contribute to employee well-being and to organizational effectiveness.

LIR 599  **Thesis Seminar**  credit: 0 TO 16 hours.
For all students writing theses in LER at the MHRIR and Ph.D. levels. May be repeated. Approved for S/U grading only.
Library and Information Science

Library and Information Science, Graduate School of
Associate Dean: Linda C. Smith
School Office: 112A Library and Information Science Building, 501 East Daniel Street, Champaign
Phone: 333-3280
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LIS 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

LIS 201  **Info Technology and Orgs**  credit: 3 hours.
Explores the way in which organizations collect, process, and exchange information, the technologies they use to handle information, and the organizational, technological and societal factors that affect information processing goals. Same as MS 201. Prerequisite: Sophomore standing.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

LIS 202  **Social Aspects Info Systems**  credit: 3 hours.
Same as INFO 202 and MS 202. See INFO 202.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

LIS 310  **Computing in the Humanities**  credit: 3 hours.
Explores use and application of technology to scholarly activity in the humanities, including projects that put classic texts on the web or create multimedia application on humanities topics. Prerequisite: Sophomore standing.

LIS 351  **Design Info Interfaces**  credit: 3 hours.
Examines issues of Human Computer Interaction and the design of better computer interfaces. Prerequisite: Sophomore standing.

LIS 390  **Special Topics Info Studies**  credit: 1 TO 3 hours.
Directed and supervised investigation of selected topics in information studies that may include among others computers and culture; information policy; community information systems; production, retrieval and evaluation of scientific or social science knowledge; computer-mediated communication; and computer-supported cooperative work. May be repeated. Prerequisite: Sophomore standing.

LIS 403  **Lit and Resources Children**  credit: 2 TO 4 hours.
Evaluation, selection and use of books and other resources for children (ages 0-14) in public libraries and school media centers; explores standard selection criteria for print and nonprint materials in all formats and develops the ability to evaluate and promote materials according to their various uses (personal and curricular) and according to children's various needs (intellectual, emotional, social and physical). 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: For Undergraduates, Junior standing, and consent of instructor.

LIS 404  **Lit and Resources Young Adults**  credit: 2 TO 4 hours.
Evaluation, selection and use of books and other resources for young adults (ages 12-18) in public libraries and school media centers; explores standard selection criteria for print and nonprint materials in all formats and develops the ability to evaluate and promote materials according to their various uses (personal and curricular) and according to young adults' various needs (intellectual, emotional, social and physical). 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: Junior standing and consent of instructor.

LIS 409  **Storytelling**  credit: 2 TO 4 hours.
Fundamental principles of the art of storytelling including techniques of adaptation and presentation; content and sources of materials; story cycles; methods of learning; practice in storytelling; and planning the story hour for school and public libraries, recreational centers, the radio, and television. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: Junior standing and consent of instructor.

LIS 410  **Text Information Systems**  credit: 3 OR 4 hours.
Same as CS 410. See CS 410.

LIS 451  **Intro to Network Systems**  credit: 4 hours.
Hands-on introduction to technology systems for use in information environments. The course steps students through choosing, installing, and managing computer hardware and operating systems, as well as networking hardware and software. Students will have an opportunity to design and create a working network environment as part of the course work.

**LIS 452  Foundations Info Proc in LIS**  credit: 2 OR 4 hours.
Covers the common data processing constructs and programming concepts used in library and information science. The history, strengths and weaknesses of the techniques are evaluated in the context of our discipline. These constructs and techniques form the basis of applications in areas such as bibliographic records management, full text management and multimedia. 4 undergraduate hours. 2 or 4 graduate hours.

**LIS 453  Systems Analysis and Mgt**  credit: 3 OR 4 hours.
Covers how to evaluate, select and manage information systems that will be used in the daily operation of libraries and information centers. Includes the systems used by technical staff and the information consumers. Course will focus on information as a product. Attention is given to the operation of an organization as a whole and the impact of change on the integration of resources, work flow and usability. Formal methods for modeling systems, and industry practice techniques of analysis are used to address these problems and opportunities. 3 undergraduate hours. 4 graduate hours.

**LIS 454  Network Systems Administration**  credit: 0 TO 4 hours.
Introduces problems of document representation, information need specification, and query processing. Describes the theories, models, and current research aimed at solving those problems. Primary focus is on bibliographic, text, and multimedia records. 3 undergraduate hours. 4 graduate hours.

**LIS 456  Info Storage and Retrieval**  credit: 3 OR 4 hours.
LIS 501  Info Org and Access  credit: 4 hours.
Emphasizes information organization and access in settings and systems of different kinds. Traces the information transfer process from the generation of knowledge through its storage and use in both print and non-print formats. Consideration will be given to the creation of information systems: the principles and practice of selection and preservation, methods of organizing information for retrieval and display, the operation of organizations that provide information services, and the information service needs of various user communities. Required M.S. degree core course.

**LIS 502  Libraries Info and Society**  credit: 0 TO 4 hours.
Explores major issues in the library and information science professions as they involve their communities of users and sponsors. Analyzes specific situations that reflect the professional agenda of these fields, including intellectual freedom, community service, professional ethics, social responsibilities, intellectual property, literacy, historical and international models, the socio-cultural role of
libraries and information agencies and professionalism in general, focusing in particular on the interrelationships among these issues
Required M.S. degree core course.

LIS 503 Use and Users of Info credit: 4 hours.
Explores information needs and uses at a general level, addressing formal and informal information channels, barriers to information, issues of value, and impacts of technology. Examines information seeking practices of particular communities and within various environments, introducing recent approaches to user-centered system design and digital library development. Provides an overview of methods that can be used to study information needs, information seeking behavior, and related phenomena. Prerequisite: LIS 501.

LIS 504 Reference and Info Services credit: 4 hours.
Explores reference and information services in a variety of settings, introduces widely used print and online sources, and develops question negotiation skills and search strategies.

LIS 505 Adm Mgt of Libs Info Centers credit: 4 hours.
Designed to explore the principles that govern how organizations and institutions work, this course provides a foundation for and introduction to the theories, practices and procedures involved in the management and administration of libraries and information centers.

LIS 506 Youth Services Librarianship credit: 4 hours.
Theory and techniques in planning, implementing and evaluating library programs/services for youth (age 0-18) in public and school libraries/media centers; the knowledge base, skills, and competencies needed by the library media professional in the development of all aspects of young people's reading/viewing/listening and information literacy skills.

LIS 507 Cataloging and Classif I credit: 4 hours.
Theory and application of basic principles and concepts of descriptive and subject cataloging; emphasis on interpreting catalog entries and making a catalog responsive to the needs of users; provides beginning-level experience with choice of entries, construction of headings, description of monographs (and, to a lesser extent, of serial publications and nonprint media), filing codes, Dewey and Library of Congress classification systems, and Library of Congress subject headings.

LIS 510 Adult Public Services credit: 4 hours.
The literature, history, and problems of providing library service to the general adult user; investigation of user characteristics and needs, and the effectiveness of various types of adult services.

LIS 511 Bibliography credit: 2 OR 4 hours.
Covers enumerative bibliography, the practices of compiling lists; analytical bibliography, the design, production, and handling of books as physical objects; and historical bibliography, the history of books and other library materials, from the invention of printing to the present. 2 or 4 graduate hours. Prerequisite: Consent of instructor.

LIS 512 History of Libraries credit: 2 OR 4 hours.
The origins, development, and evolution of libraries and related institutions, from antiquity to the twentieth century, as a reflection of literacy, recognition of archival responsibility, humanistic achievement, scientific information needs, and service to society. Same as MDIA 512.

LIS 514 History of Children’s Lit credit: 2 OR 4 hours.
Interpretation of children’s literature from the earliest times, including the impact of changing social and cultural patterns on books for children; attention to early printers and publishers of children's books and to magazines for children.

LIS 522 Info Sources and Svcs Sciences credit: 2 OR 4 hours.
Overview of the information needs and practices of researchers, practitioners, and the general public. Detailed consideration of disciplinary literatures and print and electronic reference materials. Advanced training in addressing reference questions and research problems in the sciences. Prerequisite: LIS 504 or consent of instructor.

LIS 523 Info Sources and Svcs Soc Sci credit: 2 OR 4 hours.
Overview of the information needs and practices of researchers, practitioners, and the general public. Detailed consideration of disciplinary literatures and print and electronic reference materials. Advanced training in addressing reference questions and research problems in the social sciences. Prerequisite: LIS 504 or consent of instructor.

LIS 524 Info Sources and Svcs Arts Hum credit: 2 OR 4 hours.
Overview of the information needs and practices of researchers, practitioners, and the general public. Detailed consideration of disciplinary literatures and print and electronic reference materials. Advanced training in addressing reference questions and research problems in the arts and humanities. Prerequisite: LIS 504 or consent of instructor.

LIS 525 Government Information credit: 4 hours.
Aims to acquaint students with government publications, their variety, interest, value, acquisition, and bibliographic control, and to develop proficiency in their reference and research use; considers publications of all types and all governments (local, national, international) with special emphasis on U. S., state and federal governments, and on the United Nations and its related specialized agencies. Prerequisite: LIS 504 or consent of instructor.

**LIS 526  Searching Online Info Systems**  credit: 2 OR 4 hours.
Explores the state-of-the-art in online information retrieval systems, with particular emphasis on their use as part of reference service in libraries; acquaints students with the characteristics of both bibliographic and nonbibliographic databases; and trains students in the use of at least one currently available online retrieval system. Prerequisite: LIS 504 or consent of instructor.

**LIS 530  Info Needs of Part Communities**  credit: 2 OR 4 hours.
Special topics sections for in-depth study of the characteristics and information needs of specialist users of libraries; goals and objectives, policies, and services; reference and bibliographical aids; and effective services that satisfy these special needs. Prerequisite: LIS 504 or consent of instructor.

**LIS 544  Library Cooperation & Networks**  credit: 4 hours.
Development of library systems, with special reference to public libraries as a norm for the development of library services; detailed treatment of library standards, the growth and development of county and regional libraries, and the role of the state library and of federal legislation. Prerequisite: LIS 505 or consent of instructor.

**LIS 548  Library Buildings**  credit: 2 OR 4 hours.
Studies the library's physical plant in the light of changing concepts and patterns of library service; analyzes present-day library buildings (both new and remodeled), and their comparison with each other as well as with buildings of the past; examines the interrelationship of staff, collections, users, and physical plant; discussion supplemented by visits to new libraries and conference with their staffs. A two-day field trip is required.

**LIS 549  Economics of Info**  credit: 4 hours.
The various definitions of information in economic and social terms as discussed in library and information science as well as other literatures are related to government public policies and social policies. Issues such as information as a commodity and as a public good are explored. The impact of the economics of information and related public policies on libraries and information centers is discussed from a national and international perspective.

**LIS 556  Implement Info Stor and Retr**  credit: 4 hours.
Types of systems for storage and retrieval of documents and references; their characteristics, evaluation, factors affecting their performance, and the mathematical models on which their operations are based are covered. Primary focus is on modern computer-based systems and their implementation. Students will use programming tools to build demonstration systems and install retrieval packages as part of a case study. Concurrent or prior registration in LIS 456 is recommended. Prerequisite: LIS 452 or proficiency in any programming language and consent of instructor.

**LIS 577  Cataloging and Classif II**  credit: 4 hours.
More complex problems in making and evaluating the changing, modern library catalog; practical and administrative problems in cataloging serial publications, analytics, ephemeral materials, and microforms; deals with various nonprint media, rare books and manuscripts, foreign language materials, and materials in special subject areas. Prerequisite: LIS 507 or consent of instructor.

**LIS 578  Technical Services Functions**  credit: 4 hours.
Seminar on the principles, problems, trends, and issues of acquiring, identifying, recording, and conserving/preserving materials in all types of libraries and information centers; includes the special problems of serials management; emphasizes service aspects.

**LIS 581  Adm and Use Archival Materials**  credit: 4 hours.
Administration of archives and manuscript collections in various types of institutions. Theoretical principles and archival practices of appraisal, acquisition, accessioning, arrangement, description, preservation, and reference services. Topics will include: records management programs, collecting archives programs/special collections, legal and ethical issues, public programming and advocacy, and the impact of new information technologies for preservation and access. Lectures, discussion, internet demonstration, and field trips to the Special Collections Department and University Archives.

**LIS 582  Preserving Info Resources**  credit: 4 hours.
Covers the broad range of library preservation and conservation for book and nonbook materials relating these efforts to the total library environment; emphasizes how the preservation of collections affects collection management and development, technical services, access to materials and service to users.

**LIS 590  Advanced Problems in LIS**  credit: 2 TO 4 hours.
Variety of newly developed and special courses on selected problems in the four curriculum domains of Design and Evaluation of Information Systems and Services, Information Organization and Analysis, Management and Consulting for Information Systems and Services, and Access - People and Collections, offered as sections of LIS 590. May be repeated.

LIS 591  **Practicum**  credit: 2 hours.
Supervised field experience of professional-level duties in an approved library or information center. A maximum of 2 hours may be applied toward a degree program. Approved for S/U grading only. Prerequisite: Completion of 14 graduate hours of library and information science courses; submission of Practicum forms.

LIS 592  **Independent Study**  credit: 2 TO 4 hours.
Permits the intermediate or advanced student opportunity to undertake the study of a topic not otherwise offered in the curriculum or to pursue a topic beyond or in greater depth than is possible within the context of a regular course. May be repeated by M.S. students to a maximum of 4 graduate hours; CAS students, a maximum of 8 graduate hours; Ph.D. students, a maximum of 16 graduate hours. Prerequisite: Submission of "Request to Enroll in LIS 592" form.

LIS 593  **CAS Project**  credit: 0 TO 8 hours.
Individual study of a problem in library or information science; forms the culmination of the Certificate of Advanced Study program. May be repeated. Only eight hours will apply to the Certificate of Advanced Study. Approved for S/U grading only. Prerequisite: Admission to Certificate of Advanced Study program in library and information science; submission of "Request to Enroll in LIS 593 - CAS Project" form.

LIS 599  **Thesis Research**  credit: 0 TO 16 hours.
Individual study and research. M.S. candidates, 0 to 8 graduate hours. Doctoral candidates, 0 to 16 graduate hours. May be repeated. Approved for S/U grading only. MS students must submit a "Request to Enroll in LIS 599 - Master's Thesis" form.
Latina/Latino Studies

Director: Arlene Torres
Program Office: 510 East Chalmers, Champaign
Phone: 265-0370
www.lls.uiuc.edu

LLS 100 Intro Latina/Latino Studies credit: 3 hours.
Interdisciplinary introduction to the basis for a Latina/Latino ethnicity in the United States. Topics include immigration and acculturation experiences and their commonalities and differences, comparison of Latina/Latino experiences to those of other racial, ethnic and immigrant groups, and the potential for a pan-ethnic identity.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

LLS 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
May be repeated.

LLS 201 US Racial & Ethnic Politics credit: 3 hours.
Same as AFRO 201 and PS 201. See PS 201.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

LLS 220 Mexican & Latin Am Migration credit: 3 hours.
General overview of international migration to the United States, using Latin American migration to the U.S., especially the Midwest, as the focal point. Topics discussed include the history of international migration to the United States, the relationship between the history and contemporary context, the development of U.S. immigration policy, the incorporation of Latino immigrants in U.S. society, and immigrant and community responses to migration. Same as SOC 221. Prerequisite: LLS 100 or SOC 100.

LLS 227 Latina/Latinos in Contemp US credit: 3 hours.
Same as SOC 227. See SOC 227.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

LLS 240 The Chicano Experience credit: 3 hours.
Same as SPAN 240. See SPAN 240.

LLS 242 US Latina & Latino Culture credit: 3 hours.
Same as SPAN 242. See SPAN 242.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

LLS 246 Gender&Sexuality Latina/o Lit credit: 3 hours.
Same as SPAN 246. See SPAN 246.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

LLS 250 Latina/os on the Bronze Screen credit: 3 hours.
Critical, historical, and theoretical exploration of Latinos representations in U.S. film from the 1900s to the present. Examination of cinematic representations as well as the social, political, and cultural context in which those representations are produced. The focus is on Mexican American and Puerto Rican images, but Hollywood’s treatment of other Latinos communities and ethnic groups will be discussed. Students will be required to attend weekly movie screenings. Same as MS 250.

LLS 258 Muslims in America credit: 3 hours.
Same as AAS 258 and RLST 258. See AAS 258.
LLS 259  Latina/o Cultures  credit: 3 hours.  
Same as ANTH 259. See ANTH 259.

LLS 260  Graffiti and Murals  credit: 3 hours.  
Same as ARTH 260. See ARTH 260.

LLS 278  Mapping Latina/o Inequalities  credit: 3 hours.  
Explores contemporary structural forces that contribute to the concentration of Latinas/os in segregated neighborhoods, and the detrimental effects of housing inequality on Latina/o communities. Focuses on the influence of geographic context in creation and maintenance of racial inequalities as they affect urban, suburban, and small town locals. Further examines the role of space and place in the development and persistence of community identities. Prerequisite: A course in Latina/Latino Studies.

LLS 279  Mexican-American History  credit: 3 hours.  
Same as HIST 279. See HIST 279.

This course satisfies the General Education Criteria for a:  
UIUC: Hist&Philosoph Perspect  
UIUC: US Minority Culture(s)

LLS 280  Caribbean Latina/o Migration  credit: 3 hours.  
Same as HIST 280. See HIST 280.

This course satisfies the General Education Criteria for a:  
UIUC: Hist&Philosoph Perspect  
UIUC: US Minority Culture(s)

LLS 281  Constructing Race in America  credit: 3 hours.  
Same as AAS 281, AFRO 281, and HIST 281. See HIST 281.

This course satisfies the General Education Criteria for a:  
UIUC: Hist&Philosoph Perspect  
UIUC: US Minority Culture(s)

LLS 296  Topics Latina/o Studies  credit: 3 hours.  
Course examines specific topics in Latina/Latino Studies not addressed in regularly offered courses. Examples include theories of ethnic identity, historical foundations, cultural expression, and relevant topics in public policy studies of Latina/Latino communities. May be repeated in same or separate terms to a maximum of 6 hours.

LLS 301  19thC US Latina/o Lit-ACP  credit: 4 hours.  
Focuses on the fiction (historical novels and poetry) as well as the critical essays of the 1848 Mexican-American War and the 1898 Spanish-American War, the two key 19th century events that determined the status of the people of the Caribbean and Mexican descent in the United States. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:  
UIUC: Hist&Philosoph Perspect  
UIUC: US Minority Culture(s)

LLS 310  Race and Cultural Diversity  credit: 4 hours.  
Same as AAS 310, AFRO 310, and EPS 310. See EPS 310.

This course satisfies the General Education Criteria for a:  
UIUC: US Minority Culture(s)  
UIUC: Advanced Composition

LLS 316  Latina/Latino Politics  credit: 3 hours.  
Same as PS 316. See PS 316.

LLS 320  Gender & Latina/o Migration  credit: 3 hours.  
Study of the gendered social process of international immigration, focusing on Latin American migration to the United States. Established theories of migration, the history of international immigration to the U.S., and historical and contemporary Mexico, Caribbean and Central American migration flows will be discussed in great detail. Primary focus on how gender shapes the migration
experiences of immigrants and the gendered impact of migration on the economic, political, and social status of individuals. Same as SOC 321 and GWS 320. Prerequisite: LLS 100 or SOC 100.

LLS 359  Adv Topics in Latina/o US  credit: 3 hours.
Same as ANTH 359. See ANTH 359.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

LLS 360  Contemporary US Latina/o Lit  credit: 3 hours.
Focuses on the major U.S. Latina/Latino writers and texts and their depictions of the events that have shaped 20th- and 21st-Century U.S. Latina/Latino cultures.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

LLS 375  Latina/o Media in the US  credit: 3 hours.
Same as MS 375. See MS 375.

LLS 378  La Latina  credit: 3 hours.
Same as HIST 378. See HIST 378.

LLS 379  Latina/os and the City  credit: 3 hours.
Examination of the migration and settlement of Latina/o populations (Mexicans, Puerto Ricans, Cubans, Dominicans, and Central and South Americans) in U.S. cities. Focus on the historic, economic, social and political factors that influenced these migrations and the choices migrants made to come to the United States and to urban areas in particular. Study of the regional variation among Latina/o groups, and coalition building and collaborative ventures between Latina/os and other communities of color in urban areas. Same as HIST 379.

LLS 390  Independent Study  credit: 0 TO 3 hours.
Special topics not treated in regularly scheduled courses; designed especially for advanced Undergraduates. May be repeated in the same or subsequent terms as topics vary to a maximum of 6 hours. Approved for both letter and S/U grading. Prerequisite: One course in Latina/Latino Studies and consent of instructor.

LLS 392  Chicanas&Latinas: Self&Society  credit: 3 hours.
Explores the experiences of Chicanas and Latinas through the lens of contemporary sociological research. Topics to be discussed include: community formation and activism, Chicana/Latina feminisms, sexuality, religion, health, family, immigration, education, work, media, and artistic expression. Readings emphasize the link between the structural inequalities of society, and the day-to-day lived experiences of Chicana/Latinas. Same as GWS 392 and SOC 392. Prerequisite: Any 100, 200, or 300-level LLS, GWS, or SOC course.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

LLS 396  Adv Topics Latina/o Studies  credit: 3 hours.
Examines specific topics in Latina/Latino Studies not addressed in regularly offered courses. Examples include theories of ethnic identity, historical foundations, cultural expression, and relevant topics in public policy studies of Latina/Latino communities. May be repeated in the same or separate terms to a maximum of 6 hours.

LLS 410  Writing Latina/o Chicago  credit: 3 OR 4 hours.
Examination of novels, poetry, film and memoirs by Latinas and Latinos writing from and/or about Chicago. Through these texts, the course will simultaneously track a Chicago-based Latina/o literary history and analyze articulations of Latina/o everyday life and politics grounded in the city's distinct topographical and social contexts. Issues of migration, gentrification, segregation, youth culture, gender, sexuality, race, violence, poverty, class consciousness, and struggles for social justice will figure prominently in lectures and class discussions. 3 undergraduate hours. 4 graduate hours. Prerequisite: LLS 100.

LLS 412  Hispanics in the U.S.  credit: 3 OR 4 hours.
Same as SOCW 412. See SOCW 412.

LLS 422  US Latina and Latino Families  credit: 3 OR 4 hours.
Same as HDFS 422. See HDFS 422.

LLS 433  Found of Bilingual Educ  credit: 2 TO 4 hours.
Same as CI 433. See CI 433.
LLS 435  Commodifying Difference  credit: 3 OR 4 hours.
An interdisciplinary examination of how racial, ethnic and gender difference is negotiated through media and popular culture, and how racial, ethnic and gendered communities use cultural forms to express identity and difference. Among the theoretical questions explored are the politics of representation, ethnic/racial authenticity, cultural commodification and transnational popular culture. Some of the cultural forms examined are cultural festivals/parades, ethnic/race-based beauty pageants, cinematic and televisual texts and musical forms, such as Hip-Hop and Salsa. Same as AAS 435, AFRO 435, GWS 435, and MS 432. 3 undergraduate hours. 4 graduate hours. Prerequisite: Any combination of 6 hours from Latina/o Studies, Asian American Studies, Afro-American Studies, Gender and Women Studies or Media Studies; graduate standing, or consent of instructor.

LLS 438  Latina/o Social Movements  credit: 3 OR 4 hours.
Determinants, dynamics and consequences of Latina/o social movements and public actions in the U.S.. Theories and history of social movements, and globalization and the new immigration, and transportational community formation. Case studies include the UFW, La Raza Party, and mobilization of Latina/o communities to address specific local issues. Prerequisite: LLS 100 or advisor’s permission. 3 undergraduate hours. 4 graduate hours.

LLS 442  US Latina Lit and Iconography  credit: 3 OR 4 hours.
Systematically addresses contemporary Latina feminism, its contexts, and its origins through the study of influential female cultural icons from the 16th century to the present. This critical approach allows contemporary Latina feminism to construct historical and cultural narratives based on women's contributions to culture. Students will also learn how contemporary theoretical approaches Postcoloniality, Gender Studies, Nationalism, etc. influence the study of Latina identity. Same as GWS 445 and SPAN 442. 3 undergraduate hours. 4 graduate hours. Prerequisite: At least one previous course in U.S. Latina/Latino Studies or Gender and Women's Studies, or consent of instructor.

LLS 449  Issues in Latina/o Educ  credit: 2 TO 4 hours.
Same as CI 449. See CI 449.

LLS 465  Race, Sex, and Deviance  credit: 3 OR 4 hours.
Explores how racial stereotypes rely on sexual stereotypes by examining the intersections of ethnic studies, gender and women's studies, and queer studies. Interdisciplinary course that draws from critical legal studies, sociology, anthropology, literary criticism, and history. Same as AAS 465, AFRO 465, and GWS 465. 3 undergraduate hours. 4 graduate hours. Prerequisite: Any lower division course in LLS, AAS, AFRO, or GWS.

LLS 472  Border Latina, Latino Cultures  credit: 3 OR 4 hours.
Same as ANTH 472. See ANTH 472.

LLS 475  History of the American West  credit: 3 OR 4 hours.
Same as HIST 476. See HIST 476.

LLS 479  Race, Medicine, and Society  credit: 3 OR 4 hours.
The idea of race has historically been central to how Western cultures conceptalize and think about human difference. This course examines the historical significance of race through one domain of knowledge: medicine. Specifically, it will be concerned with "race" as a central category in the medical construction and management of individuals and populations. Case studies might focus on colonial medicine, race and public health, sexuality and reproduction, global health disparities, and genetics and genomics. Same as AAS 479 and ANTH 479. 3 undergraduate hours. 4 graduate hours. Prerequisite: LLS 100 or consent of instructor.

LLS 496  Seminar in Latina/o Studies  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. May be repeated up to a maximum of 6 undergraduate hours or 12 graduate hours.

LLS 517  Bilingual and ESL Assessment  credit: 4 hours.
Same as CI 517. See CI 517.

LLS 554  Social Ent in Diverse Society  credit: 4 hours.
Same as HCD 541 and SOCW 554. See SOCW 554.

LLS 561  Race and Cultural Critique  credit: 4 hours.
Same as AAS 561, AFRO 531, ANTH 565, and GWS 561. See AAS 561.

LLS 577  Perspectives in LLS  credit: 4 hours.
Provides an overview of scholarly work and research in the field of Latina/o Studies. Prerequisite: One undergraduate or graduate course in Latina/Latino Studies or consent of instructor.

LLS 590  Independent Study  credit: 1 TO 4 hours.
Independent study on special topics not treated in regularly scheduled courses. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours.

LLS 596  **Graduate Seminar in LLS**  credit: 4 hours.
Examination of specific topics in Latina/Latino Studies. Topics vary. May be repeated in the same or subsequent semesters to a maximum of 12 hours.

LLS 597  **Capstone Seminar in LLS**  credit: 4 hours.
Provides graduate students with an understanding in the latest Latina/Latino Studies scholarship. Students will research theoretical methods used in the discipline, and will be required to submit a research paper or engage in field research in LLS. Provides students with an understanding of the interdisciplinary nature of LLS. Prerequisite: Satisfaction of all other Grad Minor Requirements.
MATH 002  **Introductory Algebra**  credit: 3 hours.
Methods of elementary algebra, including simplification of algebraic expressions, solving linear and quadratic equations, equations of lines, systems of linear equations, and radicals. Enrollment is restricted. Credit may not be used toward graduation in the College of LAS. Prerequisite: Score on appropriate placement test, or consent of Mathematics Department.

MATH 012  **Algebra**  credit: 3 hours.
Rapid review of basic techniques of factoring, rational expressions, equations and inequalities; functions and graphs; exponential and logarithmic functions; systems of equations; matrices and determinants; polynomials; and the binomial theorem. Students who need both algebra and trigonometry should enroll in MATH 016. Credit is not given for both MATH 012 and MATH 016. Credit not applicable toward graduation in certain curricula. Prerequisite: 1.5 units of high school algebra; 1 unit of high school geometry.

MATH 014  **Trigonometry**  credit: 2 hours.
Studies degrees and radians, the trigonometric functions, identities and equations, inverse functions, oblique triangles and applications. Credit is not given for both MATH 014 and either MATH 016 or MATH 115. Prerequisite: 1.5 units of high school algebra; 1 unit of high school geometry.

MATH 016  **Algebra and Trigonometry**  credit: 5 hours.
Unified treatment of algebra and trigonometry. Credit is not given for both MATH 016 and either MATH 012 or MATH 014. Credit not applicable toward graduation in certain curricula. Prerequisite: 1.5 units of high school algebra; 1 unit of high school geometry.

MATH 103  **Theory of Arithmetic**  credit: 4 hours.
Analyses of the mathematical issues and methodology underlying elementary mathematics in grades K-5. Topics include sets, arithmetic algorithms, elementary number theory, rational and irrational numbers, measurement, and probability. There is an emphasis on problem solving. Priority registration will be given to students enrolled in teacher education programs leading to certification in elementary or childhood education. Prerequisite: MATH 012 or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

MATH 115  **Preparation for Calculus**  credit: 3 hours.
Reviews trigonometric, rational, exponential, and logarithmic functions; provides a full treatment of limits, definition of derivative, and an introduction to finding area under a curve. Intended for students who need preparation for MATH 220, either because they lack the content background or because they are not prepared for the rigor of a university calculus course. Credit is not given for both MATH 115 and either MATH 014 or MATH 016. Students may not receive credit for MATH 115 if MATH 115 is taken after receiving credit for MATH 220 or MATH 221. Prerequisite: MATH 012 and an adequate ALEKS score.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

MATH 117  **Elementary Mathematics**  credit: 4 hours.
Analyses of the mathematical issues and methodology underlying elementary mathematics in grades 6-8. Topics include the Real number system and field axioms, sequences and series, functions and math modeling with technology, Euclidean and non-Euclidean geometry, probability and statistics. Priority registration will be given to students enrolled in teacher education programs leading to certification in elementary education. Prerequisite: MATH 012 or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

MATH 119  **Ideas in Geometry**  credit: 3 hours.
General education course in mathematics, for students who do not have mathematics as a central part of their studies. The goal is to convey the spirit of mathematical thinking through topics chosen mainly from plane geometry. Prerequisite: Two units of high school algebra; one unit of high school geometry; or equivalent.

This course satisfies the General Education Criteria for a:
MATH 124  **Finite Mathematics**  credit: 3 hours.
Introduction to finite mathematics for students in the social sciences; introduces the student to the basic ideas of logic, set theory, probability, vectors and matrices, and Markov chains. Problems are selected from social sciences and business. Prerequisite: MATH 012 or an adequate ALEKS score.

This course satisfies the General Education Criteria for:
UIUC: Quant Reasoning I

MATH 125  **Elementary Linear Algebra**  credit: 3 hours.
Basic concepts and techniques of linear algebra; includes systems of linear equations, matrices, determinants, vectors in n-space, and eigenvectors, together with selected applications, such as Markov processes, linear programming, economic models, least squares, and population growth. Credit is not given for both MATH 125 and any of MATH 225, MATH 410, or MATH 415. Prerequisite: MATH 012 or an adequate ALEKS score.

MATH 161  **Statistics**  credit: 3 hours.
Same as STAT 100. See STAT 100.

This course satisfies the General Education Criteria for:
UIUC: Quant Reasoning I

MATH 181  **A Mathematical World**  credit: 3 hours.
Introduction to selected areas of mathematical sciences through application to modeling and solution of problems involving networks, circuits, trees, linear programming, random samples, regression, probability, inference, voting systems, game theory, symmetry and tilings, geometric growth, comparison of algorithms, codes and data management. Prerequisite: Three years of high school mathematics, including two years of algebra and one year of geometry.

This course satisfies the General Education Criteria for:
UIUC: Quant Reasoning I

MATH 198  **Freshman Seminar**  credit: 3 hours.
Guides the student in the study of selected topics not considered in standard courses. Prerequisite: Enrollment in the mathematics honors program; consent of department.

MATH 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

MATH 210  **Theory of Interest**  credit: 3 hours.
Study of compound interest and annuities; applications to problems in finance. Prerequisite: MATH 231 or equivalent.

This course satisfies the General Education Criteria for:
UIUC: Quant Reasoning II

MATH 213  **Basic Discrete Mathematics**  credit: 3 hours.
Beginning course on discrete mathematics, including sets and relations, functions, basic counting techniques, recurrence relations, graphs and trees, and matrix algebra; emphasis throughout is on algorithms and their efficacy. Credit is not given for both MATH 213 and CS 173. Prerequisite: MATH 220 or MATH 221, or equivalent.

This course satisfies the General Education Criteria for:
UIUC: Quant Reasoning II

MATH 220  **Calculus**  credit: 5 hours.
First course in calculus and analytic geometry; basic techniques of differentiation and integration with applications including curve sketching; antidifferentiation, the Riemann integral, fundamental theorem, exponential and trigonometric functions. Credit is not given for both MATH 220 and either MATH 221 or MATH 234. Prerequisite: MATH 016 or MATH 115; and an adequate ALEKS placement score.

This course satisfies the General Education Criteria for:
UIUC: Quant Reasoning II

MATH 221  **Calculus I**  credit: 4 hours.
First course in calculus and analytic geometry for students with some calculus background; basic techniques of differentiation and integration with applications including curve sketching; antidifferentiation, the Riemann integral, fundamental theorem, exponential and trigonometric functions. Credit is not given for both MATH 221 and either MATH 220 or MATH 234. Prerequisite: An adequate ALEKS placement score; and either one year of high school calculus or a minimum score of 2 on the AB Calculus AP exam.

This course satisfies the General Education Criteria for:

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IRIS: Quantitative Reasoning
MATH 225  **Introductory Matrix Theory**  credit: 2 hours.
Systems of linear equations, matrices and inverses, determinants, and a glimpse at vector spaces, eigenvalues and eigenvectors. Credit is not given for both MATH 225 and any of MATH 125, MATH 410, or MATH 415. Prerequisite: MATH 220 or MATH 221; or equivalent.

MATH 231  **Calculus II**  credit: 3 hours.
Second course in calculus and analytic geometry: techniques of integration, conic sections, polar coordinates, and infinite series. Credit is not given for both MATH 231 and MATH 230. Prerequisite: MATH 220 or MATH 221.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

MATH 234  **Calculus for Business I**  credit: 4 hours.
Introduction to the concept of functions and the basic ideas of the calculus. Credit is not given for both MATH 234 and either MATH 220 or MATH 221. Prerequisite: MATH 012 and an adequate ALEKS score.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

MATH 241  **Calculus III**  credit: 4 hours.
Third course in calculus and analytic geometry including vector analysis: Euclidean space, partial differentiation, multiple integrals, line integrals and surface integrals, the integral theorems of vector calculus. Credit is not given for both MATH 241 and any of MATH 244, MATH 292, or MATH 380. Prerequisite: MATH 231.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 249  **Honors Supplement**  credit: 1 hours.
Supplemental credit hour for honors courses with additional material or special projects. Prerequisite: Concurrent registration in a specially designated honors section and consent of department.

MATH 267  **Math Issues National Security**  credit: 3 hours.
Applications of mathematics to aspects of physical, biological, and social sciences that affect national security. Same as GLBL 267. Prerequisite: Completion of the Quantitative Reasoning I requirement or consent of instructor.

MATH 284  **Intro Differential Systems**  credit: 4 hours.
First order differential equations; mathematical models and numerical methods; linear systems and matrices; higher-order linear differential equations; eigenvalues and eigenvectors; linear systems of differential equations; Laplace transform methods. Credit is not given for both MATH 284 and either MATH 285 or MATH 286. Prerequisite: MATH 231 or equivalent.

MATH 285  **Intro Differential Equations**  credit: 3 hours.
Techniques and applications of ordinary differential equations, including Fourier series and boundary value problems, and an introduction to partial differential equations. Intended for engineering majors and others who require a working knowledge of differential equations. Credit is not given for both MATH 285 and any of MATH 284, MATH 286, MATH 441. Prerequisite: MATH 241.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 286  **Intro to Differential Eq Plus**  credit: 4 hours.
Techniques and applications of ordinary differential equations, including Fourier series and boundary value problems, linear systems of differential equations, and an introduction to partial differential equations. Covers all the MATH 285 plus linear systems. Intended for engineering majors and other who require a working knowledge of differential equations. Credit is not given for both MATH 286 and any of MATH 284, MATH 285, MATH 441. Prerequisite: MATH 241.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 290  **Symbolic Computation Lab**  credit: 1 hours.
Laboratory component to courses using a symbolic programming package. Prerequisite: Consent of department; concurrent registration in a designated section of a mathematics course with symbolic computation component. May be taken only once for credit.

MATH 292  **Vector Calculus Supplement**  credit: 2 hours.
Course in multivariable calculus. Topics include gradient, divergence, and curl; line and surface integrals; and the theorems of Green, Stokes, and Gauss. Intended for transfer students whose multivariable calculus course did not include the integral theorems of vector calculus. Credit is not given for both MATH 292 and MATH 241. Prerequisite: Consent of instructor.

**MATH 299**  **Topics in Mathematics**  credit: 1 TO 4 hours.
Topics course; see Class Schedule or department office for current topics. May be repeated in the same or subsequent semesters to a maximum of 8 hours. Prerequisite: MATH 220 or MATH 221; consent of instructor.

**MATH 347**  **Fundamental Mathematics**  credit: 3 hours.
Fundamental ideas used in many areas of mathematics. Topics will include: techniques of proof, mathematical induction, binomial coefficients, rational and irrational numbers, the least upper bound axiom for real numbers, and a rigorous treatment of convergence of sequences and series. This will be supplemented by the instructor from topics available in the various texts. Students will regularly write proofs emphasizing precise reasoning and clear exposition. Credit is not given for both MATH 347 and MATH 348. Prerequisite: MATH 231.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

**MATH 348**  **Fundamental Mathematics-ACP**  credit: 4 hours.
Course is identical to MATH 347 except for the additional writing component. Credit is not given for both MATH 348 and MATH 347. Prerequisite: MATH 231 and completion of the campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition
UIUC: Quant Reasoning II

**MATH 357**  **Numerical Methods I**  credit: 3 hours.
Same as CS 357. See CS 357.

**MATH 362**  **Probability with Engrg Applic**  credit: 3 hours.
Same as ECE 313. See ECE 313.

**MATH 370**  **Actuarial Problem Solving**  credit: 1 hours.
Methods and techniques of solving problems in actuarial mathematics for advanced students intending to enter the actuarial profession. Approved for S/U grading only. May be repeated in the same or subsequent semesters to a maximum of 4 hours. Prerequisite: Consent of instructor.

**MATH 380**  **Advanced Calculus**  credit: 3 hours.
Introductory study of vector calculus and functions of several variables; topics include directional derivatives; Jacobians; change of variables in multiple integrals; maxima and minima; line and surface integrals; theorems of Gauss, Green, and Stokes; infinite series; and uniform convergence. Credit is not given for both MATH 380 and MATH 241. Prerequisite: MATH 242.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

**MATH 390**  **Individual Study**  credit: 0 TO 3 hours.
Guided individual study of advanced topics not covered in other courses. May be repeated to a maximum of 8 hours. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

**MATH 402**  **Non Euclidean Geometry**  credit: 3 OR 4 hours.
Historical development of geometry; includes tacit assumptions made by Euclid; the discovery of non-Euclidean geometries; geometry as a mathematical structure; and an axiomatic development of plane geometry. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241; MATH 347 or MATH 348, or equivalent; or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

**MATH 403**  **Euclidean Geometry**  credit: 3 OR 4 hours.
Selected topics from geometry, including the nine-point circle, theorems of Ceva and Menelaus, regular figures, isometries in the plane, ordered and affine geometries, and the inversive plane. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241; MATH 347 or 348, or equivalent; or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II
MATH 405  **Teacher's Course**  credit: 3 OR 4 hours.
In-depth, advanced perspective look at selected topics covered in the secondary curriculum. Connects mathematics learned at the university level to content introduced at the secondary level. Intended for students who plan to seek a secondary certificate in mathematics teaching. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241; MATH 347 or MATH 348, or equivalent; or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 406  **History of Calculus**  credit: 3 OR 4 hours.
Examination of the historical origins and genesis of the concepts of the calculus; includes mathematical developments from the ancient Greeks to the eighteenth century. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241 or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 408  **Actuarial Statistics I**  credit: 4 hours.
Same as STAT 408. See STAT 408.

MATH 409  **Actuarial Statistics II**  credit: 4 hours.
Same as STAT 409. See STAT 409.

MATH 410  **Lin Algebra & Financial Apps**  credit: 3 OR 4 hours.
Emphasizes techniques of linear algebra and introductory and advanced applications to actuarial science, finance and economics. Topics include linear equations, matrix theory, vector spaces, linear transformations, eigenvalues and eigenvectors and inner product spaces. In addition, current research topics such as modeling, data mining, and generalized linear models are explored. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Credit is not given for both MATH 410 and MATH 125, MATH 225, or MATH 415. Prerequisite: MATH 241; MATH 210 or FIN 221; or consent of instructor.

MATH 412  **Graph Theory**  credit: 3 OR 4 hours.
Examines basic concepts and applications of graph theory, where graph refers to a set of vertices and edges that join some pairs of vertices; topics include subgraphs, connectivity, trees, cycles, vertex and edge coloring, planar graphs and their colorings. Draws applications from computer science, operations research, chemistry, the social sciences, and other branches of mathematics, but emphasis is placed on theoretical aspects of graphs. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 347 or MATH 348 or equivalent experience or CS 373.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 413  **Intro to Combinatorics**  credit: 3 OR 4 hours.
Permutations and combinations, generating functions, recurrence relations, inclusion and exclusion, Polya's theory of counting, and block designs. Same as CS 413. 3 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval of the instructor and completion of additional work of substance. Prerequisite: MATH 347 or MATH 348 or equivalent experience.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 414  **Mathematical Logic**  credit: 3 OR 4 hours.
Introduction to the formalization of mathematics and the study of axiomatic systems; expressive power of logical formulas; detailed treatment of propositional logical and predicate logic; compactness theorem and Godel completeness theorem, with applications to specific mathematical theories; algorithmic aspects of logical formulas. Proofs are emphasized in this course, which can serve as an introduction to abstract mathematics and rigorous proof; some ability to do mathematical reasoning required. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 347 or MATH 348 or equivalent experience.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 415  **Applied Linear Algebra**  credit: 3 OR 4 hours.
Introductory course emphasizing techniques of linear algebra with applications to engineering; topics include matrix operations, determinants, linear equations, vector spaces, linear transformations, eigenvalues, and eigenvectors, inner products and norms, orthogonality, equilibrium, and linear dynamical systems. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Credit is not given for both MATH 415 and any of MATH 125, MATH 225, or MATH 410. Prerequisite: MATH 241 or consent of instructor.
MATH 416  **Abstract Linear Algebra**  credit: 3 OR 4 hours.
Rigorous proof-oriented course in linear algebra. Topics include determinants, vector spaces over fields, linear transformations, inner product spaces, eigenvectors and eigenvalues, Hermitian matrices, Jordan Normal Form. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241 or consent of instructor; MATH 347 is recommended.

MATH 417  **Intro to Abstract Algebra**  credit: 3 OR 4 hours.
Prerequisite: Either MATH 416 or one of MATH 410, MATH 415 together with one of MATH 347, MATH 348, CS 373; or consent of instructor.

MATH 418  **Intro to Abstract Algebra II**  credit: 3 OR 4 hours.
Rings of quotients of an integral domain. Euclidean domains, principal ideal domains. Unique factorization in polynomial rings. Fields extensions, ruler and compass constructions. Finite fields with applications. Modules. Structure theorem for finitely generated modules over principal ideal domains. Application to finitely generated abelian groups and canonical forms of matrices. Introduction to error-correcting codes. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance.
Prerequisite: MATH 417 or consent of instructor.

MATH 423  **Differential Geometry**  credit: 3 OR 4 hours.
Applications of the calculus to the study of the shape and curvature of curves and surfaces; introduction to vector fields, differential forms on Euclidean spaces, and the method of moving frames for low-dimensional differential geometry. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 424  **Honors Real Analysis**  credit: 3 hours.
A rigorous treatment of basic real analysis via metric spaces. Metric space topics include continuity, compactness, completeness, connectedness and uniform convergence. Analysis topics include the theory of differentiation, Riemann-Darboux integration, sequences and series of functions, and interchange of limiting operations. As part of the honors sequence, this course will be rigorous and abstract. Approved for honors grading. 3 undergraduate hours. Prerequisite: An honors section of MATH 347 or an honors section of MATH 416, and consent of the department.

MATH 425  **Honors Advanced Analysis**  credit: 3 hours.
A theoretical treatment of differential and integral calculus in higher dimensions. Topics include inverse and implicit function theorems, submanifolds, the theorems of Green, Gauss and Stokes, differential forms, and applications. As part of the honors sequence, this course will be rigorous and abstract. Approved for honors grading. 3 undergraduate hours. Prerequisite: MATH 424 and either MATH 415 or MATH 416, and consent of the department.

MATH 426  **Honors Linear Algebra**  credit: 2 hours.
Matrix operations, vector spaces, linear transformations, bilinear forms and orthogonality. As part of the honors sequence, this course will be rigorous and abstract. Approved for honors grading. 2 undergraduate hours. Credit is not given for both 426 and any of: MATH 125, MATH 225 or MATH 415. Prerequisite: Consent of department.

MATH 427  **Honors Abstract Algebra**  credit: 3 hours.
Group theory, counting formulae, factorization, modules with applications to Abelian groups and linear operators. As part of the honors sequence, this course will be rigorous and abstract. Approved for honors grading. 3 undergraduate hours. Credit is not given for both MATH 427 and MATH 417. Prerequisite: Consent of the department is required. Prerequisite courses are either an honors section of MATH 416, or MATH 415 together with an honors section of MATH 347.

MATH 428  **Honors Topics in Mathematics**  credit: 3 hours.
A capstone course in the Mathematics Honors Sequences. Topics will vary. As part of the honors sequence, this course will be rigorous and abstract. Approved for honors grading. 3 undergraduate hours. May be repeated in the same or separate terms to a maximum of 12 hours. Prerequisite: Consent of the department.

MATH 432  **Set Theory and Topology**  credit: 3 OR 4 hours.
Informal set theory, cardinal and ordinal numbers, and the axiom of choice; topology of metric spaces and introduction to general topological spaces. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 347 or MATH 348 or consent of instructor.

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MATH 439</td>
<td>Philosophy of Mathematics</td>
<td>3 OR 4</td>
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<tr>
<td>MATH 441</td>
<td>Differential Equations</td>
<td>3 OR 4</td>
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<td>MATH 442</td>
<td>Intro Partial Diff Equations</td>
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<td>MATH 444</td>
<td>Elementary Real Analysis</td>
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<td>MATH 446</td>
<td>Applied Complex Variables</td>
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<td>MATH 447</td>
<td>Real Variables</td>
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<tr>
<td>MATH 450</td>
<td>Numerical Analysis</td>
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<tr>
<td>MATH 453</td>
<td>Elementary Theory of Numbers</td>
<td>3 OR 4</td>
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</table>

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II
and cryptography. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241 or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 458  Numerical Linear Algebra  credit: 3 OR 4 hours.
Same as CS 458 and CSE 412. See CS 458.

MATH 461  Probability Theory  credit: 3 OR 4 hours.
Introduction to mathematical probability; includes the calculus of probability, combinatorial analysis, random variables, expectation, distribution functions, moment-generating functions, and central limit theorem. Same as STAT 451. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Credit is not given for both MATH 461 and either MATH 408 or ECE 313. Prerequisite: MATH 241 or equivalent.

MATH 463  Statistics and Probability I  credit: 4 hours.
Same as STAT 400. See STAT 400.

MATH 464  Statistics and Probability II  credit: 3 OR 4 hours.
Same as STAT 410. See STAT 410.

MATH 465  Analysis of Variance  credit: 3 OR 4 hours.
Same as STAT 424. See STAT 424.

MATH 466  Topics in Applied Statistics  credit: 3 OR 4 hours.
Same as STAT 430. See STAT 430.

MATH 471  Actuarial Theory I  credit: 4 hours.
Distribution of the time-to-death random variable for a single life, and its implications for evaluations of insurance and annuity functions, net premiums, and reserves. Prerequisite: MATH 408 and MATH 210.

MATH 472  Actuarial Theory II  credit: 3 OR 4 hours.
Continuation of MATH 471. Emphasis is on multiple-life functions. 3 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval of the instructor and completion of additional work of substance. Prerequisite: MATH 471.

MATH 473  Algorithms  credit: 0 TO 4 hours.
Same as CS 473 and CSE 414. See CS 473.

MATH 475  Formal Models of Computation  credit: 3 OR 4 hours.
Same as CS 475. See CS 475.

MATH 476  Actuarial Risk Theory  credit: 3 OR 4 hours.
Mathematical analysis of the risk to an insurer due to variations in expected claim numbers and amounts; optimal insurance systems; the probability of ruin in the long run; reinsurance; dividend formulas. 3 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval of the instructor and completion of additional work of substance. Prerequisite: Credit or concurrent registration in STAT 409 or STAT 410.

MATH 477  Survival Analysis  credit: 3 hours.
The statistical process of analyzing survival data, particularly for insurance applications. Parametric, semiparametric and nonparametric methods; special attention to censoring and truncation. Testing adequacy of selected models. Prerequisite: MATH 409 or MATH 464; MATH 471 is recommended but not required.

MATH 478  Actuarial Modeling  credit: 3 OR 4 hours.
Considers the specification and evaluation of various types of actuarial models. Examines severity, frequency, and compound distributions useful in modeling the insurance loss process. Credibility theory is also discussed. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: MATH 408, MATH 461 or MATH 463; credit or concurrent registration in MATH 409 or MATH 464.

MATH 481  Vector and Tensor Analysis  credit: 3 OR 4 hours.
Vector spaces, transformation properties, covariant and contravariant tensors, and differential geometry of surfaces; applications to relativity theory. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241 or MATH 380, or equivalent; or consent of instructor.

**MATH 482  Linear Programming**  credit: 3 OR 4 hours.

Rigorous introduction to a wide range of topics in optimization, including a thorough treatment of basic ideas of linear programming, with additional topics drawn from numerical considerations, linear complementarity, integer programming and networks, polyhedral methods. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 410, MATH 415, or MATH 416.

**MATH 484  Nonlinear Programming**  credit: 3 OR 4 hours.

Iterative and analytical solutions of constrained and unconstrained problems of optimization; gradient and conjugate gradient solution methods; Newton's method, Lagrange multipliers, duality and the Kuhn-Tucker theorem; and quadratic, convex, and geometric programming. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241; MATH 347 or MATH 348; or equivalent; MATH 415 or equivalent; or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

**MATH 487  Advanced Engineering Math**  credit: 3 OR 4 hours.

Complex linear algebra, inner product spaces, Fourier transforms and analysis of boundary value problems, Sturm-Liouville theory. Same as ECE 493. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One of MATH 284, MATH 285, MATH 286, MATH 441.

**MATH 488  Math Methods In Engineering**  credit: 3 OR 4 hours.

Matrices, determinants, bounds and approximations to eigenvalues, introduction to linear operator theory and inner product spaces, orthogonal expansions, and Fourier transforms. 4 hours of credit requires approval of the instructor and department with completion of additional work of substance. Prerequisite: MATH 241 or MATH 380, or equivalent.

**MATH 489  Differential Equations II**  credit: 3 OR 4 hours.

Treats systems of linear differential equations (including the necessary matrix theory), and then concentrates on nonlinear systems, studying their dynamics by means of phase plane analysis and other methods. Provides applications of nonlinear systems to physics and biology. 4 hours of credit requires approval of the instructor and completion of additional work of substance. Prerequisite: One of MATH 284, MATH 285, MATH 286, MATH 441.

**MATH 490  Advanced Topics in Mathematics**  credit: 1 TO 4 hours.

Deals with selected topics and applications of mathematics; see Class Schedule or department office for current topics. May be repeated with approval. Prerequisite: Consent of instructor.

**MATH 491  Logic Design**  credit: 3 hours.

Same as CS 462 and ECE 462. See ECE 462.

**MATH 493  Statistical Computing**  credit: 3 OR 4 hours.

Same as STAT 428. See STAT 428.

**MATH 494  Time Series Analysis**  credit: 3 OR 4 hours.

Same as STAT 429. See STAT 429.

**MATH 496  Honors Seminar**  credit: 3 hours.

Careful study of a selected area of mathematics, carried out either deductively from axioms or inductively through problems; subject matter varies with instructor. 3 undergraduate hours. No graduate credit. May be repeated to a maximum of 6 hours. Prerequisite: Consent of Mathematics Honors Committee.

**MATH 499  Introduction Graduate Research**  credit: 1 hours.

Seminar is required of all first-year graduate students in Mathematics. It provides a general introduction to the courses and research work in all of the areas of mathematics that are represented at the University of Illinois at Urbana-Champaign. Approved for S/U grading only. May be repeated to a maximum of 2 hours. Prerequisite: Graduate standing or consent of instructor.

**MATH 500  Abstract Algebra I**  credit: 4 hours.

Isomorphism theorems for groups, centers of p-groups, simplicity of A_n, Jordan-Holder Theorem; Commutative Rings and Fields, PIDs, UFDs, Gauss's Lemma, splitting fields, Hilbert Basis Theorem, Zariski topology; Modules over Commutative Rings, structure theorem for finitely generated modules over PIDs, with applications to abelian groups and canonical forms for matrices; Zorn's lemma and applications, existence and uniqueness of algebraic closures; Categories and Functors, universal mapping properties, natural transformations, limits and colimits. Prerequisite: MATH 417 and MATH 418.
MATH 501  Abstract Algebra II  credit: 4 hours.
Solvable groups, finite p-groups, semidirect products, Sylow's theorem; Galois Theory, transcendental extensions, separable and normal extensions, finite Galois groups, Theorem of the Primitive Element, Fundamental Theorem of Galois Theory, symmetric Function Theorem, examples, cyclotomic, cyclic and radical extensions; Modules over Arbitrary Rings, exact sequences, projective and injective modules, Tensor products, Matrix rings, Schur's lemma, Wedderburn's theorem on semisimple rings, group algebras, Maschke's theorem; Algebraic Geometry, varieties, morphisms of varieties, Noetherian properties, Irreducible varieties and prime ideals. Prerequisite: MATH 500.

MATH 502  Commutative Algebra  credit: 4 hours.
Commutative rings and modules, prime ideals, localization, noetherian rings, primary decomposition, integral extensions and Noether normalization, the Nullstellensatz, dimension, flatness, Hensel's lemma, graded rings, Hilbert polynomial, valuations, regular rings, singularities, unique factorization, homological dimension, depth, completion. Possible further topics: smooth and etale extensions, ramification, Cohen-Macaulay modules, complete intersections. Prerequisite: MATH 501 or consent of instructor.

MATH 503  Group Theory  credit: 4 hours.
Structure of groups, derived groups, nilpotence and solvability, and extensions and products. Prerequisite: MATH 501 or equivalent.

MATH 504  Non-commutative Rings  credit: 4 hours.
Structure of Artinian rings, Morita theory, radicals, Brauer groups, finiteness conditions, and other topics at the choice of the instructor. Prerequisite: MATH 501 or consent of instructor.

MATH 505  Homological Algebra  credit: 4 hours.
Definition and properties of the functors Ext and Tor; projective, injective, and flat modules; group extensions; dimensions of rings, and Hilbert theorem on syzygies. Prerequisite: MATH 501 or equivalent.

MATH 506  Group Representation Theory  credit: 4 hours.
Representation of groups by linear transformations, group algebras, character theory, and modular representations. Prerequisite: MATH 501 or equivalent.

MATH 510  Riemann Surf & Algebraic Curv  credit: 4 hours.
An introduction to Riemann Surfaces from both the algebraic and function-theoretic points of view. Topics include projective algebraic curves, differential forms, integration, divisors of poles and zeroes, linear systems, the Riemann-Roch theorem, Serre duality, and applications. Prerequisite: MATH 500 and MATH 542.

MATH 511  Algebraic Geometry  credit: 4 hours.
Properties of affine and projective varieties defined over algebraically closed fields; rational mappings, birational geometry and divisors, especially on curves and surfaces; introduction to the language of schemes; and Riemann-Roch theorem for curves. Prerequisite: MATH 501.

MATH 518  Differentiable Manifolds I  credit: 4 hours.
Definitions and properties of differentiable manifolds and maps, (co)tangent bundles, vector fields and flows, Frobenius theorem, differential forms, exterior derivatives, integration and Stokes' theorem, DeRham cohomology, inverse function theorem, Sard's theorem, transversality and intersection theory. Prerequisite: MATH 423 or MATH 481, or consent of instructor.

MATH 519  Differentiable Manifolds II  credit: 4 hours.
Vector bundles, principal bundles, connections, parallel transport, curvature, Chern-Weyl theory, Hodge-DeRham theory. Other topics may include Riemannian geometry, symplectic geometry, spin geometry, and harmonic maps. Prerequisite: MATH 518 or consent of instructor.

MATH 521  Riemannian Geometry  credit: 4 hours.
Local and global properties of Riemannian manifolds. Prerequisite: MATH 520.

MATH 522  Lie Groups and Lie Algebras I  credit: 4 hours.
A general introduction to Lie groups and algebras and their representation theory. Theory of finite group representations, Lie groups as matrix groups, and as differentiable manifolds, Lie algebras as tangent spaces and as abstract objects, and their representations. Examples of the classical groups. May be repeated up to 8 hours. Prerequisite: Undergraduate linear algebra, abstract algebra, point set topology, differentiation on manifolds.

MATH 523  Lie Groups and Lie Algebras II  credit: 4 hours.
The classification of simple Lie algebras, classification of highest weight representations, Weyl group actions, Lie group representations, homogeneous spaces, Clifford algebras, Spin groups and further applications. May be repeated to a maximum of 8 hours. Prerequisite: MATH 522.
MATH 524  **Linear Analysis on Manifolds**  credit: 4 hours.
Study of topological invariants of differentiable and complex manifolds. Prerequisite: MATH 520 and MATH 526, or consent of instructor.

MATH 525  **Topology**  credit: 4 hours.
Winding numbers, singular and de Rham homology and cohomology in dimension zero and one, fixed point theorems, Jordan curve theorem, covering spaces, fundamental groups, classification of surfaces, van Kampen Theorem, singular homology, Eilenberg-Steenrod axioms, homology groups of surfaces. Prerequisite: MATH 417 and MATH 448 or consent of instructor.

MATH 526  **Algebraic Topology**  credit: 4 hours.
CW-complexes, relative homeomorphism theorem, cellular homology, cohomology, Kunneth theorem, Eilenberg-Zilber theorem, cup products, Poincare duality, examples. Prerequisite: MATH 525, MATH 500; or consent of instructor. MATH 501 is recommended but not required.

MATH 527  **Homotopy Theory**  credit: 4 hours.
Homotopy groups, fibrations and cofibrations, Hurewicz theorem, obstruction theory, Whitehead theorem and additional topics perhaps drawn from Postnikov towers, Freudenthal suspension theorem, Blakers-Massey theorem, spectra. Prerequisite: MATH 526. MATH 501 is recommended but not required.

MATH 530  **Algebraic Number Theory**  credit: 4 hours.
Further development of the theory of fields covering topics from valuation theory, ideal theory, units in algebraic number fields, ramification, function fields, and local class field theory. Prerequisite: MATH 500 or equivalent.

MATH 531  **Analytic Theory of Numbers I**  credit: 4 hours.
Problems in number theory treated by methods of analysis; arithmetic functions, Dirichlet series, Riemann zeta function, L-functions, Dirichlet's theorem on primes in progressions, the prime number theorem. Prerequisite: MATH 448 and either MATH 417 or MATH 453.

MATH 532  **Analytic Theory of Numbers II**  credit: 4 hours.
Development of themes from MATH 531 and further topics chosen from additive number theory, asymptotic properties of multiplicative functions, circle method, diophantine approximation, lattice point problems, metric theory, modular forms, sieve theory. May be repeated. Prerequisite: MATH 531.

MATH 533  **Fiber Spaces and Char Classes**  credit: 4 hours.
Continuation of MATH 527. Study of fiber bundles and their associated characteristic classes; applications to geometric problems. Prerequisite: MATH 527.

MATH 535  **General Topology**  credit: 4 hours.
Study of topological spaces and maps, including Cartesian products, identifications, connectedness, compactness, uniform spaces, and function spaces. Prerequisite: Consent of instructor.

MATH 540  **Real Analysis I**  credit: 4 hours.
Lebesgue measure on the real line; integration and differentiation of real valued functions of a real variable; and additional topics at discretion of instructor. Prerequisite: MATH 447 or equivalent.

MATH 541  **Real Analysis II**  credit: 4 hours.
Abstract measure theory; integration on general measure spaces; and introduction to functional analysis. Prerequisite: MATH 540.

MATH 542  **Complex Variables I**  credit: 4 hours.
Topics include the Cauchy theory, harmonic functions, entire and meromorphic functions, and the Riemann mapping theorem. Prerequisite: MATH 446 and MATH 447, or MATH 448.

MATH 543  **Complex Variables II**  credit: 4 hours.
Continuation of MATH 542. Topics include subharmonic functions, Nevanlinna theory, analytic continuation and Riemann surfaces, and univalent functions. Prerequisite: MATH 542.

MATH 545  **Harmonic Analysis**  credit: 4 hours.
Harmonic analysis on the circle, the line, and the integers, i.e., Fourier series and transforms; locally compact Abelian groups; convergence and summability; conjugate functions; Hardy spaces; uniqueness; Tauberian theorems; almost-periodic functions; commutative Banach algebras. Prerequisite: MATH 448 and MATH 541; knowledge of Banach spaces.

MATH 546  **Hilbert Spaces**  credit: 4 hours.
Geometrical properties of Hilbert spaces; linear operators; and the spectral theory for self adjoint and related operators. Prerequisite: MATH 541.

MATH 550  Ordinary Diff Equations  credit: 4 hours.
Existence, uniqueness, and continuation of solutions; topics selected from the following: the theory of linear differential operators, Sturm-Liouville theory, stability theory, and qualitative theory of differential equations. Prerequisite: MATH 447; a first course in ordinary differential equations.

MATH 551  Dynamical Systems Theory  credit: 4 hours.
Course is an introduction to the study of dynamical systems. Students who intend to do research in nonlinear dynamics are encouraged to take this course. Specific topics will be chosen to illustrate the theory and use of techniques from global analysis and nonlinear dynamics such as (1) discrete dynamical systems, (2) global theory of ordinary differential equations, (3) Hamiltonian systems, (4) KAM theory, (5) bifurcation and stability, (6) Hopf index theory of vector fields, (7) Morse theory of gradient vector fields, (8) Lyapunov theory, (9) infinite dimensional dynamical systems, (10) structural stability. Prerequisite: Consent of instructor.

MATH 552  Numerical Methods for PDEs  credit: 4 hours.
Same as CS 555 and CSE 510. See CS 555.

MATH 553  Partial Differential Equations  credit: 4 hours.
Basic introduction to the study of partial differential equations; topics include: the Cauchy problem, power-series methods, characteristics, classification, canonical forms, well-posed problems. Riemann's method for hyperbolic equations, the Goursat problem, the wave equation, Sturm-Liouville problems and separation of variables, Fourier series, the heat equation, integral transforms, Laplace's equation, harmonic functions, potential theory, the Dirichlet and Neumann problems, and Green's functions. Prerequisite: Consent of instructor.

MATH 554  Linear Anal & Part Diff Eq  credit: 4 hours.
Course will provide students with the basic background in linear analysis associated with partial differential equations. The specific topics chosen will be largely up to the instructor, but will cover such areas as linear partial differential operators, distribution theory and test functions, Fourier transforms, Sobolev spaces, pseudodifferential operators, microlocal analysis, and applications of the above topics. Prerequisite: MATH 447, MATH 489 or consent of instructor.

MATH 555  Nonlinear Anal & Part Diff Eq  credit: 4 hours.
Course will provide students with the basic background in nonlinear analysis associated with partial differential equations. The specific topics chosen will be largely up to the instructor, but will cover such areas as existence and uniqueness techniques, nonexistence and finite time blow-up results, hyperbolic conservation laws, weak solutions, stability theory, nonlinear elliptic theory, regularity theory. Prerequisite: MATH 554 or consent of instructor.

MATH 556  Methods of Math Physics I  credit: 4 hours.
Course covers several basic mathematical methods of wide use in physics and engineering. Topics will be selected from the following: calculus of variations, Sturm-Liouville theory and eigenvalue problems, Green's functions and generalized functions, Hilbert space techniques. Prerequisite: Advanced Calculus.

MATH 557  Methods of Math Physics II  credit: 4 hours.
Course covers several basic mathematical methods of wide use in physics and engineering. Topics will be selected from the following: integral equations, spectral theory and Hilbert spaces, inverse spectral theory, soliton and waterwave theory, asymptotic methods. Prerequisite: MATH 556 or consent of instructor.

MATH 559  Asymptotic Methods  credit: 4 hours.
Same as NPRE 559, PHYS 522, and TAM 549. See TAM 549.

MATH 561  Theory of Probability I  credit: 4 hours.
Mathematical foundations of probability and stochastic processes; probability measures, random variables, distribution functions, convergence theory, the Central Limit Theorem, conditional expectation, and martingale theory. Same as STAT 551. Prerequisite: MATH 541 or consent of instructor.

MATH 562  Theory of Probability II  credit: 4 hours.
Continuation of MATH 561.Same as STAT 552. Prerequisite: MATH 561.

MATH 564  Applied Stochastic Processes  credit: 4 hours.
Introduction to topics such as spectral analysis, filtering theory, and prediction theory of stationary processes; Markov chains and Markov processes. Same as STAT 555. Prerequisite: MATH 446 and MATH 447.

MATH 567  Topics in Actuarial Theory I  credit: 4 hours.
Selected topics in advanced actuarial science. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.

MATH 568  **Topics in Actuarial Theory II**  credit: 4 hours.
Topics in mathematical theory of actuarial science beyond basic life contingencies, such as graduation of mortality tables, survival models, mathematics of demography. See Class Schedule or department office for current topics. A paper will generally be required. May be repeated to a maximum of 16 hours. Prerequisite: STAT 409 or STAT 410 or equivalent; credit or concurrent registration in MATH 471.

MATH 570  **Mathematical Logic**  credit: 4 hours.
Development of first order predicate logic; completeness theorem; formalized number theory and the Godel incompleteness theorem. Prerequisite: MATH 417 or consent of instructor.

MATH 571  **Model Theory**  credit: 4 hours.
Techniques for constructing models, including compactness and Lowenheim-Skolem theorems, unions of elementary chains, and omitting types construction; categorical theories; ultraproducts; saturated models; quantifier elimination; applications to algebraically closed fields, real closed fields, and other fundamental structures of mathematics. Prerequisite: MATH 570 or consent of instructor.

MATH 573  **Recursive Function Theory**  credit: 4 hours.
Various characterizations of the class of recursive (i.e., computable) functions; the Church-Turing thesis; unsolvability of the halting problem; the recursion theorem and the enumeration theorem; relative computability, the jump operation, and the arithmetical hierarchy; recursively enumerable sets; degrees of unsolvability; and the priority method. Prerequisite: MATH 570 or consent of instructor.

MATH 574  **Set Theory**  credit: 4 hours.
Zermelo-Fraenkel axiomatic set theory; basic concepts in set theory such as ordinal, cardinal, rank, and definition by transfinite recursion; Godel's constructible universe; introduction to forcing; Boolean valued universes; large cardinals; consistency and independence of the continuum hypothesis and the axiom of choice. Prerequisite: MATH 570 or consent of instructor.

MATH 578  **Computational Complexity**  credit: 4 hours.
Same as CS 579 and ECE 579. See CS 579.

MATH 579  **Coding Theory**  credit: 4 hours.
Same as CS 577 and ECE 556. See ECE 556.

MATH 580  **Combinatorial Mathematics**  credit: 4 hours.
Fundamental results on core topics of combinatorial mathematics: classical enumeration, basic graph theory, extremal problems on finite sets, probabilistic methods, design theory, discrete optimization. Same as CS 571. Prerequisite: Consent of instructor.

MATH 581  **Extremal Graph Theory**  credit: 4 hours.
Extremal problems and parameters for graphs. Distance and connectivity, matching and factors, vertex and edge colorings, perfect and imperfect graphs, intersection classes and intersection parameters, Turan's theorem, graph Ramsey theory, graph decomposition and other extremal problems. Same as CS 572. Prerequisite: MATH 580 or consent of instructor.

MATH 582  **Structure of Graphs**  credit: 4 hours.
Structure of graphs and properties of special classes of graphs. Degree sequences and reconstruction, structure of k-connected graphs, Hamiltonian cycles and circumference, planar graphs and their properties, graph minors, cycle coverings, matroidal and algebraic aspects of graphs. Prerequisite: MATH 580 or consent of instructor.

MATH 583  **Partial Orders and Comb Optim**  credit: 4 hours.
Combinatorial aspects of partially ordered sets and their relation to optimization problems. Structure of posets and lattices, Dilworth's theorem and generalizations, linear extensions and sorting, dimension of posets, order ideals, extremal set theory, integer programming and minmax relations, matroids and their applications. Prerequisite: MATH 580 or consent of instructor.

MATH 584  **Methods of Combinatorics**  credit: 4 hours.
Combinatorial methods and other mathematical methods for combinatorial problems. Enumeration by bijections and generating functions, probabilistic methods for existence proofs and asymptotic analysis, randomized algorithms, Ramsey's theorem and related topics, combinatorial designs and their applications, geometric problems and methods. Same as CS 575. Prerequisite: MATH 580 or consent of instructor.

MATH 587  **Optimiz by Vector Space Methods**  credit: 4 hours.
Same as ECE 580. See ECE 580.

MATH 588  **Optimization in Networks**  credit: 4 hours.
Theory and methods for optimization over directed graphs; paths, cuts, flows, and potentials; matchings; PERT and CPM; max flow, min path, out-of-kilter, Hungarian, and other algorithms; nonlinear cost functionals; painting theory; and existence and duality. Prerequisite: MATH 241.

MATH 589  **Conjugate Duality and Optim**  credit: 4 hours.
Convex analysis for constrained extremum problems; convex sets, cones, and functions; separation; Fenchel transform; duality correspondences; differential theory; nonlinear programming; sensitivity; and perturbational duality for primal, dual, and Lagrangian problems. Prerequisite: MATH 415 and MATH 447, or consent of instructor.

MATH 595  **Advanced Topics in Math**  credit: 1 TO 4 hours.
May be repeated in the same or separate semesters. Prerequisite: Consent of instructor.

MATH 597  **Reading Course**  credit: 1 TO 8 hours.
Approved for both letter and S/U grading. May be repeated in the same or separate terms to a maximum of 8 hours. Prerequisite: Consent of instructor.

MATH 598  **Literature Seminar in Math**  credit: 0 TO 4 hours.
Seminar on topics of current interest in mathematics. Students present seminars and discussions on various topics. See Class Schedule for current topics. Recommended for all Mathematics students. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

MATH 599  **Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only. Prerequisite: Consent of instructor.
MBA 500  **Issues in Business**  credit: 0 hours.
MBA students are faced with a wide variety of issues in the work place. This course will introduce and encourage discussions related to careers transitions, leadership, ethics, and uses of technology in the work place. Guest lecturers and experts in their field will discuss different approaches to these issues and give students the opportunity to discuss strategies and practice skills that will prepare them for the business environment. Approved for S/U grading only. Prerequisite: Co-requisite MBA 501 and MBA 502.

MBA 501  **Foundations of Business I**  credit: 10 hours.
This course focuses on understanding the business formation process and how to prepare a business plan. Specific learning objectives include: planning and measurement of firm resources; the economic theory of the firm; decision making under uncertainty; understanding customer choice; financial management; oral presentation; and computer skills. Students who receive credit for MBA 501 may not receive credit for the following courses: ACCY 501, BADM 520, BADM 544, or BADM 572, or ECON 522. Prerequisite: Admission to the Master of Business Administration program.

MBA 502  **Foundations of Business II**  credit: 10 hours.
Helps students understand how to design and manage internal processes to achieve a firm's objectives. Specific learning objectives include: how managers internally allocate tasks; authority and resources to achieve a firm's objectives; how to design and manage the process of effectively producing products and services; how to measure costs and performance of business processes; how to understand and analyze institutions and programs of modern marketing as well as communicate marketing decisions and how to manage capital resources within a firm. Students will also develop written communication skills. Students who receive credit for MBA 502 may not receive credit for the following courses: ACCY 503, BADM 509, OR BADM 567, or FIN 520. Prerequisite: MBA 501.

MBA 503  **Prin & Proc of Management I**  credit: 6 hours.
Course presents information and material on how organizations interact and operate in a changing environment. Specific topics include: human resource management, organizational structures, strategic decision-making, management of technology, and technological developments. Students practice business written and oral communications skills. Students learn how to identify and manage key business resources. Specific themes focus on how managers effectively manage the human component in organizations, how to manage technology, and how to think about and respond to strategic issues. Students who receive credit for MBA 503 may not receive credit for BADM 543. Prerequisite: MBA 501 and MBA 502.

MBA 504  **Change, Ethics, Strat & Risk**  credit: 2 hours.
The three titled sections are specified here: Section 1. LEC, Leadership Ethics and Change: An inquiry into leadership, ethics, and change. It explores the nature of organizational leadership and discusses its relationship to ethics. Section 2. GS, Global Strategy: Teaches the fundamental economic, financial, and political factors affecting the international expansion of the firm. Section 3. DRA, Decision Risk Analysis: Introduces students to the formal analysis of managerial decision making problems that arise under conditions of uncertainty. While the analyses will be, of necessity, highly quantitative, the emphasis will be on the problem definition, identification of the appropriate tools for analysis, and on the interpretations of the solution. Concurrent registration in all three sections is required for a maximum of 6 hours. Prerequisite: MBA 501, MBA 502, and MBA 503.

MBA 505  **Topics in Management**  credit: 2 TO 8 hours.
Course presents topics important to the study of business management. Examples of topics include: international business; strategic thinking, incentives, and information; operations management; financial reporting, financial institutions; information systems. May be repeated to a maximum of 8 hours. Students may register in more than one section per term. Prerequisite: MBA 502.

MBA 520  **Corporate and Global Strategy**  credit: 4 hours.
Focuses on key issues in formulating and implementing corporate strategies with an emphasis on the international operations of firms. Issues are approached from the orientation of the general manager, whose job is to diagnose what is critical in complex business situations and find realistic solutions to strategic and organizational problems. Designed to integrate various functional areas and provide a "total business" perspective on issues pertaining to corporate and international strategy. Builds on learning experiences in previous modules, and acts as an integrative capstone module. Prerequisite: Completion of the first year of the Master of Business Administration Program, including MBA 501, MBA 502, MBA 503, MBA 504, and MBA 505.

MBA 530  **Internship**  credit: 0 hours.
May not be repeated for credit. Approved for S/U grading only. Prerequisite: Completion of first year of Master of Business Administration program.

**MBA 531  Special Projects  credit: 1 TO 4 hours.**

Individual projects selected by the student in consultation with a faculty member and approved by the executive officer of the program. Approved for letter and S/U grading. May be repeated in the same or subsequent terms to a maximum of 12 hours. Prerequisite: Completion of first year of Master of Business Administration program.
MCB 100  **Introductory Microbiology**  credit: 3 hours.
Introduction to the principal activities and properties of microorganisms, including bacteria, yeasts, molds, and viruses; consideration of the role of natural processes, such as photosynthesis; and man's use and control of microorganisms in the production of antibodies and vaccines in industrial fermentations, in sanitation and public health, and in agriculture. Credit is not given for both MCB 100 and MCB 300. Prerequisite: There are no prerequisites for MCB 100, but some chemistry is recommended.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

MCB 101  **Intro Microbiology Laboratory**  credit: 2 hours.
Laboratory introduction to the techniques employed in the investigation of microbial activities and properties; experiments designed to familiarize the student with the handling, identification, and characterization of microorganisms and their activities, particularly those of interest to man. Credit is not given for both MCB 101 and MCB 301. Prerequisite: Credit or concurrent registration in MCB 100.

MCB 103  **Intro to Human Physiology**  credit: 3 hours.
Survey of the human body functions and dysfunctions and their underlying molecular, cellular and integrative mechanisms. The laboratory portion of the course is offered under MCB 104. Prerequisite: High School chemistry and/or basic biology strongly recommended.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

MCB 104  **Intro to Human Physiology Lab**  credit: 1 hours.
Laboratory course to accompany MCB 103. Includes weekly 3-hour human and general physiology laboratory exercises. Enrollment restricted to students in majors REQUIRING a lab course in human physiology. Prerequisite: Concurrent enrollment in MCB 103.

MCB 150  **Molec & Cellular Basis of Life**  credit: 4 hours.
Introductory course focusing on the basic structure, metabolic, and molecular processes (including membranes, energy metabolism, genes) common to all cells. Emphasis on unique properties that differentiate the major sub-groups of organisms (Archaea, Bacteria, plants, and animals), and will discuss how cells are integrated into tissues and organs in multicellular organisms.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

MCB 151  **Molec & Cellular Laboratory**  credit: 1 hours.
Introductory laboratory course focusing on basic techniques in molecular and cellular biology. Students majoring in Molecular and Cellular Biology, or Integrative Biology may not receive credit for MCB 151. Prerequisite: Concurrent enrollment in MCB 150.

MCB 180  **Human Reproduction & Society**  credit: 3 hours.
Lectures and discussions on topics in human reproduction where technological and clinical advances are having economic, social, and ethical consequences.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

MCB 195  **Intro to Laboratory Research**  credit: 2 hours.
Introduction to theory and practice of research, emphasizing laboratory-based studies in the life sciences. Survey of topics such as problem solving, trends in research, approaches to scientific inquiry, the laboratory environment, ethics and integrity, data analysis, literature searches, laboratory safety and approaches to the study of primary literature conducted via lectures and discussions. overview of representative MCB research programs furnished by guest faculty presenters. Discussion of the relevance of research to various educational and career goals and instruction in the process of developing a MCB 290 research experience. Prerequisite: Course is designed to be taken prior to, or concurrently with MCB 290.

MCB 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated to a maximum of 10 hours.

**MCB 240  **Physiology credit: 3 hours.
Study of physiological systems in humans and other animals emphasizing cellular and molecular aspects of function in differentiated cells and tissues (e.g. nerve and muscle). Systems include cardiovascular, respiratory, digestive, renal, blood, immune, reproductive, nervous and endocrine. Quantitative approaches will be stressed including those used in metabolic physiology and bioenergetics. Functional adaptations in specific animal species will be studied as well as abnormal function in the disease state when relevant to understanding of normal function. Prerequisite: MCB 150 or consent of instructor.

**MCB 250  **Molecular Genetics credit: 3 hours.
Genetic variation, gene organization, gene expression, and gene regulation in Archaea, Bacteria, and Eukarya. Prerequisite: MCB 150 or equivalent, or consent of instructor.

**MCB 251  **Exp Techniqs in Molecular Biol credit: 2 hours.
Laboratory course emphasizing a range of molecular biology questions, and the experimental approaches and methodologies needed to answer these questions. Lectures will accompany labs to explain theoretical background and experimental rationale. Students may not receive credit for both MCB 251 and MCB 151. Prerequisite: Concurrent or prior enrollment in MCB 250 or consent of instructor.

**MCB 252  **Cells, Tissues & Development credit: 3 hours.
Functional organization and physiology of cells and tissues, including cellular signaling, cellular interactions, and developmental processes. Prerequisite: MCB 250 or equivalent with consent of instructor.

**MCB 253  **Exp Techniqs in Cellular Biol credit: 2 hours.
Laboratory course emphasizing experimental techniques in cellular biology, cellular physiology, and developmental biology. Credit is not given for both MCB 253 and MCB 151. Prerequisite: Concurrent or prior enrollment in MCB 252 or consent of instructor.

**MCB 290  **Individual Topics credit: 1 TO 5 hours.
Laboratory work and/or reading in fields selected in consultation with an appropriate faculty member. May be repeated to a maximum of 10 hours. Prerequisite: Consent of instructor.

**MCB 298  **MCB Honors Lab Discussion credit: 1 hours.
Discussion section associated with the Honors lab sections of MCB 251 and 253. Concurrent enrollment in the appropriate Honors lab section is required. May be repeated in separate terms to a maximum of 2 hours.

**MCB 299  **MCB Merit Program Discussion credit: 1 hours.
Provides the extra earned credit hours for students enrolled in the Merit Program in MCB 250, MCB 252, or MCB 354. Approved for both letter and S/U grading. May be repeated up to 6 hours in a semester, to a maximum of 10 total hours. Prerequisite: Consent of instructor.

**MCB 300  **Microbiology credit: 3 hours.
Emphasizes fundamental concepts of microbiology, including nutrition, ecology, physiology, genetics and molecular biology of microorganisms, and their role in nature and in infection and immunity. Credit is not given for both MCB 300 and MCB 100. Prerequisite: MCB 250 and credit or concurrent registration in MCB 252 or consent of instructor.

**MCB 301  **Experimental Microbiology credit: 3 hours.
Laboratory emphasizing the fundamentals of microbiology. Topics include growth, isolation, and identification of bacteria; restriction endonuclease analysis of DNA, genetic cloning, and gene transfer. Computer methods are used for the identification of microorganisms and for the analysis of recombinant DNA molecules. Prerequisite: MCB 250 and 251 and credit or concurrent registration in MCB 300, or consent of instructor.

**MCB 312  **Applied Microbiology Methods credit: 2 hours.
Consideration, through experimentation, of properties of bacteria, yeasts, molds, and actinomycetes important to industrial processes; exploration of methods of control of microbial processes in industry and sanitation. Prerequisite: MCB 100 and MCB 101 or consent of instructor.

**MCB 315  **Cells and Tissues Laboratory credit: 2 hours.
Laboratory course in the functional organization and structure of cells and tissues. Prerequisite: MCB 250, MCB 251, MCB 252, and MCB 253, or consent of instructor.

**MCB 316  **Intro Eukaryotic Molec Genet credit: 3 hours.
Introduction of the structure, expression, and regulation of genes of higher eukaryotes with an emphasis upon animal cells. Specific topics will include chromatin structure and its relation to gene expression, regulation of gene expression during development,
recombination, molecular genetic technologies, gene replacement therapy, and the molecular genetics of cancers. Prerequisite: MCB 150 and credit or concurrent registration in MCB 250 or consent of instructor.

**MCB 334 Functional Human Anatomy**  credit: 5 hours.
Studies the essentials of functional human anatomy with special reference to skeletal, muscular, splanchnic, circulatory, and nervous systems. Lecture and laboratory. Prerequisite: MCB 103 and MCB 104, or credit or concurrent registration in MCB 252 and MCB 253, or consent of instructor.

**MCB 354 Biochem & Phys Basis of Life**  credit: 3 hours.
Introduction to biochemistry and structural biology emphasizing the physical and chemical properties of macromolecules. Students may not receive credit for both MCB 354 and MCB 450. Prerequisite: CHEM 232 or CHEM 236, and MCB 250 and MCB 252, or consent of instructor.

**MCB 395 Special Topics Human Physiol**  credit: 2 hours.
Selected topics in general physiology. Prerequisite: Credit or concurrent registration in MCB 401; consent of instructor.

**MCB 396 Special Topics Brain Physiol**  credit: 2 hours.
Selected topics in animal physiology. Prerequisite: Credit or concurrent registration in MCB 402; consent of instructor.

**MCB 400 Cell Structure and Function**  credit: 4 hours.
Principles of eukaryotic cell biology; consideration of molecular and fine structural components of the cell with an emphasis on experimental analysis of the relationship of structure to function of gene, membrane, cytoskeleton, and extracellular matrix. Prerequisite: MCB 250, MCB 251, MCB 252, MCB 253, and credit or concurrent registration in MCB 354 or MCB 450 or consent of instructor.

**MCB 401 Cell & Membrane Physiology**  credit: 3 hours.
Cellular and molecular basis of physiological process with an emphasis on phenomena taking place at the membrane of cells and organelles (e.g., signal transduction, ion transport, synaptic transmission, nerve conduction, bioelectricity, synaptic plasticity.) Structure and function of biological membranes through a quantitative lens. Prerequisite: MCB 252 or consent of instructor.

**MCB 402 Sys & Integrative Physiology**  credit: 3 hours.
Examines organ physiology of animals; primary emphasis is on the control systems underlying regulation of homeostasis in mammals, including human beings. Prerequisite: MCB 252 or consent of instructor.

**MCB 403 Cell & Membrane Physiology Lab**  credit: 1 OR 2 hours.
Experimental investigation of cellular functions common to most eukaryotic cells; emphasis on biochemical, electrical, and mechanical recording techniques. 2 undergraduate hours. 1 graduate hour. Prerequisite: Credit or concurrent registration in MCB 401 and previous biology laboratory experience.

**MCB 404 Sys & Integrative Physiol Lab**  credit: 1 TO 2 hours.
Introduction to problems and techniques for studying the physiology of organ systems. 2 undergraduate hours. 1 graduate hour. Prerequisite: Credit or concurrent registration in MCB 402.

**MCB 405 Genetics and Genomics**  credit: 4 hours.
Study of genetics as a discipline, genetic analysis as a tool to understand biology and the role of genome sciences in biology. Prerequisite: MCB 250, MCB 251, MCB 252, and MCB 253; or consent of instructor.

**MCB 406 Gene Expression**  credit: 3 hours.
Introduction to gene expression and how different segments of gene expression pathways including gene transcription, RNA processing, protein translation, targeting, activity and turnover are modulated to maintain cellular homeostasis. The technologies (both general and specialized) used currently to analyze gene expression and the regulation of protein function are also discussed. Same as BIOC 406. Prerequisite: MCB 354 or consent of instructor.

**MCB 408 Immunology**  credit: 3 hours.
Introduction to fundamentals of immunology with emphasis on biological application; basic background for understanding immunological responses and techniques applicable to biological research. Prerequisite: MCB 250, MCB 251, MCB 252, MCB 253, and MCB 354; or consent of instructor.

**MCB 409 Bioinformatics & Func Genomics**  credit: 3 hours.
Introduction to theoretical and applied aspects of modern systems biology, bioinformatics, and functional genomics. Topics include public-domain biological databases, sequence alignment and analysis tools, phylogenomics, collection and analysis of genomic and proteomic data, data mining, structural genomics and fundamentals of molecular modeling. Concepts are complemented with hands-on
experience with computational biology databases and bioinformatic tools. 3 undergraduate hours. Prerequisite: MCB 354 or consent of instructor.

MCB 410 Developmental Biology credit: 4 hours.
Survey of molecular and cellular mechanisms involved in development and growth of animals. Topics to be covered include fertilization and early cell lineage, body axis formation, gastrulation, neural induction and patterning, segmentation, and other aspects of pattern formation including organogenesis of branching organs, limb development and regeneration. Prerequisite: MCB 252 and credit or concurrent registration in MCB 354, or consent of instructor.

MCB 412 Cellular Molec Neurobiology credit: 3 hours.
Cellular and molecular basis of form and function of the nervous system with emphasis on chemical signaling. Topics will include: combinatorial regulation of neurotransmission, nerve terminal, molecular organization of postsynaptic sites, retrograde signals, neurotrophins, cytoskeleton, growth cone motility, gene regulation, axon target selection, chemoeffinity hypothesis, calcium signaling in plasticity, and neurological disorders and therapies. Same as NEUR 422. Prerequisite: MCB 252 and credit or concurrent registration in MCB 354 or consent of instructor.

MCB 413 Endocrinology credit: 3 hours.
Physiology and biochemistry of the endocrine system and its hormones with special reference to vertebrates and to human endocrine disorders. Prerequisite: MCB 252 or consent of instructor. One semester of biochemistry is recommended.

MCB 414 Introduction to Neurobiology credit: 3 hours.
Introduction to the physiology of nerve cells, mechanisms of neural integration, and the organization of sensory and motor systems; also introduces neurochemistry, neuroendocrinology, neural development, neural plasticity, and the physiological basis of behavior. Same as NEUR 404. Prerequisite: MCB 252 or consent of instructor.

MCB 415 Struct Funct of Nervous System credit: 4 hours.
Examines the structural organization and function of the major systems of the nervous system. Lecture and laboratory. Same as NEUR 425. Prerequisite: MCB 401 or MCB 412, or MCB 414, or consent of instructor.

MCB 416 Integrative Neurophysiology credit: 3 hours.
Advanced studies of single-neuron function and systems neurophysiology. Topics include: ion channels, ionic basis of neural potentials, small neural networks, central pattern generators, neural coding, visual system, auditory system, motor system, sensorimotor integration, learning, and emotion. Same as NEUR 426. Prerequisite: MCB 401 or MCB 412, or MCB 414, or consent of instructor.

MCB 417 Modeling Neural Systems credit: 4 hours.
This combined lecture/lab course will introduce students to the major paradigms in neural network modeling, and explore their relevance for understanding real neural systems. In the computer lab, students will learn how to program and use neural networks. In lecture, students will be given the technical knowledge needed to accomplish the lab, and the neurophysiological knowledge needed to evaluate neural networks as models of real neural systems. This highly interactive course is open to students from various backgrounds. Same as BIOP 417 and NEUR 427. Prerequisite: MCB 414; and MATH 124; and CS 110; or equivalent or consent of instructor.

MCB 419 Brain, Behavior & Info Process credit: 3 hours.
Exploration of the neural basis of animal behavior. Emphasis on the information processing problems that animals face in complex natural environments and how nervous systems have evolved to solve these problems. Introduction to the use of computer modeling and simulation techniques for exploring principles of nervous system design and function. Current literature in computational neurobiology and neuroethology will be incorporated in readings and class discussion. Same as BIOE 419, BIOP 419 and NEUR 419. Prerequisite: CS 101; and PHYS 102 or PHYS 212; and MCB 252; or equivalent or consent of instructor.

MCB 421 Microbial Genetics credit: 3 hours.
Prokaryotic and eukaryotic microbial genetic systems; emphasis on typical data analyses, together with the basic classes of genetic phenomena. Prerequisite: MCB 300 or consent of instructor.

MCB 424 Microbial Biochemistry credit: 3 hours.
Examines the biochemical ecology of diverse microbial groups with emphasis on anaerobic systems. Prerequisite: MCB 250 and MCB 354 or MCB 450, or consent of instructor.

MCB 425 Molecular Biophysics credit: 3 hours.
Same as BIOP 420. See BIOP 420.

MCB 426 Bacterial Pathogenesis credit: 3 hours.
Emphasizes prokaryotes that cause important diseases in humans and other animals; host-parasite bacteriology; and chemistry and genetics of mechanisms of pathogenesis. Prerequisite: MCB 300 and MCB 354, or consent of instructor.
MCB 427  Infection and Immunity  credit: 3 hours.
Study of the field of immunology with emphasis on the host's interaction with microbes. Topics will include self versus non-self recognition in the immune system, effector mechanisms of immunity to infection, inherited and acquired immunodeficiencies, and vaccine designs. Prerequisite: MCB 300, MCB 354, and MCB 408; or consent of instructor.

MCB 428  Bacterial Pathogens Laboratory  credit: 2 hours.
Laboratory study of methods of recognition and differentiation, diagnostic tests, and mechanisms of pathogenesis; students are voluntary donors of microorganisms used in experiments. Prerequisite: MCB 300 and MCB 301; credit or concurrent registration in MCB 354 or consent of instructor.

MCB 429  Cellular Microbiology & Disease  credit: 3 hours.
Emphasizes cell biology of infectious diseases, using cellular, molecular, and animal models. Will stress molecular cross-talk that drives host-pathogen interactions, state-of-the art approaches for investigating host and microbial cell and molecular biology, latest paradigms in host cell biology, and, the evolutionary basis by which pathogens can manipulate cytoskeleton, membranes, organelles, cell cycle, and signaling in eukaryotic cells. MCB 300, MCB 354 and MCB 400, or consent of instructor.

MCB 430  Molecular Microbiology  credit: 3 hours.
Modern contributions to the science of microbiology; emphasizes the structure, function, and synthesis of informational macromolecules and on the role microorganisms have played in molecular biology. Prerequisite: MCB 300 and credit or concurrent registration in MCB 354, or consent of instructor.

MCB 431  Microbial Physiology  credit: 3 hours.
Examines bacterial physiology, including discussions of energetics, regulation of metabolism, and cell structure. Prerequisite: MCB 300 or equivalent; credit or concurrent registration in a biochemistry course.

MCB 432  Computing in Molecular Biology  credit: 3 hours.
Examination of computational aspects of biology with an emphasis on the relationships between biological questions and their recastings as mathematical or logical problems. Topics are drawn from biochemistry, genetics, molecular sequence analysis, and molecular structure. Prerequisite: MCB 250, MCB 252, MCB 354, and calculus (one of MATH 220, MATH 221, MATH 231, MATH 234); or consent of instructor.

MCB 433  Virology & Viral Pathogenesis  credit: 3 hours.
Same as PATH 433. See PATH 433.

MCB 434  Food & Industrial Microbiology  credit: 3 hours.
Same as FSHN 471. See FSHN 471.

MCB 435  Microbial Ecology & Evolution  credit: 3 hours.
Focuses on evolutionary and ecological principles as they apply to microorganism. Examples from both medical and environmental microbiology will emphasize the general mechanisms that generate and structure microbial biodiversity. Introduces a broad array of new quantitative and molecular tools that facilitate the study of microbial population and community dynamics. Principles of evolutionary ecology learned in this class will address a broad range of microbiological issues from emerging pathogens to global climate change. Prerequisite: MCB 300 or consent of instructor.

MCB 441  Comparative Animal Physiology  credit: 3 hours.
Physiological and biochemical adaptations to environmental challenges in both invertebrates and vertebrates; emphasis on comparative aspects of ionic and osmotic regulation, gas exchange and acid-base balance, circulation, muscles and movement, bioenergetics, neurosensory physiology, and endocrinology. Prerequisite: MCB 252 and credit or concurrent enrollment in MCB 354.

MCB 442  Comparative Immunobiology  credit: 4 hours.
Same as ANSC 450 and PATH 410. See ANSC 450.

MCB 446  Physical Biochemistry  credit: 3 hours.
Same as CHEM 472 and BIOC 446. See BIOC 446.

MCB 450  Introductory Biochemistry  credit: 3 hours.
Chemistry and metabolism of carbohydrates, lipids, proteins, nucleic acids, vitamins, and coenzymes and their relation to the regulation and processes of organisms, cells, and subcellular components. Not intended for students in the MCB or biochemistry curricula. Students may not receive credit for both MCB 450 and MCB 354. Prerequisite: CHEM 232 or CHEM 236, or equivalent, or consent of instructor.

MCB 460  Regeneration and Medicine  credit: 3 hours.
A survey of regeneration biology and medicine at the organ, tissues, and cellular/genetic/molecular/levels. Basic concepts are presented with a focus on contemporary methods and seminal experiments. Students will learn to think critically and creatively about experimentation and analyses of three regenerative medicine strategies: stem cell transplantation, bioartificial tissues, and chemical induction of regeneration in vivo. Prerequisite: MCB 410 or consent of instructor. Recommended: knowledge of vertebrate histology and anatomy.

**MCB 480  Eukaryotic Cell Signaling**  credit: 3 hours.
General principles of molecular signaling regulating membrane, cytoplasmic, and nuclear events in eukaryotic cells with emphasis on mammalian systems. Contemporary methods of investigation and the principles of identifying and solving problems related to signal transduction will be emphasized. Prerequisite: MCB 400 or consent of instructor.

**MCB 481  Developmental Neurobiology**  credit: 3 hours.
Principles of vertebrate and invertebrate developmental neurobiology with emphasis on the molecular and cellular mechanisms controlling neuronal determination, axon pathfinding, synapse formation, and plasticity. Prerequisite: MCB 400 or MCB 412 or consent of instructor.

**MCB 482  Biological Clocks**  credit: 2 hours.
Study of the nature, mechanisms, functions, development, and evolution of the biological rhythms associated with geophysical cycles; emphasizes circadian rhythms and their role as biological clocks for the timing of photoperiodism, celestial orientation, human physiology and behavior. Prerequisite: MCB 354 or consent of instructor.

**MCB 484  Model Organisms & Epigenetics**  credit: 3 hours.
Explores the main eukaryotic model genetic organisms/systems used in molecular and biomedical research including plants, animals, insects, fungi, and cell culture. The framework for lectures and discussions focuses on epigenetic mechanisms of gene regulation and genome organization. Includes reading, discussion, the presentation of the primary research literature with emphasis on experimental methods and design. This course may not be repeated for credit. Prerequisite: MCB 250-MCB 253 and MCB 354, or graduate standing, or consent of instructor.

**MCB 492  Senior Thesis**  credit: 3 TO 5 hours.
Research conducted under the direction of a faculty member in the School of Molecular and Cellular Biology. Normally, the student enrolls in MCB 492 during the last semester on campus prior to graduation. In the semester preceding enrollment, interested students should consult with their faculty advisors concerning enrollment procedures. A minimum of 3 credit hours is required, and a thesis must be presented for credit to be received. Successful completion of MCB 492 is required in order to be eligible for graduation with distinction in MCB. No graduate credit. Prerequisite: Two consecutive semesters of at least 2 credit hours of MCB 290 under the guidance of the same faculty member, or consent of instructor.

**MCB 493  Special Topics Mol Cell Biol**  credit: 1 TO 4 hours.
Discussion of current topics of interest within the broad domain of molecular and cellular biology; seminar or lecture format. Topics vary. May be repeated to a maximum of 12 hours. Prerequisite: Junior standing and consent of instructor.

**MCB 501  Advanced Biochemistry**  credit: 4 hours.
Focuses upon structure-function analyses of biomolecules and the chemical and evolutionary foundations of metabolic networks. Emphasis is on research methodology and current problems.

**MCB 502  Advanced Molecular Genetics**  credit: 4 hours.
An advanced course in molecular genetics. Emphasis is on research methodology and current problems.

**MCB 505  Neurochemistry**  credit: 3 hours.
Same as NEUR 505 and PSYC 505. See PSYC 505.

**MCB 507  Dialogues in Neuroscience**  credit: 3 hours.
Covers fundamental questions in Neuroscience organized into modules: (i) How technologies shape neuroscience: Lessons from history. (ii) Crossing levels of analysis: the virtues and pitfalls of reductionism. (iii) Emergence of brain: Development and evolution of modular functions. (iv) The utility of model systems: Modeling basic processes and human conditions. Same as NEUR 507. Prerequisite: Second-year or later graduate student status in Neuroscience or a related program.

**MCB 509  Curr Topics Mol & Int Physiol**  credit: 2 hours.
Advanced seminars in current physiological research. May not be repeated for credit. Prerequisite: Consent of instructor.

**MCB 511  Mol Bio of Microbe-Plant Inter**  credit: 3 hours.
Same as PLPA 509. See PLPA 509.

**MCB 512  Advanced Endocrinology**  credit: 2 hours.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>MCB 519</td>
<td>Computational Brain Theory</td>
<td>1 hours</td>
<td>Same as NEUR 591. See NEUR 591.</td>
</tr>
<tr>
<td>MCB 527</td>
<td>Human Neuroscience</td>
<td>3 hours</td>
<td>Principles of human neuroscience and mechanisms of neural pathophysiology. Same as NEUR 527. Prerequisite: Consent of instructor.</td>
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<tr>
<td>MCB 528</td>
<td>Evolution in a Microbial World</td>
<td>3 hours</td>
<td>Structure, synthesis, and function of molecules and organelles concerned with the intracellular transmission of genetic information</td>
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<td>(including gene regulation, transcription, and translation). Prerequisite: MCB 421 or MCB 340, and MCB 354, or consent of instructor.</td>
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<tr>
<td>MCB 529</td>
<td>Special Topics Cell Devel Biol</td>
<td>1 TO 4 hours</td>
<td>Discussion of current topics of interest in higher eukaryotic cellular and molecular biology, development, neurobiology; seminar or</td>
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<td>lecture format. Topics vary. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.</td>
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<tr>
<td>MCB 530</td>
<td>Reproductive Physiol Seminar</td>
<td>1 hours</td>
<td>Presentation and discussion of current literature as well as graduate student and staff research proposals and findings in reproductive</td>
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<td>physiology. May be repeated to a maximum of 4 hours. Prerequisite: Consent of instructor.</td>
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<tr>
<td>MCB 531</td>
<td>Adv Reproductive Endocrinology</td>
<td>3 hours</td>
<td>Same as ANSC 531 and VB 531. See ANSC 531.</td>
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<tr>
<td>MCB 533</td>
<td>Repro Physiology Lab Methods</td>
<td>1 TO 3 hours</td>
<td>Same as ANSC 533 and VB 533. See ANSC 533.</td>
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<tr>
<td>MCB 546</td>
<td>Bioenergetics</td>
<td>2 hours</td>
<td>Same as BIOP 546. See BIOP 546.</td>
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<tr>
<td>MCB 550</td>
<td>Biomolecular Physics</td>
<td>4 hours</td>
<td>Same as BIOP 550 and PHYS 550. See PHYS 550.</td>
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<tr>
<td>MCB 551</td>
<td>Adv Top Biochemistry</td>
<td>1 OR 2 hours</td>
<td>Series of quarter or half-term intensive courses on the recent research findings in important areas of biochemistry and molecular</td>
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<td>biology. Covers such areas as: biophysical methods; enzyme mechanisms; membrane biochemistry; regulation of gene expression;</td>
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<td>nucleic acid biochemistry; metabolic regulation; cellular communication; and medical biochemistry. Lectures, discussions, student</td>
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<td>papers, and presentations. May be repeated. Students may register in more than one section per term to a maximum of 4 hours.</td>
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<td>Prerequisite: MCB 354 or equivalent or consent of instructor.</td>
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<tr>
<td>MCB 552</td>
<td>Lab Techniques in Biochemistry</td>
<td>1 TO 4 hours</td>
<td>Experiments concerning the detection, isolation, and characterization of macromolecules, including enzymes, antibodies, and nucleic</td>
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<td>acids; methods of studying the size, shape, and hydrodynamic properties of macromolecules and other compounds. May be repeated to</td>
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<td>a maximum of 6 hours. Prerequisite: BIOC 455 or consent of instructor.</td>
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<tr>
<td>MCB 553</td>
<td>Enzyme Reaction Mechanisms</td>
<td>3 OR 4 hours</td>
<td>Same as CHEM 572. See CHEM 572.</td>
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<tr>
<td>MCB 554</td>
<td>Genomics, Proteomics, Bioinfo</td>
<td>3 OR 4 hours</td>
<td>Same as CHEM 574. See CHEM 574.</td>
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<tr>
<td>MCB 555</td>
<td>Anlys Biochemical Literature</td>
<td>2 hours</td>
<td>Discussions of current research and literature. Required of all graduate students whose major is biochemistry. Prerequisite: Graduate</td>
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<td>standing in biochemistry or consent of instructor.</td>
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<tr>
<td>MCB 556</td>
<td>Topics in Biophysical Chem</td>
<td>4 hours</td>
<td>Same as BIOP 540 and CHEM 576. See CHEM 576.</td>
</tr>
<tr>
<td>MCB 561</td>
<td>Mechanisms Viral Pathogenesis</td>
<td>3 hours</td>
<td>Same as PATH 519. See PATH 519.</td>
</tr>
<tr>
<td>MCB 571</td>
<td>Bioinformatics</td>
<td>4 hours</td>
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</tbody>
</table>
Same as ANSC 543, CHBE 571, and STAT 530. See CHBE 571.

**MCB 580  Res Ethics & Responsibilities**  credit: 1 hours.
Lecture/discussion course focusing on research ethics and a variety of related issues that can influence success in graduate school in the biological sciences, including scientific integrity and compliance with regulations for laboratory research. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

**MCB 581  Laboratory Rotation I**  credit: 1 hours.
Laboratory research methods; familiarization of first-year graduate students with experimental methods used in research in microbiology. Required of all first-year students majoring in microbiology. First five weeks of each term. Approved for S/U grading only. Prerequisite: First-year graduate status and consent of department; concurrent registration in MCB 582.

**MCB 582  Laboratory Rotation II**  credit: 1 hours.
Laboratory research methods; familiarization of first-year graduate students with experimental methods used in research in microbiology. Required of all first-year students majoring in microbiology. Second five weeks of each term. Approved for S/U grading only. Prerequisite: First-year graduate status and consent of department; concurrent registration in MCB 581.

**MCB 583  Laboratory Rotation III**  credit: 1 hours.
Laboratory research methods; familiarization of first-year graduate students with experimental methods used in research in microbiology. Required of all first-year students majoring in microbiology. Third five weeks of each term. Approved for S/U grading only. Prerequisite: First-year graduate status and consent of department; concurrent registration in MCB 581 and MCB 582.

**MCB 585  Current Topics in Microbiology**  credit: 1 hours.
Discussions, reviews, and appraisal of special topics in microbiology and molecular biology; seminar or lecture. Topics vary. Approved for S/U grading only. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

**MCB 586  Concepts/Topics Immunology**  credit: 2 hours.
Same as PATH 518. See PATH 518.

**MCB 660  Human Pharmacology I**  credit: 4 hours.
Studies the general principles of drug action and analyzes the actions of the major drug groups on biochemical and physiological processes. Prerequisite: Consent of instructor.

**MCB 661  Human Pharmacology II**  credit: 4 hours.
Continuation of MCB 660. Prerequisite: Consent of instructor.
MDIA 100  **College of Media Orientation**  credit: 1 hours.
College of Media Orientation is designed to build academic and social integrity and to give students the resources they need to be responsible members of the University of Illinois community who earn degrees in a timely manner. Approved for S/U grading only.

MDIA 299  **Media Study Abroad**  credit: 0 TO 18 hours.
Provides credit toward the undergraduate degree for study at accredited foreign institutions or approved overseas programs. Final determination of credit is made upon the student's completion of the work. May be repeated in separate terms to a maximum of 44 hours. Approved for both letter and S/U grading. Prerequisite: One year of residence at UIUC, good academic standing, and prior approval of the College of Media.

MDIA 512  **History of Libraries**  credit: 2 OR 4 hours.
Same as LIS 512. See LIS 512.

MDIA 520  **Seminar Semantics**  credit: 2 TO 4 hours.
Same as PHIL 520. See PHIL 520.

MDIA 524  **Dev Psycholinguistics**  credit: 2 OR 4 hours.
Same as LING 524 and PSYC 524. See PSYC 524.

MDIA 525  **Psycholinguistics**  credit: 2 OR 4 hours.
Same as LING 525 and PSYC 525. See PSYC 525.

MDIA 560  **Feminist Media Studies**  credit: 4 hours.
Addresses major areas of theoretical debate or interest in the broad topic of "Feminist Media Studies" and looks in depth at a number of theoretical issues which define it. Develops an understanding of historical, psychoanalytic, interpretive, and social scientific approaches to the study of film and television texts, their reception, and their production. Readings are extensive and directed toward illustrating the range of theoretical and empirical approaches applied to addressing questions of central interest in the field. Viewings will emphasize some lesser-known historical texts central to theoretical debates in the field. Viewings and readings are focused on "popular" film and television. Same as GWS 560.

MDIA 563  **World Broadcasting**  credit: 4 hours.
Studies the broadcast systems used by the nations of the world; alternative and mixed systems; international organizations, agreements, exchanges, and problems; broadcasts to and from other countries; implications of such new developments as satellites; and mass and non-mass uses. Prerequisite: Consent of department.

MDIA 568  **Political Economy of Comm**  credit: 4 hours.
Analyzes the structure, policy, and behavior of such media of communication as newspapers, magazines, books, postal service, telegraph, telephone, broadcasting, and film; special emphasis on their relationships to political order and the economy. Prerequisite: Consent of department.

MDIA 570  **Popular Culture**  credit: 4 hours.
Examines problems of cultural analysis related to the media of communications and the social implications of communications research.

MDIA 571  **Proseminar I**  credit: 4 hours.
Addresses the mass media of communications, their role as social institutions, and their control and support. Examines evolution of research on mass media content, audience, and effects. Prerequisite: Consent of department.

MDIA 572  **Proseminar II**  credit: 4 hours.
Addresses the problems of communications, including the individual as a communicating system, symbolic processes, analysis of messages, psycholinguistics, and language as social behavior. Prerequisite: Consent of department.

MDIA 573  **Freedom of Expression**  credit: 4 hours.
Examines the development of the Anglo-American press system and the idea of freedom of the press; explores contemporary mass media and their implications for freedom and democracy.

**MDIA 574  Communications Systems  credit: 4 hours.**
Analyze the structure and development of communications systems, the role of communication in social change, political movements, and formal organizations.

**MDIA 575  Cult Studies and Crit Interp  credit: 4 hours.**
Explores the history, applications and limitations of various theoretical and methodological approaches to the study of contemporary culture and popular media. Examines debates and issues within cultural studies and with other schools of thought. The impact of cultural studies across the disciplines. Same as EPS 575. Prerequisite: Consent of instructor.

**MDIA 577  Philosophy of Technology  credit: 4 hours.**
Introduces students to those thinkers who understand technology philosophically as a central component in modern culture. Examines major perspectives on the nature of technology, rooted in Norbert Weiner, Karl Marx, and Martin Heidegger. Links media technologies, information systems, and global communications background problems and basic issues to technology more generally. Develops instrumentalism, feminist and critical approaches, ethical concerns, alternative technologies in the context of technology as a cultural activity.

**MDIA 578  Communication Ethics  credit: 4 hours.**
This course introduces the latest literature in, or directly relevant to, communication, media and information ethics. It examines current efforts in applied and professional ethics, feminist ethics, and social ethics to develop ethical models that are cross-cultural, gender inclusive and international. The major ethical issues are considered in such areas as global communication, new media technologies, information systems, news, and entertainment.

**MDIA 580  Advanced Interpretive Methods  credit: 4 hours.**
Same as SOC 580. See SOC 580.

**MDIA 590  Special Topics  credit: 2 TO 8 hours.**
May be repeated in the same or in multiple semesters if topics vary.

**MDIA 592  Quantitative Methods  credit: 4 hours.**
Introduces the methods of empirical research in the behavioral sciences applicable to research problems in human communication, with emphasis on studies of mass communication. Lectures, readings, and laboratory practice.

**MDIA 593  Qualitative Methods  credit: 4 hours.**
Introduces qualitative concepts and strategies in the social sciences and humanities which apply to research problems in mass communications.

**MDIA 599  Thesis Research  credit: 0 TO 16 hours.**
Approved for S/U grading only. May be repeated to a maximum of 16 hours.
Medieval Studies

Medieval Studies, Program in
Director: Karen Fresco
Program Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 265-6254
www.medieval.uiuc.edu

MDVL 111  Ancient to Medieval Art  credit: 4 hours.
Same as ARTH 111. See ARTH 111.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

MDVL 201  Medieval Lit and Culture  credit: 3 hours.
Same as CWL 253 and ENGL 202. See ENGL 202.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

MDVL 222  Medieval Art  credit: 3 hours.
Same as ARTH 222. See ARTH 222.

MDVL 231  Northern Renaissance Art  credit: 3 hours.
Same as ARTH 231. See ARTH 231.

MDVL 240  Italy Middle Ages & Renaisss  credit: 3 hours.
Same as CWL 240 and ITAL 240. See ITAL 240.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

MDVL 245  Women & Gender Pre-Mod Europe  credit: 3 hours.
Same as GWS 245 and HIST 245. See HIST 245.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

MDVL 247  Medieval Europe  credit: 3 hours.
Same as HIST 247. See HIST 247.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

MDVL 251  Viking Mythology  credit: 3 hours.
Same as CWL 251, RLST 251, and SCAN 251. See SCAN 251.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

MDVL 252  Viking Sagas in Translation  credit: 3 hours.
Same as CWL 252 and SCAN 252. See SCAN 252.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

MDVL 254  The Legend of King Arthur  credit: 3 hours.
Same as CWL 254 and GER 254. See GER 254.
This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

MDVL 255  **British Isles to 1688**  credit: 3 hours.
Same as HIST 255. See HIST 255.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

MDVL 322  **Byzantine Art**  credit: 3 hours.
Same as ARTH 322. See ARTH 322.

MDVL 345  **Medieval Civilization**  credit: 3 hours.
Same as HIST 345 and RLST 345. See HIST 345.

MDVL 346  **The Age of the Renaissance**  credit: 3 hours.
Same as HIST 346 and RLST 346. See HIST 346.

MDVL 369  **Spirituality and Experience**  credit: 3 hours.
Same as ARTH 369, CWL 369, HIST 344, and RLST 369. See ARTH 369.

MDVL 403  **European Education to 1600**  credit: 2 OR 3 hours.
Same as EPS 403 and HIST 440. See EPS 403.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
UIUC: Advanced Composition

MDVL 407  **Introduction to Old English**  credit: 3 OR 4 hours.
Same as ENGL 407. See ENGL 407.

MDVL 411  **Chaucer**  credit: 3 OR 4 hours.
Same as ENGL 411. See ENGL 411.

MDVL 412  **Medieval Architecture**  credit: 3 hours.
Same as ARCH 412. See ARCH 412.

MDVL 413  **Dante**  credit: 3 hours.
Same as CWL 413 and ITAL 413. See ITAL 413.

MDVL 414  **Petrarch & Boccaccio**  credit: 3 hours.
Same as CWL 414 and ITAL 414. See ITAL 414.

MDVL 415  **Classical Rhetorics**  credit: 3 OR 4 hours.
Same as CLCV 415 and CMN 415. See CMN 415.

MDVL 417  **History of the French Language**  credit: 3 OR 4 hours.
Same as FR 417. See FR 417.

MDVL 420  **Masterpieces Renaiss Lit**  credit: 3 hours.
Same as CWL 420 and ITAL 420. See ITAL 420.

MDVL 421  **Early Medieval**  credit: 3 OR 4 hours.
Same as ARTH 421. See ARTH 421.

MDVL 423  **Romanesque Art**  credit: 3 OR 4 hours.
Same as ARTH 423. See ARTH 423.

MDVL 424  **Gothic Art**  credit: 3 OR 4 hours.
Same as ARTH 424. See ARTH 424.

MDVL 425  **Manuscripts and Early Printing**  credit: 3 OR 4 hours.
Same as ARTH 425 and CWL 425. See ARTH 425.
MDVL 431  Topics: Northern Art 1300-1500  credit: 3 OR 4 hours.
Same as ARTH 431. See ARTH 431.

MDVL 433  Fifteenth-Century Italian Art  credit: 3 OR 4 hours.
Same as ARTH 433. See ARTH 433.

MDVL 440  Early Christian Thought  credit: 3 OR 4 hours.
Same as RLST 440. See RLST 440.

MDVL 443  Byzantine Empire AD 284-717  credit: 3 OR 4 hours.
Same as HIST 443. See HIST 443.

MDVL 444  Medieval England  credit: 2 TO 4 hours.
Same as HIST 445. See HIST 445.

MDVL 460  Medieval Latin  credit: 3 hours.
Same as LAT 460. See LAT 460.

MDVL 470  Middle Ages to Baroque  credit: 3 hours.
Same as GER 470. See GER 470.

MDVL 500  Seminar in Medieval Studies  credit: 4 hours.
Team-taught, interdisciplinary seminar on varying topics in Medieval Studies drawing on faculty from UIUC and invited scholars from other universities. May be repeated to a maximum of 12 hours. Approved for both letter and S/U grading.

MDVL 505  Old Norse-Icelandic I  credit: 4 hours.
Same as SCAN 505. See SCAN 505.

MDVL 506  Old Norse-Icelandic II  credit: 4 hours.
Same as SCAN 506. See SCAN 506.

MDVL 508  Beowulf  credit: 4 hours.
Same as ENGL 508. See ENGL 508.

MDVL 511  Chaucer  credit: 4 hours.
Same as ENGL 511. See ENGL 511.

MDVL 512  Seminar in Medieval Arch  credit: 4 hours.
Same as ARCH 512. See ARCH 512.

MDVL 514  Seminar in Medieval Literature  credit: 4 hours.
Same as ENGL 514. See ENGL 514.

MDVL 515  Middle High German  credit: 4 hours.
Same as GER 515. See GER 515.

MDVL 522  Studies in Medieval Art  credit: 4 hours.
Same as ARTH 522. See ARTH 522.

MDVL 530  Old High German  credit: 4 hours.
Same as GER 530. See GER 530.

MDVL 531  Intro to Old French Language  credit: 4 hours.
Same as FR 531. See FR 531.

MDVL 532  Studies in Medieval French Lit  credit: 4 hours.
Same as FR 532. See FR 532.

MDVL 540  Seminar in N. Renaissance Art  credit: 4 hours.
Same as ARTH 531. See ARTH 531.

MDVL 542  Problems in Medieval History  credit: 4 hours.
Same as HIST 542. See HIST 542.

MDVL 543  Seminar in Medieval History  credit: 4 hours.
Same as HIST 543. See HIST 543.

MDVL 547  Seminar English Hist to 1688  credit: 4 hours.
Same as HIST 547. See HIST 547.

MDVL 548  Prob English Hist to 1688  credit: 4 hours.
Same as HIST 548. See HIST 548.

MDVL 570  Seminar Old French Literature  credit: 4 hours.
Same as FR 570. See FR 570.

MDVL 571  Medieval German Studies  credit: 4 hours.
Same as GER 571. See GER 571.
ME 170  **Computer-Aided Design**  credit: 3 hours.
Geometry and topology of engineered components: creation of engineering models and their presentation in standard 2D blueprint form and as 3D wire-frame and shaded solids; meshed topologies for engineering analysis and tool-path generation for component manufacture; ISO and ANSI standards for coordinate dimensioning and tolerancing, with an introduction to geometric dimensioning and tolerancing. Use of ProEngineer 3D solid-modeling software for creating associative models at the component and assembly levels with automatic blueprint creation, interference checking, and linked bill of materials. Credit is not given for both ME 170 and GE 101.

ME 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

ME 300  **Thermodynamics**  credit: 3 hours.
Introduction to classical thermodynamics through the second law; system and control-volume analyses of thermodynamic processes; irreversibility and availability; relations for ideal gas mixtures. Prerequisite: MATH 241.

ME 310  **Introductory Gas Dynamics**  credit: 4 hours.
Introduction to fluid mechanics with coverage of theory and applications of incompressible viscous and inviscid flows, and compressible high speed flows. Credit is not given for both ME 310 and TAM 335. Prerequisite: MATH 285; credit or concurrent registration in ME 300.

ME 320  **Heat Transfer**  credit: 4 hours.
Principles and application of heat transfer by conduction, convection, and thermal radiation. Prerequisite: ME 310 or TAM 335.

ME 330  **Engineering Materials**  credit: 4 hours.
Structures of polymers, metals, and ceramics as the basis for their mechanical behavior. Manipulation of structure through such processes as heat treatment and solidification. Mechanisms of material failure in service (yielding, fracture, fatigue, creep, corrosion, and wear) and simple design techniques to avoid these failures. Strategies for materials selection in design. Credit is not given for both ME 330 and either CEE 300 or MSE 280. Prerequisite: CHEM 102 and TAM 251.

ME 340  **Dynamics of Mechanical Systems**  credit: 3.5 hours.
Dynamic modeling of mechanical components and systems; time-domain and frequency-domain analyses of linear time-invariant systems; multi-degree-of-freedom systems; linearization of nonlinear systems. Credit is not given for both ME 340 and either GE 320 or AE 353. Prerequisite: MATH 285 and TAM 212; credit or concurrent registration in ECE 205, ECE 206, and MATH 415.

ME 350  **Design for Manufacturability**  credit: 3 hours.
Introduction to design-for-manufacturability methodologies and tools; quality management (Taguchi, productivity function deployment, statistical process control, etc.); materials selection (new and traditional materials); designing for primary manufacturing processes (cutting fundamentals, casting, forming, and shaping); designing with plastics (snap-fits, integral hinges, etc.); design for assembly; design for inspection and metrology (datums, geometric tolerancing, and inspection equipment); computer-integrated manufacturing. Prerequisite: ME 170; credit or concurrent registration in ME 330.

ME 360  **Signal Processing**  credit: 3.5 hours.
Basic electromechanical techniques used in modern instrumentation and control systems. Use of transducers and actuators. Signal conditioning, grounding, and shielding. Analog and digital signal processing and feedback control methods with emphasis on frequency domain techniques. Frequency response of continuous and discrete systems. Credit is not given for both ME 360 and ABE 425. Prerequisite: ME 340.

ME 370  **Mechanical Design I**  credit: 3 hours.
Kinematics and dynamics of machinery, including analytical kinematics, force analysis, cam design and balancing. Application of elementary mechanics of solids to analyze and size machine components for stress and deflection. Introduction to finite-element analysis with emphasis on beam and plate models. Prerequisite: ME 170, TAM 212, and TAM 251.

ME 371  **Mechanical Design II**  credit: 3 hours.
Design and analysis of machinery for load-bearing and power transmission. Consideration of material failure modes, including yielding, fracture, fatigue, and creep. Design and selection of machine elements: bolts, springs, rolling-element bearings, fluid-film lubrication, and power transmissions, including gears and friction drives. Prerequisite: ME 330 and ME 370.

**ME 390 Seminar** credit: 0 hours.
Lectures by faculty and invited authorities from the profession, concerning the ethics and practice of mechanical engineering and their relationship to other fields of engineering, to economics, and to society. Offered spring term only. Approved for S/U grading only.

**ME 400 Energy Conversion Systems** credit: 3 OR 4 hours.
Processes and systems for energy conversion, including power and refrigeration cycles, air conditioning, thermoelectrics and fuel cells; ideal-gas mixtures and psychrometrics. 3 undergraduate hours. 4 graduate hours. Prerequisite: ME 300.

**ME 401 Refrigeration and Cryogenics** credit: 3 OR 4 hours.
Theory of operation and design of equipment for production of low temperatures, from below ambient to near absolute zero; industrial, consumer, aerospace, medical, and research applications. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ME 300, ME 310, and ME 320.

**ME 402 Design of Thermal Systems** credit: 3 OR 4 hours.
Selection of components in fluid- and energy-processing systems to meet system-performance requirements; computer-aided design; system simulation; optimization techniques; investment economics and statistical combinations of operating conditions. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Credit or concurrent registration in ME 320.

**ME 403 Internal Combustion Engines** credit: 0 TO 4 hours.
Theory and analysis of reciprocating internal-combustion engines; fuels, carburetion, combustion, exhaust emissions, detonation, fuel injection, and factors affecting performance; laboratory work on variables that affect performance. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Credit or concurrent registration in ME 400 or ABE 466.

**ME 404 Intermediate Thermodynamics** credit: 4 hours.
Classical thermodynamics, including the TdS equations and the Maxwell relations; development of thermodynamic property relations, behavior of real gases, thermodynamics of mixtures, phase equilibrium and chemical reactions and equilibrium with an emphasis on combustion reactions; statistical thermodynamics including the effect of molecular and atomic structure, statistical concepts and distributions, calculation of thermodynamic properties of gas-phase atoms and molecules, kinetic theory of gases, and an introduction to vibrations in crystals and the electron gas in metals; selected applications such as the use of statistical thermodynamics in laser spectroscopic analysis of gas-phase properties. Credit is not given for both ME 404 and any of PHYS 427, CHEM 442, or CHEM 444. Prerequisite: ME 300.

**ME 405 Nuclear Power Engineering** credit: 3 OR 4 hours.
Same as NPRE 402. See NPRE 402.

**ME 410 Intermediate Gas Dynamics** credit: 4 hours.
Solution of internal compressible-flow problems by one-dimensional techniques, both steady and unsteady; flows with smooth and abrupt area change, with friction, with heat addition, and with mass addition; flows with weak and strong waves, multiple confined streams, and shock waves. Prerequisite: ME 300 and ME 310; or one of AE 311, TAM 335.

**ME 411 Viscous Flow & Heat Transfer** credit: 4 hours.
Same as AE 412. See AE 412.

**ME 412 Numerical Thermo-Fluid Mechs** credit: 3 OR 4 hours.
Numerical techniques for solving the equations governing conduction and convective heat transfer in steady and unsteady fluid flows: finite-difference and finite-volume techniques, basic algorithms, and applications to real-world fluid-flow and heat-transfer problems. 3 undergraduate hours. 3 or 4 graduate hours. For 4 graduate hours credit, graduate students are required to complete an additional project. Prerequisite: ME 310 and ME 320.

**ME 420 Intermediate Heat Transfer** credit: 4 hours.
Conduction heat transfer, radiation heat transfer, mass transfer, phase change, heat exchangers, and introductory numerical methods. Prerequisite: ME 310 and ME 320.

**ME 430 Failure of Engrg Materials** credit: 3 OR 4 hours.
Material anisotropy and elasto-plastic properties at the crystal level; microstructural basis for fatigue, fracture, and creep in metals, polymers, and ceramics; failure mechanisms and toughening in composites; structure and behavior of metal-matrix composites, ceramic-matrix composites, and polymer composites. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ME 330.

**ME 431 Mechanical Component Failure** credit: 3 OR 4 hours.
Relationship of materials and mechanics concepts to the design of structures and components: elasticity, plasticity, thermal loading, creep, fatigue, fracture, and residual-life assessments as they relate to materials selection and design. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ME 330 and ME 371; Recommended: ME 430.

ME 440  Kinem & Dynamics of Mech Syst  credit: 3 OR 4 hours.
Kinematics and dynamics of constrained rigid-body mechanical systems; use of modern computer-based analysis software packages. Same as ABE 420. 3 undergraduate hours. 4 graduate hours. Prerequisite: ME 370.

ME 445  Introduction to Robotics  credit: 4 hours.
Same as CS 443, ECE 470, and GE 421. See ECE 470.

ME 446  Robot Dynamics and Control  credit: 4 hours.
Same as ECE 489 and GE 422. See GE 422.

ME 450  Modeling Materials Processing  credit: 3 hours.
Manufacturing processes for metals and polymers; creation of process models based on momentum, heat, and mass transfer; model simplification by estimation and scaling; applications to casting, microstructure evolution, polymer molding and extrusion, and welding. Prerequisite: ME 320 and ME 330.

ME 451  Computer-Aided Mfg Systems  credit: 0 TO 4 hours.
The application of computer technology and operations research to manufacturing systems. Use of microprocessors for direct numeric control of machine tools, adaptive control and optimization, and integrated manufacturing systems. Applications of industrial robots. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ME 350.

ME 452  Num Control of Mfg Processes  credit: 0 TO 4 hours.
Numerical control systems, manufacturing processes, principles and practices basic to numerical control, and programming methodology for numerical control. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 101 and ME 350.

ME 460  Industrial Control Systems  credit: 4 hours.
Industrial control techniques; case studies of industrial systems; design, selection, and maintenance of industrial control systems, including electromechanical, pneumatic, thermal, and hydraulic systems. Credit is not given for both ME 460 and ECE 468. Prerequisite: ME 340 and ME 360.

ME 461  Computer Cntrl of Mech Systems  credit: 3 OR 4 hours.
Microcomputer control of thermal and mechanical systems: sensors and transducers, signal transmission and conversion, and regulator actuation. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ME 360 or ABE 425.

ME 470  Senior Design Project  credit: 3 hours.
Solution of a real-world design problem: development, evaluation, and recommendation of alternative solutions subject to realistic constraints that include most of the following considerations: economics, environment, sustainability, manufacturability, ethics, health and safety, society, and politics. 3 undergraduate hours. No graduate credit. Approval of the department is required to register. Prerequisite: Concurrent enrollment in no more than two required ME courses; completion of all required courses.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

ME 471  Finite Element Analysis  credit: 3 OR 4 hours.
The finite element method and its application to engineering problems: truss and frame structures, heat conduction, and linear elasticity; use of application software; overview of such advanced topics as structural dynamics, fluid flow, and nonlinear structural analysis. Same as AE 420 and CSE 451. Credit is not given for both ME 471 and CEE 470. Prerequisite: AE 470; or CS 101 and ME 370.

ME 472  Introduction to Tribology  credit: 4 hours.
Friction, wear, and lubrication; engineering surfaces; surface properties and surface topography; Hertzian contacts and contact of rough surfaces; friction of surfaces in contact; wear and surface failures; boundary lubrication; fluid properties; hydrodynamic lubrication; elastohydrodynamic lubrication; bearing selection; introduction to micro/nanotribology.

ME 485  MEMS Devices & Systems  credit: 3 hours.
Same as ECE 485 and IE 485. See ECE 485.

ME 487  MEMS-NEMS Theory & Fabrication  credit: 4 hours.
Physical and chemical theory, design, and hands-on fabrication of micro- and nano-electromechanical systems (MEMS and NEMS); cleanroom fabrication theory, including general cleanroom safety, lithography, additive and subtractive processes, bulk and surface micromachining, deep reactive ion etching (DRIE), lithographic Galvanoformung Abformung (LIGA), packaging, scaling, actuators, and...
micro-nanofluids; fabrication of two take-home devices, such as piezoresistive sensors and microfluidic logic chips, that demonstrate advanced fabrication processing. Prerequisite: PHYS 212.

ME 496  Honors Project  credit: 1 TO 4 hours.
Special project or reading course for James Scholars in engineering. 1 to 4 undergraduate hours. May be repeated. Prerequisite: Consent of instructor.

ME 497  Independent Study  credit: 1 TO 4 hours.
Independent study of advanced problems related to mechanical engineering. May be repeated. Prerequisite: Consent of instructor.

ME 498  Special Topics  credit: 0 TO 4 hours.
Subject offerings of new and developing areas of knowledge in mechanical engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 9 hours.

ME 501  Combustion Fundamentals  credit: 4 hours.
Fundamentals of kinetic theory, transport phenomena, chemical equilibria, and reaction kinetics; flames, their gross properties, structure, and gas dynamics including oscillatory and turbulent burning; solid and liquid propellant combustion; one-dimensional detonation theory including structure and initiation; three-dimensional and other complex detonation waves; supersonic burning. Same as AE 538. Prerequisite: AE 311 or ME 410.

ME 502  Thermal Systems  credit: 4 hours.
Steady-state simulation and optimization of thermal systems, dynamic performance, and probabilities in system design. Prerequisite: ME 402.

ME 503  Design of IC Engines  credit: 4 hours.
Design of internal combustion engines, including gas forces, inertia loads, bearing analysis, torsional vibration, balance, lubrication, valve and cam design, and stress analysis of major engine components. Prerequisite: ME 403.

ME 504  Multiphase Systems & Processes  credit: 4 hours.
Dynamics and thermodynamics of multiphase and multicomponent systems with special relevance to air-pollution control and energy conversion; relaxation phenomena; general motion of systems of disparate elemental masses; diffusion in gravitational and electric fields, and boundary-layer motion with mass transport; dispersion and collection of particulate matter; transport with surface reactions. Prerequisite: ME 404.

ME 510  Advanced Gas Dynamics  credit: 4 hours.
Theoretical gas dynamics; fundamental laws and basic equations for subsonic, transonic, and supersonic steady and unsteady flow processes. Same as AE 510. Prerequisite: ME 410.

ME 515  Air Quality Control  credit: 4 hours.
Same as CEE 546. See CEE 546.

ME 516  Aerosol Sampling and Analysis  credit: 4 hours.
Same as ATMS 535, CEE 545, and ENVS 545. See CEE 545.

ME 520  Heat Conduction  credit: 4 hours.
Fundamentals of heat conduction in isotropic and anisotropic materials; methods of solution to steady and transient heat conduction problems in one, two, and three dimensions; internal heat sources; periodic flow of heat; problems involving phase change; approximate analytical techniques; numerical methods; study of current articles on the subject. Prerequisite: ME 420.

ME 521  Convective Heat Transfer  credit: 4 hours.
Fundamentals of convective heat transfer; calculation of heat transfer within ducts and over submerged objects for laminar and turbulent flow; natural convection; film condensation and boiling; liquid metals. Prerequisite: ME 411.

ME 522  Thermal Radiation  credit: 4 hours.
Fundamentals of radiant-energy transport in absorbing and nonabsorbing media; pyrometry; applications to selected problems involving combined energy-transport mechanisms. Prerequisite: ME 420.

ME 530  Fatigue Analysis  credit: 4 hours.
Fatigue analysis methods for the design of structures and components: stress-life, strain-life, and crack-propagation approaches; multiaxial and high-temperature fatigue; interrelationship among material properties, geometry, and design methodology appropriate for a wide range of mechanical engineering components. Prerequisite: ME 430.
ME 531  Inelastic Design Methods  credit: 4 hours.
Material deformation under combined mechanical and thermal loading; constitutive equations and their application in engineering design and in inelastic finite element methods; material and structural degradation under fatigue and creep conditions. Prerequisite: ME 471 and ME 430.

ME 532  Fracture Resistant Design  credit: 4 hours.
Application of fracture mechanics and microstructural behavior to materials selection for design; practical approximation of linear and inelastic fracture parameters for evaluation of complex components; destructive and nondestructive tests for control of toughness in manufacture; residual life assessment involving time-dependent fracture (creep, fatigue, stress, corrosion); case studies; design project. Prerequisite: ME 430.

ME 533  Physical Basis for Plasticity  credit: 4 hours.
Physical and mathematical foundation for plasticity in crystalline materials, with application to deformation processes. Metal forming; deformation processes in other materials, such as slip in geological materials and polymers; rate dependence of plastic flow, with underlying physical mechanisms; kinetics of dislocation motion, mechanisms of work hardening, and crystallographic texture; theoretical framework for modeling the constitutive response of rate-dependent materials undergoing crystallographic slip, and allied computational procedures. Prerequisite: TAM 445.

ME 534  Analysis of Nonlinear Systems  credit: 4 hours.
Same as ECE 528 and GE 520. See ECE 528.

ME 550  Solidification Processing  credit: 4 hours.
Principles of control of structure, properties, and shape in processes involving liquid-solid transformations; stresses, heat flow, mass transport, solute redistribution, and nucleation and growth kinetics; relationship between process variables and structures and properties in the resultant material; examples are drawn from existing commercial and new developing processes. Same as MSE 542. Prerequisite: ME 450.

ME 551  Polymer Rheology & Processing  credit: 4 hours.
Continuum models for non-Newtonian fluids: generalized Newtonian, linear viscoelastic, and nonlinear viscoelastic models; relationship of rheology to processing; advanced problems in polymer processing such as numerical simulations of nonisothermal non-Newtonian flows, reactive processing, and processing of composites. Prerequisite: ME 450.

ME 554  Computational Process Modeling  credit: 4 hours.
Development and application of computer models to solve practical problems involving fluid flow, heat transfer, and deformation phenomena; simulation of a process of the student's choice and completion of a project involving extensive computation; steps required to carry a modeling project from problem definition to final report; advanced topics in computational methods for materials process modeling; case studies. Same as CSE 561. Prerequisite: ME 412 or ME 471; ME 450.

ME 561  Convex Methods in Control  credit: 4 hours.
Use of convex optimization in analysis and control of dynamical systems; robust control methods and the use of semidefinite programming; linear matrix inequalities, operator theory, model reduction, H-2 and H-infinity optimal control, S-procedure and integral quadratic constraints, structured singular value and mu-synthesis, and Markovian jump systems; applications in control design. Prerequisite: ECE 515.

ME 565  Model & Cntrl Electromech Syst  credit: 4 hours.
Same as ECE 568. See ECE 568.

ME 570  Nonlinear Solid Mech Design  credit: 4 hours.
Optimality conditions; finite element methods; design sensitivity analysis; nonlinear analysis; transient analysis; thermo-mechanical solid mechanics. Prerequisite: One of AE 420, CEE 470, ME 471, TAM 470; TAM 445, TAM 551.

ME 586  Mechanics of MEMS  credit: 4 hours.
Mechanics and dynamics of microelectromechanical systems (MEMS); scaling laws in electrostatics, magnetics, and fluidics; analytical models for thin-film growth and etching; effect of surface tension in small dimensions in relations to stability of MEMS during web fabrication; size effects on mechanical properties of MEMS materials; equations of motion for MEMS, involving coupled elastic and electric fields that give rise to nonlinear dynamical behavior; Mathieu behavior and chaotic systems. Prerequisite: ME 485.

ME 590  Seminar  credit: 1 hours.
Presentation and discussion of significant developments in mechanical engineering. Required of all Mechanical Engineering graduate students each term. Approved for S/U grading only. May be repeated.

ME 597  Independent Study  credit: 1 TO 4 hours.
Independent study of advanced problems related to mechanical engineering. May be repeated in the same term or in separate terms if topics vary to a maximum of 12 hours. Prerequisite: Consent of instructor.

ME 598  **Special Topics**  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in mechanical engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

ME 599  **Thesis Research**  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
Manufacturing Engineering

Manufacturing Engineering
Director of Program: S. G. Kapoor
Program Office: 4404 Mechanical Engineering Laboratory, 105 South Mathews Street, Urbana
Phone: 333-3432
www.mie.uiuc.edu

MFGE 310  Manufacturing Systems  credit: 3 hours.
Topics in manufacturing engineering including materials processing, manufacturing automation and process control, product and
process design, and planning.

MFGE 420  Decision Making & Control  credit: 3 hours.
Integration of production planning, production scheduling, and process supervision and control into a manufacturing hierarchy;
interfaces with other manufacturing functions. Focuses on the integration of the functions; integration of decision-making and
control considerations. Graduate credit is not given to engineering majors except by special permission of the student's department.
Prerequisite: Recommended: IE 300 or STAT 400.

MFGE 430  Mechatronics  credit: 3 hours.
Same as GE 423. See GE 423.

MFGE 498  Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in manufacturing engineering intended to augment the existing curriculum.
See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if
topics vary to a maximum of 9 undergraduate hours or 12 graduate hours.
MICR 590  Individual Topics  credit: 1 TO 16 hours.
May be repeated. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

MICR 595  Microbiology Graduate Seminar  credit: 0 TO 1 hours.
Required of all graduate students whose major is microbiology. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

MICR 599  Thesis Research  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
Military Science

Military Science
Head of Department: Peter Im
Department Office: 113 Armory Building, 505 East Armory, Champaign
Phone: 333-3418
www.uiuc.edu/unit/armyrotc

MILS 101  Foundations of Officership  credit: 2 hours.
Introduction to the aspect of leadership in the military; includes organization, mission and function of the Army, principles of leadership, and tools and techniques for student success while in college. Class is only available to students who have less than 60 credit hours.

MILS 102  Basic Leadership  credit: 2 hours.
Fundamentals of military and USGS map reading including methods such as intersection and resection; includes land navigation and orienteering techniques and their application. Includes field trip. Prerequisite: Only available to students who have less than 60 credit hours.

MILS 112  Leadership Laboratory  credit: 0 hours.
Introductory practical application of military skills and leadership; includes basic military mountaineering and rappelling, first aid, individual marching and weapons familiarization. Field trip may be required. May be repeated. Approved for S/U grading only.

MILS 114  Leadership Laboratory  credit: 0 hours.
Continuation of MILS 112 to include actual firing of weapons. Field trip may be required. May be repeated. Approved for S/U grading only.

MILS 201  Individual Leadership Studies  credit: 2 hours.
Fundamentals of military mountaineering and survival; to include scaling rock surfaces and rappelling; emplacement of rope bridging; and military survival techniques, to include camouflage and combat lifesaving techniques. Class is only available to students who have less than 60 credit hours. Includes field trips.

MILS 202  Leadership and Teamwork  credit: 2 hours.
Fundamentals of rifle marksmanship. Systematic study of the maintenance, operation, and employment of the U.S. Army's primary individual weapon system, the M16 rifle. Also includes instruction on weapons safety, military marksmanship techniques and tactics, an introduction to risk assessment and management, and an integration of a live-fire M16 range. Includes field trips. Prerequisite: Only available to students who have less than 60 credit hours.

MILS 212  Leadership Laboratory  credit: 0 hours.
Intermediate level practical application of military skills and leadership; includes mountaineering and rappelling, first aid, small unit marching, weapons firing, and physical fitness. Field trip required. May be repeated. Approved for S/U grading only.

MILS 214  Leadership Laboratory  credit: 0 hours.
Continuation of MILS 212 to include military radio communication procedures and small unit tactics. Field trip required. May be repeated. Approved for S/U grading only.

MILS 301  Leadership and Problem Solving  credit: 3 hours.
Fundamentals of small unit military operations including operations planning, military orders, troop leading procedures, small unit offensive and defensive operations. Includes field practical application. Prerequisite: Successful completion of MILS 101, MILS 102, MILS 201 and MILS 202 is required to enroll in MILS 301.

MILS 302  Leadership and Ethics  credit: 3 hours.
Principles of leadership including management practices and their relationship to leadership, problem solving, decision making, human behavior and motivation, superior-subordinate relations, and leadership problems in the military environment. Includes field practical application.

MILS 312  Leadership Laboratory  credit: 0 hours.
Advanced level practical application of military skills and leadership with emphasis on the student's ability to direct and supervise others; includes advanced land navigation, advanced first aid, platoon and company drill and ceremonies, and advanced communications procedures. Field trip required. May be repeated. Approved for S/U grading only.

MILS 314  Leadership Laboratory  credit: 0 hours.
Continuation of MILS 312 to include small unit tactics and patrolling techniques. Field trip required. Approved for S/U grading only. May be repeated.

**MILS 322  Leadership Laboratory**  credit: 0 hours.
Unique opportunity for advanced course students to fully plan, execute, and supervise the military training and activities of other military science students. Emphasis is on leadership, organizing and managing activities, decision making, and effective instructional techniques. Field trip required. Approved for S/U grading only. May be repeated.

**MILS 324  Leadership Laboratory**  credit: 0 hours.
Continuation of MILS 322. Field trip required. Approved for S/U grading only. May be repeated.

**MILS 325  Independent Study**  credit: 1 OR 2 hours.
Supervised reading and research in a selected area of Military Science. May be repeated to a maximum of 2 hours.

**MILS 341  Leadership and Management**  credit: 3 hours.
Fundamentals of military law including Law of Land Welfare, the application of federal law to the military, and the military justice system. Examines ethics, values, and professional standards through case studies. Includes introductory instruction on training management. Prerequisite: Successful completion of MILS 301 and MILS 302 is required to enroll in MILS 341.

**MILS 342  Officership**  credit: 3 hours.
Basic examination of all military management systems: personnel, supply, logistics, training, maintenance, finance, and administration. Includes instruction on military administrative skills - written and verbal communications, meeting management, and briefing techniques. Discusses motivation and counseling techniques. Basic instruction on Army environmental protection policies. Prerequisite: Successful completion of MILS 341 required to enroll in MILS 342.
Molecular and Integrative Physiology

Molecular and Integrative Physiology
Head of Department: Byron W. Kemper
Department Office: 524 Burrill Hall, 407 South Goodwin, Urbana
Phone: 333-1735
www.life.uiuc.edu/physiology/home.html

MIP 590  **Individual Topics**  credit: 1 TO 8 hours.
For graduate students wishing to study individual problems or topics not assigned in other courses. Prerequisite: Approval of department.

MIP 595  **Seminars in Physiology**  credit: 0 TO 1 hours.
Advanced seminars on current topics of interest in physiology. Approved for S/U grading only. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

MIP 599  **Thesis Research**  credit: 0 TO 16 hours.
Research may be conducted under supervision of the thesis advisor in the following areas: (a) cellular and molecular physiology; (b) comparative physiology; (c) mammalian physiology; (d) human physiology; (e) endocrinology; (f) neurophysiology; (g) radiobiology; and (h) environmental and stress physiology. Approved for S/U grading only. May be repeated.
**Media Studies**

College of Media
Interim Director: Clifford Christians
Department Office: 228 Gregory Hall, 810 South Wright Street, Urbana
Phone: 333-1549
www.media.illinois.edu/icr/bs_mediastudies.html

**MS 100  Intro to Popular TV & Movies  credit: 3 hours.**

The goal of this course is for students to begin to develop a critical understanding of the role of popular movies and television in their own lives and in U.S. culture. The course looks at issues of the relationship of media to social violence, gender identities, sexual identities, adolescents, minority cultures, and the role of the U.S. media globally. It also considers some of the major media genres that characterize U.S. popular television and movies.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

**MS 101  Intro to the Media  credit: 3 hours.**

Introduces students to core issues in communication, ranging from the role of language in human history to political questions posed by electronic and digital technologies. Exploring key contemporary problems through timely readings, students learn and write about how the media affect everyday life. Prerequisite: Freshman or sophomore standing.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

**MS 166  Media Literacy  credit: 3 hours.**

Develops students' ability and skills to analyze, assess, and critically evaluate media images, words, sounds, and representations that comprise mass culture, and to understand the media's roles in the contemporary world. As part of their learning in the course, students prepare their own media, use logs and evaluate their exposure to media and advertising. Prerequisite: Freshman or sophomore standing.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**MS 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.**

May be repeated to a maximum of 12 hours in separate semesters, if topics vary.

**MS 201  Info Technology and Orgs  credit: 3 hours.**

Same as LIS 201. See LIS 201.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**MS 202  Social Aspects Info Systems  credit: 3 hours.**

Same as INFO 202 and LIS 202. See INFO 202.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**MS 250  Latina/os on the Bronze Screen  credit: 3 hours.**

Same as LLS 250. See LLS 250.

**MS 264  Economics of the Media  credit: 4 hours.**

An introduction to the political economy of the media in the U.S. The purpose of the class is to acquaint students with a core understanding of how the media system operates, and with what effects, in a capitalist society. The course examines the role of advertising, public relations, corporate concentration, and government regulation upon journalism, entertainment, culture, and participatory democracy. The class also examines issues such as the Internet, globalization, and public broadcasting.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

**MS 317  History of Communication  credit: 3 hours.**
Presents the nature and development of communication systems; history of communication media; history of journalism, advertising, and broadcasting; and communications in the modern world.

**MS 320  Popular Culture  credit: 3 hours.**
Examines the critical literature on mass media entertainment; reviews significant contemporary issues and develops perspectives for understanding popular culture.

**MS 321  Film Culture  credit: 3 hours.**
Introduces students to key issues of, major theoretical approaches to, and current debates about the cultural function of films. Course addresses theories of spectatorship, the politics of pleasure, the culture of entertainment, and the cinematic construction of race, class, and gender.

This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

**MS 322  Politics and the Media  credit: 3 hours.**
Same as CMN 325 and PS 312. See PS 312.

**MS 326  New Media, Culture & Society  credit: 3 hours.**
Digital media is an immensely pervasive and powerful form of communication, one that despite its quick rise has yet to reach most of the world's population. This large lecture-based survey course for undergraduates will trace the history and formation of personal computing and the Internet, the development of virtual communities and virtual worlds, evolving forms of digital representation and communication, digital visual cultures, features of new media industries, and the rise of participatory media. Evaluation and assessment based on written exams, quizzes, class discussion in section, and practice-based assignments using new media technologies such as wikis, blogs, games, and digital video. Lectures will be held in an ITS classroom, and course material will be supported by small ITS-supported discussion sections. Emphasis on mastering key concepts of digital media theory and history, and critical discussion of distinctive features of digital media objects.

**MS 331  Media and Democracy  credit: 3 hours.**
Studies the philosophical bases of the functions and the responsibilities of mass communications.

**MS 351  Social Aspects of Media  credit: 3 hours.**
Explores media structures in relation to cultural content and social functions; examines problems of life and society as treated in mass-produced communications. Same as SOC 351.

**MS 352  Attitude Theory and Change  credit: 3 hours.**
Same as PSYC 352 and SOC 300. See PSYC 352.

**MS 356  Sex & Gender in Popular Media  credit: 3 hours.**
Examines the notion that the mass media influence our development as gendered individuals, looking at those who argue for and against this notion. Considers different forms of feminist theory applied to the study of mass media, the history and scholarly criticisms of the media and their portrayal of women, and feminist attempts to create alternatives to mainstream media images. Throughout the course, considers representation of minorities in the dominant media and examines newly created alternative representations. Same as GWS 356.

This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

**MS 361  US Broadcasting and Telecom  credit: 3 hours.**
Examines the history and principal issues of American broadcasting and the electronic media; the context of prior forms of mass communication and ideas about purposes and terms of control; the important social, economic, political, and cultural questions bearing on AM and FM radio, commercial television, public broadcasting, cable and new forms of electronic communication; issues in programming and service content; and basic legal and regulatory matters.

**MS 365  Asian American Media and Film  credit: 3 hours.**
Same as AAS 365 and CINE 365. See AAS 365.

**MS 375  Latina/o Media in the US  credit: 3 hours.**
Examines the portrayal and participation of Latinas and Latinos in the U.S. media using a variety of interdisciplinary approaches. Addresses historical and political movements that have been critical to Latina/Latino print, broadcast, and electronic communication within the broader context of cultural diversity. Same as LLS 375.

**MS 377  Global Communications  credit: 3 hours.**
Introduces students to the multiple dimensions of cross-national and comparative communications. Specific topics will vary according to instructor's focus, but may include human dimensions of global communication, intercultural communication, media impact, structure and processes of institutional communication (i.e. propaganda, diplomacy).

**MS 389  International Communications**  credit: 3 hours.
Provides an interdisciplinary approach to international communications; its structure and content; the role of international communications in conflict and conflict resolution; the semantics of international communication; the technical and economic aspects of international mass communications; and government-industry relations in communications. Same as PS 389.

**MS 391  Special Topics**  credit: 0 TO 3 hours.
Presents special projects, research, and independent reading in communications for students capable of individual work under the guidance of a faculty advisor. May be repeated in the same or in multiple semesters, if topics vary. Prerequisite: Major in the College of Communications or consent of College.

**MS 395  Honors Research Seminar**  credit: 3 hours.
An honors research seminar open to qualified Media Studies' majors, and to other advanced students in the College of Communications. The seminar has two primary goals: (a) to introduce students to alternative research approaches used in the scholarly study of mass communication; and (b) to enable students to employ one or more of these methodological approaches in producing an independent research project on a topic of their own choosing. The seminar meets as a group only for the first several weeks of the term, to discuss different research methodologies used in mass communication research and to present topics to the class; and for the last two weeks of the term, to present completed projects to the larger group. Otherwise students meet regularly with instructor (and any other advisors they may have chosen from among the media studies faculty) to discuss and provide evidence of progress of their independent research papers. Prerequisite: At least two courses in Media Studies.

**MS 408  Cultural Analysis of Media**  credit: 3 OR 4 hours.
Study of theories and methods for analyzing the cultural significance and influence of the content of film and television media; detailed application to one or two particular dimensions of the relationship of screen media to culture (applications vary from term to term and are chosen to highlight current issues in cultural analysis of media). Students are required to view a limited number of films and television programs outside of class. 3 undergraduate hours. 4 graduate hours.

**MS 410  Media Ethics**  credit: 3 OR 4 hours.
Surveys the major ethical problems in news, advertising, publications and entertainment media; includes case studies and moral reasoning on confidentiality, privacy, conflicts of interest, deception, violence, and pornography. 3 undergraduate hours. 4 graduate hours.

**MS 419  Russian & East European Film**  credit: 3 OR 4 hours.
Same as CINE 419 and SLAV 419. See SLAV 419.

**MS 423  Language Acquisition**  credit: 3 OR 4 hours.
Same as LING 423 and PSYC 423. See PSYC 423.

**MS 425  Intro to Psycholinguistics**  credit: 3 OR 4 hours.
Same as LING 425. See LING 425.

**MS 432  Commodifying Difference**  credit: 3 OR 4 hours.
Same as AAS 435, AFRO 435, GWS 435, and LLS 435. See LLS 435.

**MS 460  Politics of Popular Culture**  credit: 3 OR 4 hours.
Same as AIS 461. See AIS 461.

**MS 462  Telecom Management**  credit: 3 OR 4 hours.
Examines problems and issues in telecommunications management; the role of management in operation of broadcasting, cable, and telecommunications industries; forces shaping products and services in commercial and non-profit media, i.e., technology, markets, revenues, programming, and regulation; planning, accountability, and social responsibility. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of department.

**MS 466  Film as Business**  credit: 3 OR 4 hours.
Studies the filmed entertainment industry; the economic structures and policies of the production, distribution, and exhibition sectors; the nature of ownership patterns, investment, competition, and trade practices; filmed entertainment as a commodity in an international market system. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of department.

**MS 468  Telecom Law and Policy**  credit: 3 OR 4 hours.
Studies the histories, assumptions, and consequences of major legislative, regulatory, and judicial decisions in American broadcasting and telecommunications; social, cultural and economic background of federal communications law and regulation; administrative agency (FCC) practice and constraints; various regulatory and policy issues including fiduciary licensing, fairness doctrine, cable, public broadcasting, telematics, deregulation, and statutory revision process. 3 undergraduate hours. 4 graduate hours.

**MS 470  Mind, Culture and Society  credit: 3 OR 4 hours.**
Same as ANTH 470 and LING 470. See ANTH 470.

**MS 491  Literacy in the Info Age  credit: 3 OR 4 hours.**
Same as LIS 491. See LIS 491.

**MS 495  Internship Seminar  credit: 0 TO 1 hours.**
Seminar based on internship experience. Offered for College of Media students who complete an approved internship. 0 to 1 undergraduate hours. 0 graduate hours. Approved for S/U grading only. May be repeated in the same term to a maximum of 2 undergraduate hours or 0 graduate hours. May be repeated in separate terms to a maximum of 3 undergraduate hours or 0 graduate hours. Prerequisite: Consent of instructor.
MSE 101  Materials in Today's World  credit: 3 hours.
Introduces the field of materials science in a format suitable for non-engineering students. Materials and their properties are examined in the context of their use in everyday objects including sports equipment, automobiles, aircraft, display screens, compact disc players, hip replacements, etc. The role materials have played and will continue to play in shaping society will be discussed. Examples and demonstrations will be the major component in this course. Intended as an elective for non-engineering students. May not be taken as a technical elective by students in the College of Engineering.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

MSE 182  Introduction to MatSE  credit: 3 hours.
Provides an overview of MatSE as a basis for understanding how structure/property/processing relationships are developed and used for different types of materials. Illustrates the role of materials in modern society by case studies of advances in new materials and processes. Laboratory/discussion periods will be devoted to demonstrations and experiments that illustrate the lectures. Design teams will analyze or synthesize objects that use materials creatively.

MSE 183  Freshman Materials Laboratory  credit: 1 hours.
A team-based laboratory developing concepts initially introduced in MSE 182. Practical descriptions of materials concepts, literature research, experimental design, concept validation, teamwork and presentation of results are emphasized, fostering early extension of experience in MatSE. Prerequisite: MSE 182.

MSE 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated to a maximum of 5 hours. May be repeated in the same term.

MSE 201  Phases and Phase Relations  credit: 3 hours.
Provides the basis for understanding microstructure. Treats in quantitative terms and at some depth the concept of phases (crystalline and non-crystalline structures) and the relationships between phases (phase diagrams). Describes commercial practices for producing desired microscopic phase configurations and macroscopic shapes (processing). Credit is not given for both MSE 201 and MSE 280. Prerequisite: CHEM 104, MATH 241, MSE 182, and PHYS 212.

MSE 206  Mechanics for MatSE  credit: 4 hours.
Topics from statics, mechanics of materials, and fluid mechanics pertinent to the fields of materials science and engineering: force resultants, stresses and strains produced in elastic bodies, microscopic effects of different loading states (tension, compression, torsion, and bending) on deformable bodies, beam stresses and deflections, introduction to three-dimensional stresses and strains, stress and strain-rate relationships for Newtonian and non-Newtonian fluids, conservation equations (control volume analysis) for fluid flow, Reynolds number, and slow inertial and turbulent flows. Tailored for students with interests in materials science and engineering. Same as TAM 206. Credit is not given for both MSE 206 and either TAM 251 or TAM 335. Prerequisite: Credit or concurrent registration in MSE 201.

MSE 280  Engineering Materials  credit: 3 hours.
Introduction to the materials science and engineering of ceramics, electronic materials, metals and polymers. Bonding; crystallography; imperfections; processing and properties of semiconductors, polymers, metals, ceramics and composites; phase diagrams. Case studies will be used to exemplify the lecture material. Credit is not given for both MSE 280 and any of CEE 300, ME 330, MSE 201. Prerequisite: CHEM 102; credit or registration in PHYS 214.

MSE 304  Electronic Properties of Mats  credit: 3 hours.
Study of the electronic structure and bonding of materials, electrical conduction in metals and semiconductors, and dielectric and magnetic properties of solids. Credit is not given for both MSE 304 and PHYS 460. (PHYS 460 may be substituted for MSE 304 as part of the MatSE degree requirements.) Prerequisite: PHYS 214.

MSE 307  Materials Laboratory I  credit: 3 hours.
Experiments using optical and scanning electron microscopy and various thermal and thermodynamic measuring techniques. Introduction to use of laboratory test instruments. MSE 307 and MSE 308 are approved for General Education credit only as a
sequence. Both courses must be completed to receive Advanced Composition credit. Prerequisite: Completion of campus Composition I requirement; credit or concurrent registration in IE 300, MSE 401, and MSE 406.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

MSE 308 Materials Laboratory II credit: 3 hours.
Experiments characterizing mechanical, transport, and magnetic-electric properties of materials and the use of optical and scanning electron microscopy and infrared spectroscopy. MSE 307 and MSE 308 are approved for General Education credit only as a sequence. Both courses must be completed to receive Advanced Composition credit. Prerequisite: MSE 307; credit or concurrent registration in MSE 304 and MSE 405.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

MSE 395 Materials Design credit: 1 hour.
Design of various engineering devices, objects, or systems. Projects directed toward the development of materials-based solutions to problems originating from student, faculty, and industrial suggestions will be team-based and faculty guided. Solutions are to be based on the knowledge, skills, and design experience acquired in earlier course work and incorporate engineering standards and realistic constraints including most of such factors as economic, environmental, sustainability, manufacturability, ethical, health and safety, social, and political concerns. Prerequisite: One of MSE 422, MSE 441, MSE 453, MSE 460, MSE 462, MSE 470.

MSE 397 Independent Study credit: 1 TO 4 hours.
Individual study of any topic in materials science and engineering selected by the student and conducted under the supervision of a member of the faculty. May be repeated. Prerequisite: Consent of instructor.

MSE 398 Special Topics credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in materials science and engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

MSE 401 Thermodynamics of Materials credit: 4 hours.
Examines basic thermodynamic principles including energy, entropy, and free energy; describes the macroscopic properties of hard and soft materials systems, such as equilibrium states, phases, and phase transitions. Pays particular attention to the application of phase diagrams. Introduces the statistical interpretation of thermodynamics on the atomistic level. Same as CHEM 484. Credit is not given for both MSE 401 and any of CHEM 442, CHEM 444, PHYS 427. Credit is not given toward a MatSE graduate degree. Prerequisite: CHEM 104 and PHYS 212.

MSE 402 Kinetic Processes in Materials credit: 3 hours.
Studies kinetics of chemical reactions; rate equations, reaction mechanisms; transport processes; diffusion equations, atomic and molecular diffusion. Phase transformations; nucleation, crystallization, displacive, spinodal decomposition. Examines surface and interface phenomena; sintering, grain growth, recovery and recrystallization. Credit is not given toward a MatSE graduate degree. Prerequisite: MSE 201 and MSE 401.

MSE 403 Synthesis of Materials credit: 3 hours.
Studies fundamentals of the synthesis of materials. Examines principles of synthesis; processes, approaches, synthetic methodology and probes; methodologies in materials synthesis; polymerization, sol-gel processes, liquid and vapor phase synthesis, materials coupling reactions, and precursor-derived, radiation-induced and asymmetric synthesis. Credit is not given toward a MatSE graduate degree. Prerequisite: MSE 201; credit or concurrent registration in MSE 401.

MSE 405 Microstructure Determination credit: 3 hours.
Study of the fundamentals and applications of various forms of microscopy and diffraction for characterization of physical microstructure of materials and of various forms of spectroscopy for characterization of chemical microstructure. Prerequisite: PHYS 214, CHEM 104, and MSE 201.

MSE 406 Thermal-Mech Behavior of Matls credit: 3 hours.
Studies fundamentals of elastic, viscoelastic and plastic deformation of materials, elementary theory of statics and dynamics of dislocations; examines strengthening mechanisms and behavior of composites; fracture and fatigue behavior; fundamentals of thermal behavior: heat capacity, thermal expansion and conductivity; effects of thermal stress. Credit is not given for both MSE 406 and either ME 430 or TAM 424. Credit is not given toward a MatSE graduate degree. Prerequisite: MSE 206; credit or concurrent registration in MSE 401.

MSE 420 Ceramic Materials & Properties credit: 3 hours.
Basic principles and understanding of ceramic materials and properties, emphasizing structure-property relations. Gives a fundamental appreciation of the development, use, and control of the properties of a wide variety of ceramic materials from a physico-chemical point of view.

MSE 421  Ceramic Processing  credit: 3 OR 4 hours.
Basic principles and understanding of microstructure development and processing of ceramic materials, with an emphasis on structure-property-processing relationships. A variety of processing methodologies and their effects on microstructural development are considered. Examples of several ceramic components will be illustrated and discussed within this context. 3 undergraduate hours. 3 or 4 graduate hours. To receive the additional 1 graduate hour credit, a term paper is required. Prerequisite: MSE 420.

MSE 422  Electrical Ceramics  credit: 3 hours.
Presents the study of electrical ceramics, from insulators to conductors, and magnetic and optical materials; the role of the processing cycle and microstructure development on the design and performance of electrical components; discussion of capacitors, resistors, and inductors; structure-property relations for pyro-, piezo-, and ferroelectric materials; emphasis on perovskite and spinel based structures; coverage of varistors, thermistors, transducers, actuators, memory elements, multilayered components, and their applications. A design project is required. Prerequisite: MSE 420.

MSE 423  Ceramic Processing Laboratory  credit: 3 hours.
Experiments and demonstrations involving a wide range of modern ceramic processing methods will be conducted to develop fundamental understanding of the relationships between raw materials, processing methods, microstructural development, and physical properties. The lab emphasizes the underlying physics and chemistry of processing, as well as designing processing routes to achieve desired material properties. Technical reports will be required. Prerequisite: MSE 421.

MSE 440  Mechanical Behavior of Metals  credit: 3 hours.
Advanced presentation of the mechanical behavior of solids; examines crystal plasticity, dislocations, point defects and grain boundaries, creep and fatigue behavior, fracture. Prerequisite: MSE 406.

MSE 441  Metals Processing  credit: 3 hours.
Discussion of melt, mechanical, thermal, powder, and surface processing of metals. Extraction of metals, joining of metals, metal composites, and metal recycling are also reviewed. The relationships between the processing of metals, the microstructures that are produced, and the behavior of metal components are emphasized. Prerequisite: MSE 406.

MSE 442  Metals Laboratory  credit: 3 hours.
Advanced metallurgy laboratory. Effects of heat treatment; mechanical testing, oxidation and corrosion; metallography of selected alloys. Prerequisite: MSE 308, MSE 440, and MSE 441.

MSE 443  Design of Engineering Alloys  credit: 3 hours.
Examines the application of science and engineering principles to the design, selection, and performance of engineering alloys. Studies alloy classes, design, effect of alloying elements, relation to processing variables, and structure-property relationships; design project. Prerequisite: MSE 402 and MSE 441.

MSE 444  Welding and Joining Processes  credit: 0 TO 4 hours.
Same as CEE 400. See CEE 400.

MSE 445  Corrosion of Metals  credit: 3 OR 4 hours.
Examines engineering characteristics of plastics; viscoelasticity, viscosity, yield, and fracture; reinforced polymers; processing; environmental considerations; applicability of technical data sheets; design (project); current advances. Prerequisite: MSE 450.
**MSE 455 Polymer Physics** credit: 3 hours.
Techniques and applications of polymer crystal structure and morphology observation; x-ray, electron, light, and neutron scattering and diffraction; light and electron microscopy. Morphology-processing property relationships of crystalline polymers, blends, and copolymers; liquid, plastic, and condensate crystals; deformation mechanisms and orientation characterization; relaxations and transitions; crystallization theory. Prerequisite: MSE 450.

**MSE 456 Mechanics of Composites** credit: 3 hours.
Same as AE 427 and TAM 427. See TAM 428.

**MSE 457 Polymer Chemistry** credit: 3 OR 4 hours.
A comprehensive overview and examination of the methods used to synthesize macromolecules. Both descriptive and mechanistic organic chemistry, as it relates to polymer synthesis, are discussed. Same as CHEM 480. 3 undergraduate hours. 3 or 4 graduate hours.

**MSE 458 Polymer Physical Chemistry** credit: 3 OR 4 hours.
An intermediate level introduction to the fundamental physical chemistry of polymer systems. Focus is on equilibrium conformation, structure, properties and phase transitions of polymer solutions, dense melts, liquid crystals, mixtures, block copolymers, surfaces and interfaces, and electronic polymers. Same as CHEM 482. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One of CHEM 444, CHBE 321, MSE 401, PHYS 427.

**MSE 460 Electronic Materials I** credit: 3 hours.
Introduces the materials science, engineering, and processing of semiconductors. The structure and chemistry of semiconductors are related to the electronic and optical properties. Includes how semiconductors are produced and how to control processing to achieve desired materials properties; how to design and produce novel materials to obtain superior performance from electronic devices. Prerequisite: ECE 440.

**MSE 461 Electronic Materials II** credit: 3 hours.
Introduces the materials science, engineering, and processing of microlithographic materials, conductors, and dielectrics for electronic applications. Makes use of the concepts developed in materials science to understand why certain materials make acceptable contacts and dielectrics while others do not. Demonstrates how manufacturing problems can be overcome with careful materials design and processing. Examines some of the processing techniques commonly used in microelectronic circuit manufacture during metallization, dielectric formation, and lithography. Prerequisite: ECE 440; MATH 285; MSE 304 or PHYS 460.

**MSE 462 Electronic Materials Lab** credit: 3 hours.
Introduces the fabrication, analysis, and properties of thin film materials through a combination of lectures and experiments. Covers both the principles and practice of (i) deposition of thin film materials by vacuum evaporation, sputtering and plasma assisted processes; (ii) modification of properties by thermal reaction, surface treatment, etc.; (iii) characterization of key properties including electrical conductivity, optical properties, and stress. Emphasizes methods to optimize the film microstructure and engineering properties via growth techniques. Prerequisite: Credit or concurrent registration in MSE 460.

**MSE 470 Design and Use of Biomaterials** credit: 3 hours.
Provides an introduction to the characterization and use of biomaterials in medical applications. Presents concepts of biocompatibility in terms of structure and properties of materials and interactions between materials and proteins, cells, and tissue. Addresses issues related to the design of biomaterials. Gives the opportunity to design biomaterials to meet specific medical needs. Lectures are augmented with clinical presentations. Prerequisite: Credit or concurrent registration in both MCB 252 and MSE 403 (or CHEM 232).

**MSE 472 Biomaterials Laboratory** credit: 3 hours.
Experiments cover topics in chemistry and physics of biomaterials, biocompatibility of materials, tissue regeneration, rheology of biomaterials and tissues, structural studies of biomaterials, and controlled release of small molecules and drugs. Laboratory techniques include protein purification, cytotoxicity testing, tissue culture, mechanical testing, microscopy, and X-ray diffraction. Same as BIOE 473. Prerequisite: MSE 470.

**MSE 473 Biomolecular Materials Science** credit: 3 hours.
An emphasis on fundamental, unifying principles in biomolecular materials science. Major classes of materials considered include nucleic acids, proteins, lipids, and sugars. Specific and non-specific interactions which govern biomolecular behavior in a wide range of contexts (e.g., self-assembly, cell adhesion) are presented. The relation of our present state of knowledge to extant empirical evidence is emphasized and integrated with discussions of experimental characterization and manipulation techniques in biotechnology. A case study term project involving application of course content and expository research into current literature is required.
An overview of the design and synthesis of polymeric biomaterials and nanobiomaterials for their applications in drug and gene delivery. Part (1) fundamental biopolymer synthesis: functional group protection and de-protection; bioconjugation; protein pegylation and design and synthesis of natural and synthetic non-degradable and degradable polymers, hydrogels, bio-inspired materials, and stimuli responsive biomaterials. Part (2) preparation of nanomedicines for drug and gene delivery: nanofabritation of micelles, nanoparticles, protein conjugates, drug conjugates, nanocapsules, and polymeric vesicles; in-vitro and in-vivo small-molecule, gene, and protein delivery. The impact of the chemical structures of biopolymers on the stability, biocompatibility, toxicity, and in-vitro and in-vivo efficacy is emphasized; the clinical translation of the resulting nanomedicines in drug delivery is stressed. Prerequisite: CHEM 236 or MSE 457; MCB 450.

MSE 480 Surfaces and Colloids credit: 3 OR 4 hours.
Introduction to the chemistry and physics of surfaces and interfaces, with emphasis on behavior in liquid media. Four main areas are treated: (1) surface composition; (2) surface and interfacial forces; (3) colloidal stability and flocculation; (4) amphiphilic molecules. Same as CHEM 488. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: MSE 401.

MSE 481 Electron Microscopy credit: 3 OR 4 hours.
Theory and application of transmission electron microscopy and diffraction with emphasis on thin crystals; electron optics, interference phenomena, interpretation of images and diffraction patterns, specimen preparation, etc. 3 undergraduate hours. 4 graduate hours. Prerequisite: MSE 405.

MSE 484 Composite Materials credit: 3 OR 4 hours.
Introduction to metal and ceramic matrix composites, with an emphasis on understanding the interrelationships between processing, microstructure, and properties. The basis for selecting these systems for different engineering applications is considered. 3 undergraduate hours. 3 or 4 graduate hours. To receive 4 graduate hours credit, a comprehensive term paper is required.

MSE 485 Atomic Scale Simulations credit: 3 OR 4 hours.
Fundamental techniques of Monte Carlo and Molecular Dynamics are used in (primarily classical) simulations to understand and predict properties of microscopic systems in materials science, physics, biology, and chemistry. Numerical algorithms, connections between simulation results and real properties of materials (structural or thermodynamic), as well as statistical and systematic error estimation using real simulation programs are emphasized. A simulation project composed of scientific research, algorithm development, and presentation is required. Same as CSE 485 and PHYS 466. 3 undergraduate hours. 4 graduate hours. Prerequisite: One of CHEM 444, CHBE 321, MSE 401, ME 404, PHYS 427; C or C++, or Fortran programming experience.

MSE 486 Engineering Material Selection credit: 3 hours.
Comparison and contrast of the mechanical, chemical, and thermal behavior of different classes of materials (metals, ceramics, polymers, and composites). Trade-offs in selecting materials for specific applications are considered and exemplified by case studies. 3 undergraduate hours. Credit is not given to MatSE majors. Credit is not given for both MSE 486 and either MSE 586 or NPRE 431. Prerequisite: MSE 206 or TAM 251.

MSE 488 Optical Materials credit: 3 OR 4 hours.
Overview of the optical properties of materials of current and potential technological importance and application to devices. Review of appropriate optics fundamentals based on Maxwell's equations. Liquid crystals for displays; photopolymers for holographic data storage; electro-optic materials for high speed light modulators; electroluminescent materials for light emitting diodes. Application of optics, materials and chemistry in design of practical devices. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: MATH 285 and PHYS 214.

MSE 492 Lab Safety Fundamentals credit: 1 hours.
Presents key aspects of laboratory setups, operating procedures and emergency preparedness measures necessary for the experimentalist at UIUC, and in his/her future career. Same as CHEM 494. Approved for S/U grading only. Credit earned does not count toward M.S. or Ph.D. degree in MatSE.

MSE 497 Independent Study credit: 1 TO 4 hours.
Individual study of any topic in materials science and engineering under the supervision of a member of the faculty. May be repeated to a maximum of 4 hours. Prerequisite: Consent of instructor.

MSE 498 Special Topics credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in materials science and engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

MSE 499 Senior Thesis credit: 1 TO 5 hours.
Individual research in an area of materials science and engineering under the supervision of members of the staff. Results of research may be used for a senior (undergraduate) thesis. 1 to 5 undergraduate hours. No graduate credit. May be repeated to a maximum of
6 hours. A minimum total credit of 3 undergraduate hours is required. Prerequisite: Grade point average of 3.0 and consent of instructor.

MSE 500  **Statistical Thermodynamics of Materials**  credit: 4 hours.
The atomistic concepts of statistical thermodynamics and their relationship to classical phenomenological thermodynamics. Application of the methods of statistical thermodynamics and statistical mechanics to describe the structure, phase behavior, and properties of both hard and soft materials. Prerequisite: One of CHEM 444, CHBE 321, ME 404, MSE 401, PHYS 427.

MSE 501  **Kinetic Processes in Materials**  credit: 4 hours.
Examines the fundamentals of rate processes in materials, both from a phenomenological and an atomistic point of view, with special emphasis on the kinetics of transformations and the transport of matter in solids. Prerequisite: MSE 500 or PHYS 560.

MSE 520  **Crystal Physics of Materials**  credit: 4 hours.
Concepts of structure-property relationships, point and space group symmetries, application of Neumann's principle, crystalline anisotropy, and the limiting symmetry groups. Influence of symmetry on first, second, third, and fourth ranked polar and axial tensor properties. Properties covered include: dielectric, piezoelectric, elastic, magnetic, thermal and electrical conductivity, galvanomagnetic, thermoelectric, optic, and electro-optic. Prerequisite: MSE 405.

MSE 522  **Ceramic Dielectrics**  credit: 3 OR 4 hours.
Review of fundamental properties of vector fields; consideration of the reaction of insulating solids to external electric fields in terms of dielectric theory; the properties of ceramic dielectrics including treatment of ferroelectrics in terms of present theory; correlation of the piezoelectric properties of ferroelectric crystals and ceramics with the crystal structure, microstructure, and the ferroelectric properties.

MSE 529  **Seminar in Ceramics**  credit: 0 TO 1 hours.
Seminar on current research in ceramic science and engineering; includes presentations by visiting lecturers, staff, and students. Approved for S/U grading only. May be repeated. A maximum of 2 hours of MSE 529, MSE 559, and MSE 590 may count toward the MatSE M.S. degree; likewise 4 hours for the MatSE Ph.D. degree.

MSE 540  **Advanced Mechanical Behavior**  credit: 4 hours.
Point, line, and surface defects in metals; configuration, thermodynamics, and motion; quantitative description of single dislocation properties; interactions among defects. For students in metallurgy, ceramics, physics, and other solid state sciences. Prerequisite: MATH 285 and MSE 406.

MSE 542  **Solidification Processing**  credit: 4 hours.
Same as ME 550. See ME 550.

MSE 559  **Soft Materials Seminar**  credit: 0 TO 1 hours.
Seminar on current research in the science and engineering of soft materials; includes presentations by visiting lecturers, staff, and students. Approved for S/U grading only. May be repeated. A maximum of 2 hours of MSE 529, MSE 559 and MSE 590 may count toward the MatSE M.S. degree; likewise 4 hours for the MatSE Ph.D. degree.

MSE 564  **Vapor Phase Thin Film Growth**  credit: 4 hours.
A description of atomic level processes occurring during vapor phase film growth. Quantitative consideration of growth mechanisms and microstructure evolution of films based on experimental results from atomic level probes, modeling and simulation. Prerequisite: MSE 500; MSE 501; PHYS 460 or PHYS 560. Recommended: MSE 582 or CHBE 553.

MSE 580  **Diffraction Physics of Materials**  credit: 4 hours.
A quantitative treatment of the physical basis of X-ray, electron, and neutron diffraction and their instrumentation and relationship to material's structural characterization. Discussion of their applications in materials science and condensed matter physics including structure of condensed matter, defects, phase transitions, disorder, surfaces, and interfaces. Same as PHYS 566. Prerequisite: MSE 405 or PHYS 436.

MSE 581  **Advanced Electron Microscopy**  credit: 4 hours.
The theory of electron microscopy techniques and their practice in relationship to materials structure characterization and microanalysis. Topics include physics of electron microscopes, kinematic and dynamic electron diffraction theory, defect image contrast, high resolution electron microscopy, electron probe formation, STEM and inelastic scattering and microanalysis. Microscope experience is included through laboratory demonstrations and project assignments. Prerequisite: MSE 405 and MSE 481.

MSE 582  **Surface Physics**  credit: 4 hours.
Introduction to theory and experiment of atomic behavior on crystal surfaces; thermodynamics of surfaces; surface energy; diffraction and structure; gas-solid collisions; Brownian motion, diffusion, and evaporation; electron and ion emission, tunneling; Van der Waals forces; theory of chemical interactions; kinetics and statistics of adsorption. Same as PHYS 564. Prerequisite: MSE 501 or PHYS 560.
MSE 583  **Dynamics of Complex Fluids**  credit: 3 OR 4 hours.
A modern, microscopic statistical treatment of the structure and dynamics of polymers, colloids, gels and other soft materials. Fundamental connections between molecular architecture, intermolecular forces, collective fluid structure and time-dependent phenomena are developed. Theoretical concepts and experimental behavior are presented in an integrated manner. Specific topics covered include Brownian motion and Langevin equation theory, viscoelasticity and diffusion in colloidal suspensions, gels, and glasses, and the dynamics of polymer solutions and melts. Prerequisite: One of CHBE 321, CHEM 444, MSE 401, PHYS 427.

MSE 584  **Point and Line Defects**  credit: 4 hours.
Formation and interactions of point and line defects in solids including metals, semiconductors, dielectrics, and ionic conductors. Theoretical treatments include thermal equilibrium and non-equilibrium conditions. Applications include impurity diffusion, ion irradiation, dislocation generation and motion, ionic conductivity, and deep level electronic defects. Prerequisite: MSE 401 or MSE 501; PHYS 460 or PHYS 560.

MSE 586  **Selection of Materials**  credit: 4 hours.
A broad comparative study of the mechanical, thermal, and chemical properties of all classes of materials (metals, polymers, ceramics, and composites); material selection maps, performance indexing and computer-aided material selection tools; mechanical and chemical failure of materials and preventive methods; material selection project. Credit is not given for M.S. and Ph.D. thesis students with a MatSE B.S. degree. Credit is not given for both MSE 586 and either MSE 486 or NPRE 431. Prerequisite: AE 321 or TAM 251.

MSE 590  **Research Seminars**  credit: 0 TO 1 hours.
Discussions and lectures on current research under the direction of individual staff members. Approved for both letter and S/U grading. May be repeated. A maximum of 2 hours of MSE 529, MSE 559, and MSE 590 may count toward the MatSE M.S. degree; likewise 4 hours for the MatSE Ph.D. degree. Prerequisite: Consent of instructor.

MSE 591  **Laboratory Investigations**  credit: 0 TO 8 hours.
Special investigations in materials providing an opportunity for instruction in experimental methods of research. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours. For non-thesis M.S. students only. Prerequisite: Consent of instructor.

MSE 595  **Materials Colloquium**  credit: 0 TO 1 hours.
Presentation of (i) cutting-edge materials research given by visiting lectures from academia as well as national and industrial research laboratories and (ii) some of the current research conducted in the Department. Students meet with visitors for questions and discussion. Required of all graduate students in the department during their first two years. Approved for both letter and S/U grading. May be repeated. A maximum of 2 hours of MSE 590 may count toward the MatSE M.S. degree; likewise 4 hours for the MatSE Ph.D. degree.

MSE 597  **Independent Study**  credit: 1 TO 4 hours.
Individual study of any topic in materials science and engineering under the supervision of a member of the faculty. May be repeated to a maximum of 4 hours. Prerequisite: Consent of instructor.

MSE 598  **Special Topics**  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in materials science and engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

MSE 599  **Thesis Research**  credit: 0 TO 16 hours.
Individual research in specialized problems under the supervision of members of the staff. Results of research may be used for graduate thesis. Approved for S/U grading only. May be repeated.
Medical Scholars Program

MSP 600  **MSP: Pre-M1 Completion**  credit: 0 TO 20 hours.
MSP 601  **MSP: Post-M1 Completion**  credit: 0 TO 20 hours.
MSP 620  **Nursing Holding Sections**  credit: 0 hours.
Music

Director of School: Karl Kramer
School Office: 3053 Music Building, 1114 West Nevada, Urbana
Phone: 244-2670
www.music.uiuc.edu

MUS 090  Seminar in Music Education  credit: 0 hours.
Lecture and performance series in music education. Selected topics and performances focus on trends in music and music education. Approved for both letter and S/U grading. Prerequisite: Music education majors or consent of instructor.

MUS 101  Music Theory and Practice I  credit: 2 hours.
Fundamental theory including terminology and notation; visual analysis of music elements, procedures, and forms; written applications in short projects. Credit toward a degree may be received for MUS 101 or MUS 103, but not both. Concurrent registration in MUS 107 is required. Prerequisite: Placement by examination.

MUS 102  Music Theory and Practice II  credit: 2 hours.
Continuation of MUS 101. Credit toward a degree may be received for MUS 102 or MUS 104, but not both. Concurrent registration in MUS 108 is required. Prerequisite: MUS 101 or placement by examination.

MUS 103  Rudiments of Music Theory I  credit: 3 hours.
Introduces non-music majors to basic terminology, notation, concepts of tonality, and musical forms. Credit toward a degree may be received for MUS 103 or MUS 101, but not both; non-music majors only.

MUS 104  Rudiments of Music Theory II  credit: 3 hours.
Continuation of MUS 103. Includes study of modulation, chromatic harmony, formal structures, and an introduction to twentieth-century composition. Credit toward a degree may be received for MUS 104 or MUS 102, but not for both. Prerequisite: MUS 103 or placement by examination; non-music majors only.

MUS 106  Beginning Composition  credit: 2 hours.
Music composition in its beginning stages; practice in phrase, section, and short form construction, analysis, and writing; instruction in range, characteristics, and idiom of instruments and voices. May be repeated to a maximum of 6 hours. Prerequisite: Consent of instructor on the basis of a student portfolio of composition submitted to the composition-theory faculty and accepted after evaluation.

MUS 107  Aural Skills I  credit: 2 hours.
Beginning aural skills training in the areas of intervals, scales, chords, rhythm, melody, and harmony. Concurrent registration in MUS 101 is required.

MUS 108  Aural Skills II  credit: 2 hours.
Continuation of aural skills training from MUS 107. Development of performance, notational, and listening skills in the areas of rhythm, melody, harmony, counterpoint, and formal aspects of musical structure; emphasizes tonal pitch structures. Concurrent registration in MUS 102 is required. Prerequisite: MUS 101 and MUS 107, or placement by examination.

MUS 110  Introd Art Mus: Intl Perspect  credit: 2 hours.
Surveys the history of European and American art music in an international context; examines major artistic styles, representative composers and works, and their relationship to pertinent non-western musical traditions and philosophies; reviews fundamental music concepts; strengthens aural analytical skills; familiarizes students with the music library, and research and writing techniques. Prerequisite: First year standing in music or consent of instructor.

MUS 120  English Diction  credit: 1 hours.
Phonetics applied to English song literature; individual clinical analysis and practice. To be taken with MUS 181. Prerequisite: Freshman standing in voice or consent of instructor.

MUS 121  Italian Diction  credit: 1 hours.
Phonetics applied to Italian song literature; class and individual clinical analysis and practice. To be taken with MUS 181. Prerequisite: Freshman standing in voice or consent of instructor.

MUS 122  German Diction  credit: 1 hours.
German pronunciation applied to German vocal literature; class and individual clinical analysis and practice. To be taken with MUS 181. Prerequisite: Sophomore standing in voice or consent of instructor.

**MUS 123 French Diction**  credit: 1 hours.
French pronunciation applied to French vocal literature; class and individual clinical analysis and practice. To be taken with MUS 181. Prerequisite: At least one semester of French or equivalent required, sophomore standing in voice, or consent of instructor.

**MUS 130 Intro to the Art of Music**  credit: 3 hours.
Provides non-music majors with basic listening skills, the ability to discuss music intelligently, and an acquaintance with many types of music. Prerequisite: For non-music majors only. Students must register for one quiz and one lecture section.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**MUS 131 Masterworks of Western Music**  credit: 3 hours.
Studies in detail approximately half a dozen works of different eras and types with regard to form, style, performance practice, and historical significance. Prerequisite: For non-music majors only.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**MUS 132 The Varieties of Music**  credit: 3 hours.
Study of a major musical type such as the symphony, concerto, chamber music, opera, jazz, or popular music. Prerequisite: For non-music majors only.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**MUS 133 Introduction to World Music**  credit: 3 hours.
A survey of various musical traditions from different regions and peoples of the world.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**MUS 134 The Eras of Music**  credit: 3 hours.
Examines major works and composers representative of an era in the history of music such as the baroque, the classical, or the romantic. Prerequisite: For non-music majors only.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**MUS 140 String Instrument Class**  credit: 2 hours.
Class instruction to enable students to demonstrate proper technique and a characteristic sound on two bowed string instruments (violin or viola, and cello or double bass) in order to teach, via demonstration, beginning string students toward their maximum technical and musical development. May be repeated to a maximum of 4 hours. Prerequisite: For music education majors only, with two semesters required for music education string majors.

**MUS 142 Intermed String Instruments**  credit: 2 hours.
Class instruction in the intermediate levels of playing and teaching the violin, viola, cello, and double bass. Prerequisite: For music majors only.

**MUS 144 Supp WW Inst: Clarinet**  credit: 0.5 hours.
Class instruction in the fundamentals of playing and teaching the clarinet. Prerequisite: Oriented for woodwind majors in the BME instrumental concentration.

**MUS 145 Supp WW Inst: Clar-nonWWmajors**  credit: 2 hours.
Class instruction in the fundamentals of playing and teaching the clarinet. Prerequisite: Oriented for non-woodwind majors in the BME instrumental concentration.

**MUS 146 Supp WW Inst: Flute**  credit: 0.5 hours.
Class instruction in the fundamentals of playing and teaching the flute. Prerequisite: Oriented for music majors in the BME instrumental concentration.

**MUS 147 Supp WW Inst: Oboe**  credit: 0.5 hours.
Class instruction in the fundamentals of playing and teaching the oboe. Prerequisite: Oriented for music majors in the BME instrumental concentration.

**MUS 148**  **Supp WW Inst: Saxophone**  credit: 0.5 hours.
Class instruction in the fundamentals of playing and teaching the saxophone. Prerequisite: Oriented for music majors in the BME instrumental concentration.

**MUS 149**  **Supp WW Inst: Bassoon**  credit: 0.5 hours.
Class instruction in the fundamentals of playing and teaching the bassoon. Prerequisite: Oriented for music majors in the BME instrumental concentration.

**MUS 151**  **Supp Brass Inst: Trumpet**  credit: 0.5 hours.
Class instruction in the fundamentals of playing and teaching the trumpet. Prerequisite: Oriented for brass majors in the BME instrumental concentration.

**MUS 152**  **Supp Brass Inst: Tpt-nonBr maj**  credit: 2 hours.
Class instruction in the fundamentals of playing and teaching the trumpet. Prerequisite: Oriented for non-brass majors in the BME instrumental concentration.

**MUS 153**  **Supp Brass Inst: Horn**  credit: 0.5 hours.
Class instruction in the fundamentals of playing and teaching the horn. Prerequisite: Oriented for music majors in the BME instrumental concentration.

**MUS 154**  **Supp Brass Inst: Trombone**  credit: 0.5 hours.
Class instruction in the fundamentals of playing and teaching the trombone. Prerequisite: Oriented for music majors in the BME instrumental concentration.

**MUS 155**  **Supp Brass Inst: Euph/Tuba**  credit: 0.5 hours.
Class instruction in the fundamentals of playing and teaching the euphonium and tuba. Prerequisite: Oriented for music majors in the BME instrumental concentration.

**MUS 158**  **Supp Percussion Instruments**  credit: 2 hours.
Class instruction in the fundamentals of playing and teaching percussion instruments. Prerequisite: Oriented for music majors in the BME instrumental concentration.

**MUS 160**  **Jazz Piano Improvisation I**  credit: 2 hours.
Study of jazz theory, harmony, and improvisational techniques at the piano; includes experience in solo and ensemble situations, and a historical survey of jazz development from about 1910. Prerequisite: Completion of MUS 174 or equivalent; MUS 202 and MUS 208 or equivalent; consent of instructor.

**MUS 161**  **Jazz Piano Improvisation II**  credit: 2 hours.
Continuation of MUS 160. Study of jazz theory, harmony, and improvisational techniques at the piano; includes experience in solo and ensemble situations, and a historical survey of jazz development from about 1910. Prerequisite: MUS 160 or consent of instructor.

**MUS 162**  **Intro to Jazz Saxophone**  credit: 2 hours.
Basic principles of jazz saxophone styles and jazz saxophone techniques. Includes demonstrations by the instructor, listening sessions, and performance assignments by the students in the presence of the class and instructor. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

**MUS 163**  **Jazz Keyboard Studies I**  credit: 2 hours.
Prepares the student (through class participation) to perform one jazz standard on a functional level. Includes basic technique, chord voicing, comping, and lead sheet realization with functional fluency in all keys. Furnishes the student with class instruction on piano, focusing on jazz and improvisational idioms. An in-depth study of overall instrument technique, eminent styles, and other performance practices relevant to jazz piano and improvisation. Prerequisite: MUS 172 and MUS 173, or consent of the instructor.

**MUS 164**  **Jazz Keyboard Studies II**  credit: 2 hours.
Continuation of materials presented in MUS 163, focusing on improvisational idioms of jazz piano. Prepares the student (through class participation) to perform three jazz standards on a functional level. Emphasizes the blues form, minor II-V-I chord progressions with both hands, and introduces all major modes. Includes technique, chord voicing concepts, comping, and lead sheet realization with mid-level fluency in all keys. A continuing in-depth study of overall instrument technique, eminent styles, and other performance practices relevant to jazz piano and improvisation. Prerequisite: MUS 163, or placement exam, or consent of the instructor.

**MUS 165**  **Applied Jazz Instruction**  credit: 1 TO 4 hours.
Instruction at the undergraduate level in voice or instruments normally associated with the jazz idiom. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Successful performance audition for the jazz faculty.

MUS 166 Class Jazz Improvisation I  credit: 2 hours.
Examines the dynamics of group improvisation at a fundamental level. Techniques of individual melodic development, group melodic development, and group contouring will be discussed and practiced. Requires preparation of group improvisations using the blues, a 32-bar song form, and a modal form, as well as class presentations and group demonstrations of basic group improvisational techniques.

MUS 167 Class Jazz Improvisation II credit: 2 hours.
Continues to examine the dynamics of group improvisation as presented in MUS 166. Discussion and practical application of techniques of individual melodic development, group melodic development, and group contouring. Requires preparation of group improvisations using blues, 32-bar song form, and free group improvising forms, as well as class presentations and group demonstrations of more advanced improvisational techniques. Prerequisite: MUS 166.

MUS 169 Unit One Sem Instruct in Music credit: 0 TO 2 hours.
Experimental seminar courses to introduce non-music majors to contemporary ideas in music. May be repeated to a maximum of 4 hours. Approved for both letter and S/U grading. Prerequisite: For non-music majors only.

MUS 170 Grp Instr Pno NonMus Maj I credit: 2 hours.
Beginning piano for non-music majors. Includes fundamentals of reading, technique, and creative activities; study and performance of simple solo and ensemble repertoire.

MUS 171 Grp Instr Pno NonMus Maj II credit: 2 hours.
Continuation of basic skills presented in MUS 170. Elementary piano for non-music majors. Includes reading, technique, creative activities; simple solo and ensemble repertoire. Prerequisite: MUS 170 or equivalent.

MUS 172 Grp Instr Pno for Mus Major I credit: 2 hours.
Group instruction in beginning piano for music majors whose principal performing medium is voice, or an orchestral or band instrument. Study of simple piano literature, development of skills in technique, sight reading, harmonization, transposition, improvisation, and analysis. This is the first of two courses that addresses the keyboard competency policy for non-piano majors.

MUS 173 Grp Instr Pno for Mus Maj II credit: 2 hours.
Continuation of skills introduced in MUS 172. Group instruction in elementary piano for music majors whose principal performing medium is voice, or an orchestral or band instrument. Sight-reading, harmonization, transposition, and improvisation. Easy solos from the main historical periods with appropriate technical development; introduction to piano ensemble literature. This is the second of two courses that addresses the keyboard competency policy for non-piano majors. Prerequisite: MUS 101 and MUS 107; MUS 172 or equivalent; or consent of instructor.

MUS 174 Grp Instr Pno for Mus Maj III credit: 2 hours.
Continuation of skills introduced in MUS 173. Group instruction in intermediate piano for music majors whose principal performing medium is voice, or an orchestral or band instrument. Study of intermediate level solos and ensemble compositions, harmonization with chromatic chords, sight reading, transposition of four-voice works, improvisation, and learning of patriotic songs. Prerequisite: MUS 102 and MUS 108; MUS 173 or equivalent; or consent of instructor.

MUS 175 Grp Instr Pno for Mus Maj IV credit: 2 hours.
Continuation of skills introduced in MUS 174. Group instruction in moderately advanced piano for music majors whose principal performing medium is voice, or an orchestral or band instrument. Emphasis on solos, ensemble compositions, technical development, and more advanced work in sight reading, harmonization, improvisation, transposition, and aural skills. Prerequisite: MUS 201 and MUS 207; MUS 174 or equivalent; or consent of instructor.

MUS 178 Guitar credit: 1 TO 4 hours.
Instruction in guitar at the undergraduate level, predominantly classical. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 179 Harpsichord credit: 1 TO 4 hours.
Instruction in harpsichord at the undergraduate level. May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 180 Piano credit: 1 TO 4 hours.
Instruction in piano at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.
MUS 181 Voice credit: 1 TO 3 hours.
Instruction in voice at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 182 Organ credit: 1 TO 4 hours.
Instruction in organ at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 183 Violin credit: 1 TO 4 hours.
Instruction in violin at the undergraduate level. Music majors must register concurrently in MUS 250. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 184 Viola credit: 1 TO 4 hours.
Instruction in viola at the undergraduate level. Music majors must register concurrently in MUS 250. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 185 Cello credit: 1 TO 4 hours.
Instruction in cello at the undergraduate level. Music majors must register concurrently in MUS 250. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 186 Double Bass credit: 1 TO 4 hours.
Instruction in double bass at the undergraduate level. Music majors must register concurrently in MUS 250. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 187 Harp credit: 1 TO 4 hours.
Instruction in harp at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 188 Flute credit: 1 TO 4 hours.
Instruction in flute at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 189 Clarinet credit: 1 TO 4 hours.
Instruction in clarinet at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 190 Oboe credit: 1 TO 4 hours.
Instruction in oboe at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 191 Bassoon credit: 1 TO 4 hours.
Instruction in bassoon at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 192 Saxophone credit: 1 TO 4 hours.
Instruction in saxophone at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 193 Trumpet credit: 1 TO 4 hours.
Instruction in trumpet at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 194 Horn credit: 1 TO 4 hours.
Instruction in horn at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 195 Trombone credit: 1 TO 4 hours.
Instruction in trombone at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 196  **Euphonium**  credit: 1 TO 4 hours.
Instruction in euphonium at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 197  **Tuba**  credit: 1 TO 4 hours.
Instruction in tuba at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 198  **Percussion**  credit: 1 TO 4 hours.
Instruction in percussion at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

MUS 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.  May be repeated to a maximum of 12 hours.

MUS 201  **Music Theory and Practice III**  credit: 2 hours.
Continuation of MUS 102. Gradually increased emphasis on contrapuntal techniques, dissonance in tonal music, and musical form. Concurrent registration in MUS 207 is required. Prerequisite: MUS 102 and MUS 108, or placement by examination.

MUS 202  **Music Theory and Practice IV**  credit: 2 hours.
Continuation of MUS 201. Study of twentieth century compositional methods. Concurrent registration in MUS 208 is required. Prerequisite: MUS 201 and MUS 207, or placement by examination.

MUS 206  **Intermediate Composition**  credit: 2 hours.
Music composition at the secondary stages; analysis and writing of shorter musical forms. May be repeated to a maximum of 6 hours. prerequisite: MUS 106 and consent of composition-theory faculty.

MUS 207  **Aural Skills III**  credit: 2 hours.
Continuation of MUS 108. Emphasis on extensions of tonality by means of changing tonal centers and altered chords. Concurrent registration in MUS 201 is required. Prerequisite: MUS 102 and MUS 108, or placement by examination.

MUS 208  **Aural Skills IV**  credit: 1 hours.
Continuation of MUS 207. Emphasis on atonal pitch structures and complex rhythmic organization. Concurrent registration in MUS 202 is required. Prerequisite: MUS 201 and MUS 207, or placement by examination.

MUS 220  **Jazz Rhythm Section Seminar I**  credit: 2 hours.
Examines, through instructor and student demonstrations, jazz rhythm section techniques, styles, skills, and requirements for the various rhythm section instruments, with the goal of improving rhythm section communication and creativity. Examination of several distinct jazz idioms. Student rhythm sections will perform weekly in class for student and instructor critique and evaluation. Prerequisite: Consent of instructor.

MUS 221  **Jazz Rhythm Section Seminar II**  credit: 2 hours.
Continuation of MUS 220. Examines, through instructor and student demonstrations, advanced jazz rhythm section techniques, styles, skills, and requirements for the various rhythm styles with regard to improving rhythm section communication and creativity in those styles. Examination of free jazz idioms. Student rhythm sections will perform weekly in class for student and instructor critique and evaluation. Invited guest artists will demonstrate advanced rhythm section performance techniques. Prerequisite: MUS 220 or consent of instructor.

MUS 223  **Jazz Keyboard Studies III**  credit: 2 hours.
An in-depth continuation of the material presented in MUS 164, focusing on improvisational idioms in jazz piano. Prepares the student, through class participation, to perform on a functional level in Phrygian and Lydian modes, jazz melodic minor scales, and harmonizations generated by each mode with two-handed voicings. Emphasizes blues in all keys, more advanced II-V-I chord progressions, and introduces jazz melodic minor modes. Includes technique, chord voicing, comping, and lead sheet realization with fluency in all keys. Prerequisite: MUS 164, or placement exam and consent of the instructor.

MUS 224  **Jazz Keyboard Studies IV**  credit: 2 hours.
A continuation of materials presented in MUS 223, focusing on jazz piano improvisational idioms. Prepares the student, through class participation, to perform on a functional level in Lydian #2, Mixolydian #4, Phrygian #6, and harmonizations generated by each mode with two-hand voicings. Emphasizes learning of two jazz standards and one modal tune, one transcription and digital analysis, and introduces all diminished, auxiliary diminished, and augmented scales. Includes technique, chord voicing, comping, and lead sheet
realization with fluency in all keys. Emphasizes overall instrument technique, eminent styles, and other performance practices relevant to jazz piano and improvisation. Prerequisite: MUS 223, or placement exam, or consent of the instructor.

MUS 240  **Introd to Music Education**  credit: 2 hours.
Introduces basic issues and principles of music education and teaching with an emphasis on philosophy and the identification of the exceptional child and learning disabilities. Includes 16 hours of early field experience in the teaching of music. Prerequisite: Music education majors or consent of instructor.

MUS 241  **Music for Elementary Teachers**  credit: 2 hours.
Introduces elementary education students to materials and methods for music teaching in kindergarten through grade six. Classes include repertoire for various grades along with suggestions for their use, discussion of methods and techniques commonly used in elementary school music programs, and practice for students in simple music teaching skills. Topics include singing and vocal development, concept development, classroom instruments, correlating music with other subjects, and individualized learning in music. Students will attend at least one music concert performed for elementary school children. Prerequisite: For non-music majors; music and music education majors may not receive credit for this course.

MUS 242  **Elements of Conducting**  credit: 2 hours.
Fundamentals of conducting, score preparation, and transcription for choral and instrumental ensembles. Prerequisite: Music majors or consent of instructor.

MUS 243  **Introd Tech Based Mus Instruct**  credit: 2 hours.
Hands-on introduction to the development, planning, and application of computer, MIDI, multimedia, and electronic communication technologies in music instruction. Instructional implications of the use of technology in the classroom will also be explored. Prerequisite: Music education majors or consent of instructor.

MUS 250  **University Orchestra**  credit: 1 hours.
May be repeated. Prerequisite: Consent of instructor.

MUS 252  **Ethnomusicology Perf Ensembles**  credit: 1 hours.
Instruction and experience in the performance of various non-Western and vernacular music traditions such as African mbira, Andean panpipes, North American string band, European traditional music, etc. Topics vary according to available instructors. May be repeated in the same or subsequent terms. Prerequisite: Consent of instructor.

MUS 253  **Collegium Musicum**  credit: 1 hours.
Performs medieval, renaissance, and baroque music; various small groups formed for the performance of sonatas and cantatas of Bach and Handel, wind serenades of Mozart, etc. Interested students may play on lute, harpsichord, and other instruments from the University's collection. May be repeated. Prerequisite: Consent of instructor.

MUS 254  **String Ensemble**  credit: 1 hours.
Participation in trios, quartets, quintets, etc., for the study of chamber music literature. May be repeated. Prerequisite: Consent of instructor.

MUS 255  **Woodwind Ensemble**  credit: 1 hours.
May be repeated. Prerequisite: Consent of instructor.

MUS 256  **Brass Ensemble**  credit: 1 hours.
Ensembles of mixed brasses in both small and large forms. May be repeated. Prerequisite: Consent of instructor.

MUS 257  **Percussion Ensemble**  credit: 1 hours.
May be repeated in the same term. Prerequisite: Consent of instructor.

MUS 258  **Piano Ensemble**  credit: 1 hours.
May be repeated. Prerequisite: Consent of instructor.

MUS 260  **Oratorio Society**  credit: 1 hours.
An advanced mixed-voice chorus open to students, faculty, and members of the community. Performance of oratorios and other major choral works in cooperation with the University Symphony Orchestra or Wind Symphony. May be repeated. Prerequisite: Consent of instructor.

MUS 261  **University Chorus**  credit: 1 hours.
A mixed-voice chorus for average and beginning singers open to students, faculty, and members of the community. Performance of cantatas and other choral works. May be repeated. Prerequisite: Consent of instructor.
MUS 262  **Women's Glee Club**  credit: 1 hours.
Practical experience in the rehearsal and public performance of choral music of various periods and styles. Open to all women students. May be repeated. Prerequisite: Consent of instructor.

MUS 263  **Men's Glee Club**  credit: 1 hours.
Practical experience in the rehearsal and public performance of choral music of various periods and styles. Open to all men students. May be repeated. Prerequisite: Consent of instructor.

MUS 264  **Concert Choir**  credit: 1 hours.
A highly advanced group of competent student singers. Practical experience in mixed-voice singing of accompanied and unaccompanied music of various periods and styles. May be repeated. Prerequisite: Consent of instructor.

MUS 265  **Opera**  credit: 1 hours.
Preparation and public performance of grand or light opera. Includes only singing and acting (students desiring experience in costuming, stage management, scenery, publicity, etc., should apply to the University Theatre Department, which cooperates in the opera productions). May be repeated. Prerequisite: Consent of instructor.

MUS 266  **Jazz Ensemble**  credit: 1 hours.
Ensembles of various sizes designed to acquaint proficient instrumentalists with jazz compositions, arrangements, and improvisational procedures, and to promote a high degree of stylistic and technical competence in performance. May be repeated. Prerequisite: Consent of instructor.

MUS 267  **Chamber Music**  credit: 1 hours.
Students will be assigned to chamber groups that will be coached on a weekly basis by members of the faculty. One public performance per term may be required. May be repeated. Prerequisite: Music majors or consent of instructor.

MUS 268  **Wind Symphony**  credit: 1 hours.
Maintains a complete large wind ensemble instrumentation for the study and performance of band/wind ensemble/chamber wind literature. Open to all students who have been accepted by audition, with assignments made according to proficiency and instrumentation. Completion of each course involves, in addition to the regular schedule of rehearsals, participation in public performances by the ensemble. May be repeated. Prerequisite: Consent of instructor.

MUS 269  **Symphonic Band I**  credit: 1 hours.
Maintains a complete symphonic band instrumentation for the study and performance of all types of band literature. Open to all students who have been accepted by audition, with assignments made according to proficiency and instrumentation. Completion of each course involves, in addition to the regular schedule of rehearsals, participation in public performances by the band. May be repeated. Prerequisite: Consent of instructor.

MUS 270  **Symphonic Band II**  credit: 1 hours.
Maintains a complete symphonic band instrumentation for the study and performance of all types of band literature. Open to all students who have been accepted by audition, with assignments made according to proficiency and instrumentation. Completion of each course involves, in addition to the regular schedule of rehearsals, participation in public performances by the band. May be repeated. Prerequisite: Consent of instructor.

MUS 271  **First Concert Band**  credit: 1 hours.
Maintains the instrumentation of the standard band, and serves as a training organization for the Symphonic Bands. The literature studied and performed is of the highest caliber and technical difficulty. Open to all students who have been accepted by audition, with assignments made according to proficiency and instrumentation. Completion of each course involves, in addition to the regular schedule of rehearsals, participation in public performances by the band. May be repeated. Prerequisite: Consent of instructor.

MUS 272  **Second Concert Band**  credit: 1 hours.
Training for the Symphonic Bands and the First Concert Band. The high quality band literature is technically less difficult than that of MUS 269, 270 and 271. Promotion contingent upon improvement and chair vacancies. Open to all students who have been accepted by audition, with assignments made according to proficiency and instrumentation. Completion of each course involves, in addition to the regular schedule of rehearsals, participation in public performances by the band. May be repeated. Prerequisite: Consent of instructor.

MUS 273  **Marching Band**  credit: 1 hours.
Prepares and performs music of the highest available quality in at least six shows per football season. Open to all students who have been accepted by audition, with assignments made according to proficiency and instrumentation. Completion of each course involves, in addition to the regular schedule of rehearsals, participation in public performances by the band. May be repeated. Prerequisite: Consent of instructor.

MUS 274  **Basketball Band**  credit: 1 hours.
Performs for home basketball games. Credit is given for spring term only. Open to all students who have been accepted by audition, with assignments made according to proficiency and instrumentation. Completion of each course involves, in addition to the regular schedule of rehearsals, participation in public performances by the band. May be repeated. Prerequisite: Band Division audition during early October, or consent of instructor.

MUS 275  Brass Band  credit: 1 hours.
Maintains a complete British Brass Band instrumentation for the study and performance of all types and styles of brass band literature. Open to all students who have been accepted by audition, with assignments made according to proficiency and instrumentation. Completion of each course involves, in addition to the regular schedule of rehearsals, participation in public performances by the bands. May be repeated. Prerequisite: Concurrent registration in MUS 268, MUS 269, MUS 270, MUS 271, or MUS 272, and consent of instructor.

MUS 276  Summer Band  credit: 1 hours.
Maintains the instrumentation of the standard band for the study and performance of all types of band literature. Open to all students who have been accepted by audition, with assignments made according to proficiency and instrumentation. Completion of each course involves, in addition to the regular schedule of rehearsals, participation in public performances by the band. May be repeated. Prerequisite: Consent of instructor.

MUS 299  Thesis/Adv UG Honors in Music  credit: 2 hours.
Special individual research projects. Required of seniors in the history of music and music theory curricula; open also to advanced undergraduates, including James Scholars, who have achieved university or college honors and who desire to do research in specialized areas of music, including performance. May be repeated to a maximum of 4 hours. Counts for advanced hours in LAS. Prerequisite: Senior standing in the history of music or music theory curricula, or consent of instructor.

MUS 313  The History of Music I  credit: 3 hours.
Survey of music and its development in Western civilization to about 1750. Emphasis on an acquaintance with representative musical works and style, and on understanding musical concepts in the light of their historical and general cultural context. Prerequisite: MUS 110 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

MUS 314  The History of Music II  credit: 3 hours.
Survey of the development of music as an art in Western civilization from about 1750 to the present. Emphasizes an acquaintance with formal and stylistic problems through the study of representative works and on understanding specific musical concepts in the light of their historical and general cultural context. Prerequisite: MUS 313 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

MUS 320  Pre-Student Tchng Experience  credit: 1 OR 2 hours.
Early field experience in teacher education, including a practicum of observation, teacher aide, and teaching experiences in music. Thirty-two hours of early field experience are required for each 1 hour of credit. May be repeated to a maximum of 4 hours, but only 2 hours may be applied toward the degree. Prerequisite: Music education majors or consent of instructor.

MUS 326  Practicum in Piano Teaching  credit: 2 hours.
Coordinates lesson planning for teaching pre-college piano pupils with extensive teaching experience; gives close examination to beginning and intermediate teaching literature.

MUS 330  Choral Lit and Conducting I  credit: 2 hours.
Laboratory course for review and development of conducting skills. Choral repertoire for secondary schools is developed through score analysis and preparation and laboratory conducting assignments. Prerequisite: MUS 242; concurrent registration in MUS 348 for music education majors; music education majors, or consent of instructor.

MUS 331  Choral Tch and Rehearsal Tch  credit: 2 hours.
Practicum course emphasizing teaching and rehearsal techniques, score preparation, and interpretation. Focuses on the integration of aural, vocal, keyboard, and conducting skills for the choral teacher/conductor. Prerequisite: MUS 330; music education majors, or consent of instructor.

MUS 332  Instrum Lit and Conducting I  credit: 3 hours.
Survey of concert and training literature for wind ensemble and band; refinement of conducting techniques and methods of teaching through study and performance of selected wind compositions and instructional materials appropriate for public school use. Prerequisite: MUS 242; music education majors, or consent of instructor.
MUS 333  **Instrum Lit and Conducting II**  credit: 3 hours.
Survey of concert and training literature for orchestra; continued development and refinement of conducting skills and methods of
teaching through detailed study and performance of selected compositions and instrumental materials appropriate for public school use.
Prerequisite: MUS 332; music education majors, or consent of instructor.

MUS 335  **Elem and Mid Sch Instrum Music**  credit: 2 hours.
Examines pedagogical and organizational techniques for teaching elementary and middle school instrumental music in a laboratory
school setting. Prerequisite: MUS 332; music education majors, or consent of instructor.

MUS 339  **Principls and Technqs in Mus Ed**  credit: 3 hours.
Comprehensive examination of interrelationships among the various segments of music education; the role of music education in the
total school program, elementary through secondary, with emphasis upon philosophy, learning theory, curriculum design, identification
of exceptional children and learning disabilities, administration, and current trends. Includes 20 hours of early field experience in the
teaching of music. Prerequisite: Senior standing in music education, or consent of instructor, plus 80 hours of early field experiences in
the teaching of music; completion of the Quantitative Reasoning I requirement.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MUS 342  **General Music K-12**  credit: 3 hours.
Provides a model of comprehensive musicianship in general music K-12. Considers musical and conceptual development of learners at
various ages. Includes lesson planning and assessment strategies for classroom music instruction including listening, performing, and
composing experiences. Prerequisite: MUS 240.

MUS 343  **Tchg Mus in the Middle School**  credit: 3 hours.
Detailed consideration of the music program in the middle school; special emphasis on instructional material and methods of
instruction. Prerequisite: Music education majors or consent of instructor.

MUS 344  **Teaching of Instrumental Music**  credit: 3 hours.
Techniques of teaching, publicizing, organizing, and administering the total school instrument music program, elementary through
secondary school. Prerequisite: MUS 332; senior standing in music education; completion of campus Composition I general education
requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

MUS 345  **Mus Methods in Early Childhood**  credit: 2 hours.
Methods for teaching music to children ages 2 through 8 in preschool and early elementary school settings. Includes some observation
in preschool settings. Focuses on understanding the role of music in early childhood, developing musical concepts, and organizing
appropriate learning experiences.

MUS 346  **Teaching of Choral Music**  credit: 3 hours.
Methods course providing detailed consideration of organization, development, and maintenance of comprehensive choral program in
the secondary schools. Prerequisite: Music education majors or consent of instructor.

MUS 348  **Rep for Scndry Sch Chor Prog**  credit: 1 OR 2 hours.
Exploration of literature appropriate for public school music groups through reading and rehearsal demonstrations. May be repeated to
a maximum of 3 hours. Prerequisite: MUS 242; music education majors, or consent of instructor.

MUS 352  **String Ped for Pub School Tchr**  credit: 3 hours.
Organization, materials, and techniques for the teaching of strings in the public school string class. Prerequisite: String major, music
education major, or consent of instructor.

MUS 360  **Jazz Improv:Theory and Prac I**  credit: 2 hours.
Fundamentals of jazz improvisation, with an emphasis on aural recognition of jazz chord voicings, harmonic progressions, and scales.
Includes interactive software related to jazz improvisation ear-training. Application of melodic, harmonic, and rhythmic materials
with regard to improvisation. Prerequisite: MUS 102 and MUS 108, MUS 167 and MUS 224, or placement by exam with consent of
instructor.

MUS 361  **Jazz Improv:Theory and Prac II**  credit: 2 hours.
Continuation of MUS 360. Exploration of advanced harmonic procedures with an emphasis on aural recognition of advanced forms of
jazz harmonic structures, scales, chord qualities, and chord progressions. Additional emphasis on scales, chord/scale relationships,
and standard jazz harmonic forms such as blues, standard jazz tunes, and modal tunes. Prerequisite: MUS 360, or placement by exam with consent of instructor.

MUS 362  Jazz Arranging I  credit: 3 hours.
Fundamentals of jazz arranging with an introduction to techniques such as schematic design, score layout, analysis, voicing, section writing, and orchestration. Emphasis on arranging for rhythm section, along with part layout and forms, voicing techniques, and basic harmonic concepts. Three major written projects are required. Prerequisite: MUS 166, or placement by exam/portfolio with consent of instructor.

MUS 363  Jazz Arranging II  credit: 3 hours.
Advanced melodic, harmonic, and rhythmic arranging techniques as applied to jazz instrumentation. Emphasis on practice in analysis, voicing and orchestration techniques such as 4-way closed position double lead, 4-way closed-position drop-2 double lead, 4-way closed position drop-2, and 4-and 5-way closed position. Three major written projects are required. Prerequisite: MUS 362, or placement by exam/portfolio with consent of instructor.

MUS 364  Jazz Composition I  credit: 2 hours.
Examines the basic elements of jazz composition from melodic, harmonic, rhythmic, and tone color perspectives focusing on distinctive styles of jazz. Promotes a better understanding of various jazz compositional styles, jazz composers, creative elements and abilities, melody writing, harmonic systems, rhythmic compositional devices, and jazz reharmonization techniques. Prerequisite: MUS 224 and MUS 363.

MUS 365  Jazz Composition II  credit: 2 hours.
Examines advanced elements of jazz composition such as melody construction, harmonic devices, and rhythmic devices used in modern jazz compositions as a continuation and expansion of materials presented in MUS 364. Melodic and harmonic contouring, asymmetrical forms, advanced chromatic-modal construction, and creative practices will be discussed and practiced through written assignments and projects. Prerequisite: MUS 364, or consent of instructor upon approval of a portfolio of jazz compositions.

MUS 366  Jazz Improvisation Styles I  credit: 2 hours.
Survey of improvisational/jazz artists. Students write and present four papers over the course of the semester, accompanied by four transcriptions of four major improvisational/jazz artists representing four distinct improvisational/jazz styles. All presentations will be done in class. Prerequisite: Consent of instructor.

MUS 367  Jazz Improvisation Styles II  credit: 2 hours.
A continuation of the survey of improvisational/jazz artists at an advanced level. Students write and present four papers and associated recording transcriptions of four advanced improvisational/jazz artists representing four distinct and advanced improvisational/jazz styles. All presentations will be done in class. Prerequisite: MUS 368 or consent of instructor.

MUS 368  Counterpoint and Fugue  credit: 2 OR 3 hours.
Study of contrapuntal writing and analysis. 3 undergraduate hours. 2 graduate hours. Prerequisite: MUS 202 and MUS 208, or consent of instructor.

MUS 369  Schenkerian Anlys Tonal Mus  credit: 3 hours.
Studies analytical systems and their application to tonal music; includes a survey of theoretical works by important theorists from Rameau to Schenker. Emphasizes practical application of Schenkerian analysis. Prerequisite: MUS 202 and MUS 208, or consent of instructor.

MUS 370  Musical Acoustics  credit: 3 hours.
Theory and application of simple resonators, wave motion, resonances of strings and pipes; perception of loudness, pitch, and timbre; musical scales; and acoustics of rooms and musical instruments. Prerequisite: MATH 012 and MUS 101 or equivalent.

MUS 371  Music Formalization  credit: 3 hours.
Surveys the logical tools introduced in the theory and practice of musical composition by Xenakis, Hiller, and others; intended for musicians with no more than limited familiarity with mathematics. Prerequisite: MUS 202 and MUS 208, and consent of instructor.

MUS 372  Contemp Compos Techniques  credit: 2 hours.
Studies in specialized areas of composition for advanced undergraduates and graduates majoring in composition-theory. May be elected by others with consent of instructor. May be repeated. Prerequisite: MUS 106, MUS 202 and MUS 208, or consent of instructor.

MUS 373  Analytical Systems 20thC Mus  credit: 3 hours.
Study of various analytical techniques developed for music written in the twentieth century based on compositional procedures other than those derived from the common practice period. Prerequisite: MUS 202 and MUS 208, or consent of instructor.

MUS 374  Composition  credit: 3 hours.
Work in original composition including small and large forms. Students submit scores of their compositions to the composition faculty in order to obtain consent to register; consent is granted on the basis of the quality of the music the student has composed and the level of skill demonstrated in the work submitted. May be repeated to a maximum of 12 hours. Prerequisite: For undergraduates, MUS 206 and consent of composition faculty; for graduate students, consent of composition faculty.

MUS 407  Elect Music Techniques I  credit: 4 hours.
Introduces electro-acoustic music, including historical background, literature, techniques of notation and realization, and compositional application in the areas of musique concrete, classical electronic music, and voltage-controlled electronic music. Prerequisite: Junior standing in music, or consent of instructor.

MUS 408  Analysis of Musical Form  credit: 2 OR 3 hours.
Extensive study of the formal structure of representative musical compositions from various historical periods: (a) Renaissance and Baroque; (b) Viennese classical; (c) nineteenth century; (d) first half of twentieth century; and (e) since World War II. 3 undergraduate hours, 2 graduate hours. May be repeated to a maximum of 9 hours. Prerequisite: MUS 202 and MUS 208.

MUS 409  Elec Music Techniques II  credit: 2 hours.
Advanced study in the use of voltage-controlled synthesizers in music composition and study of compositional, technical, and performance considerations in combining electronics with traditional instruments and/or voices in music composition. Prerequisite: MUS 407 or placement by examination.

MUS 410  Ancient and Medieval Music  credit: 3 hours.
History of music to about 1400. Prerequisite: MUS 313 and MUS 314, or consent of instructor.

MUS 411  Music in the Renaissance  credit: 3 hours.
History of music from about 1400 to 1600. Prerequisite: MUS 313 and MUS 314, or consent of instructor.

MUS 412  Music of the 17th Century  credit: 3 hours.
History of music from about 1600 to 1700. Prerequisite: MUS 313 and MUS 314, or consent of instructor.

MUS 413  Music of the 18th Century  credit: 3 hours.
History of music from about 1700 to 1800. Prerequisite: MUS 313 and MUS 314, or consent of instructor.

MUS 414  Music of the 19th Century  credit: 3 hours.
History of music from about 1800 to 1900. Prerequisite: MUS 313 and MUS 314, or consent of instructor.

MUS 415  Music of the 20th Century  credit: 3 hours.
History of music from about 1900 to the present. Prerequisite: MUS 314 or consent of instructor.

MUS 416  Anthropology of Music  credit: 3 hours.
Introduction to the anthropological study of music, including the role of music in the world's societies and non-Western musical systems and cultures. Same as ANTH 416. Prerequisite: ANTH 103 or consent of instructor.

MUS 417  Area Studies Ethnomusicology  credit: 3 hours.
Seminar devoted to intensive study in the music of one specific people or geographical region. Same as ANTH 417. May be repeated to a maximum of 12 hours. Prerequisite: Senior standing in music or consent of instructor.

MUS 418  Natl Regn Studies Eur Mus Hist  credit: 3 hours.
Studies in the history of music of individual nations and regions of Europe. Each term is devoted to one area, such as Great Britain, Spain and Portugal, Russia, Scandinavia, or eastern Europe. May be repeated to a maximum of 6 hours. Prerequisite: Junior standing in music or consent of instructor.

MUS 420  The History of Opera  credit: 3 hours.
Surveys opera and related forms from the end of the 16th century to the present; studies representative works in some detail. Prerequisite: MUS 314 or consent of instructor.

MUS 421  The Music of America  credit: 3 hours.
Study of chamber, choral, and orchestral music written by American composers from about 1850 to the present; jazz and its offshoots; folk and popular music; and experimental music in America. May be repeated to a maximum of 6 hours. Prerequisite: Senior standing in music or consent of instructor.

MUS 425  Post-Tonal Pitch Organization  credit: 3 hours.
Compositional pitch organization techniques applied after the Common Practice/Tonal Period, including an in-depth study of set theory, serialism, and other important contributions. Requires analytical work and the writing of musical compositions. Prerequisite: MUS 202 and MUS 208.

**MUS 426 Orchestration** credit: 3 hours.
A thorough study of writing for all of the orchestral instruments in combinations ranging from solo to varying sizes of chamber ensembles and full orchestra. Includes analysis of musical examples and composing short works for various instrumental ensembles. Prerequisite: MUS 202 and MUS 208.

**MUS 430 Applied Music Pedagogy** credit: 2 hours.
Survey of techniques, practices, and materials for teaching piano to children from about ages five through ten (elementary level); observation of lessons and supervised student teaching experience. Required of piano performance majors. Prerequisite: Senior standing in music or consent of instructor.

**MUS 431 Piano Pedagogy I** credit: 2 hours.
Objectives, techniques, literature, and materials for teaching piano to children from about ages five through ten (elementary level); observation of lessons and supervised student teaching experience. Required of piano performance majors. Prerequisite: Senior standing in music or music education, or consent of instructor.

**MUS 432 Piano Pedagogy II** credit: 2 hours.
Objectives, techniques, literature, and materials for teaching the young pianist from about ages 11 through 18 (middle school to pre-college level); teaching the adult beginner; observation of lessons and supervised student teaching experience. Required of piano performance majors. Prerequisite: Senior standing in music or music education, or consent of instructor.

**MUS 435 Jazz Pedagogy I** credit: 2 hours.
Examines the pedagogical fundamentals of jazz improvisation and directing jazz ensembles. Discussion and preparation of jazz improvisation class outlines, jazz ensemble class outlines, daily exercises for teaching jazz improvisation, and jazz ensemble development, with resulting written outlines submitted for evaluation. Prerequisite: Consent of instructor.

**MUS 436 Jazz Pedagogy II** credit: 2 hours.
A continuation of materials presented in MUS 435. Examines advanced pedagogical aspects of jazz improvisation and directing jazz ensembles. Focus is on the development and organization of advanced jazz improvisation courses and advanced jazz ensemble direction. Discussion and preparation of class outlines and daily outlines for jazz improvisation and jazz ensemble courses. Detailed examination of advanced methods for teaching jazz improvisation and directing jazz ensembles at the university level, resulting in written outlines for advanced course development of jazz improvisation and jazz ensembles at the university level, which will be submitted for evaluation. Prerequisite: MUS 435.

**MUS 438 Contemp Trends El Mus Kod Orff** credit: 2 hours.
Investigation of Kodaly, Orff, and other approaches to elementary school music, including philosophy, pedagogy, musical materials, and applicability to North American teaching settings. Prerequisite: MUS 342, music education major, or consent of instructor.

**MUS 439 Music and the Special Learner** credit: 3 hours.
Introduction to the role of music in the education of the special learner, including the history and major issues of special education, consideration of characteristics of exceptional students, and development/adaptation of curricular and instructional approaches designed to guide the musical development of the special learner. Prerequisite: Graduate or upper-level undergraduate standing in music education, or consent of instructor.

**MUS 440 Marching Band Procedures** credit: 2 hours.
Detailed consideration of principles and procedures for preparing a marching band to participate in parades, ceremonials, and shows for sports events. Prerequisite: Junior standing in instrumental music education.

**MUS 441 Seminar in Instrumental Mus Ed** credit: 2 hours.
Intensive study of musical, acoustical, and educational concepts and principles related to the teaching of instrumental music in elementary and secondary schools. Prerequisite: Completion of student teaching, or graduate standing in music education.

**MUS 442 Band Arranging** credit: 2 hours.
Development of basic scoring and arranging skills for various small instrumental ensembles and marching band. Prerequisite: MUS 202 and MUS 208 or equivalent.

**MUS 443 Orchestral Repertory** credit: 1 hours.
Laboratory class designed for brass, woodwind, and percussion performance majors who wish to become more familiar with orchestral literature and a variety of interpretational orchestral techniques. Emphasis on individual and sectional parts of orchestral masterworks.
May be repeated to a maximum of 4 undergraduate hours and 4 graduate hours. A maximum of 6 hours of credit is cumulative within either the BM or MM degree, or a combination of the two. Prerequisite: Consent of instructor in consultation with the appropriate studio teacher.

MUS 445  **Tchg Techniques of Mus Theory**  credit: 2 hours.
Analysis and discussion of teaching materials, methods, texts, and pedagogical sequence, including an intensive survey of aural and theoretical skills covered during the first two years of collegiate study. Prerequisite: MUS 400 or consent of instructor.

MUS 446  **School/Commun Mus Theat Prod**  credit: 2 hours.
Problems and techniques involved with technical and artistic production of musicals in the middle school, senior high schools, and the community. Prerequisite: Advanced undergraduate or graduate standing in music education or performance curricula, or consent of instructor.

MUS 447  **Tech Based Music Instruction**  credit: 2 OR 4 hours.
Detailed study of the role of technology in music instruction. Students will evaluate hardware and software, build multimedia applications, explore music resources on the Internet, and work with MIDI technology. Course is geared to today's music educator who needs to adapt to a continually evolving instructional environment. Includes an in-depth analysis of the philosophical and instructional implications of technology. Prerequisite: MUS 243 or consent of instructor.

MUS 448  **Computer Music**  credit: 4 hours.
Representation of sound signals in a digital computer; methods for input and output of sounds to and from a computer; sound synthesis programs; synthesis of simple musical structures; use of graphics; processing of live sounds by computer; editing and retrieval; fidelity of computer-produced sounds; and hybrid analog/digital computers.

MUS 449  **Music in Early Childhood**  credit: 2 hours.
Detailed consideration of the music program in nursery schools, kindergarten, and the primary grades; topics include the nature of early musical responses, objectives, experience levels of the program, methods of teaching, and materials. Observation of music teaching at the UIUC Child Development Laboratory is included in the course work. Prerequisite: Senior or graduate standing in music, or consent of instructor.

MUS 450  **Advanced Ensemble Music**  credit: 1 hours.
Selected projects in the study and performance of ensemble literature, including the areas of operatic, instrumental, vocal-choral, and accompanying. May be repeated. Prerequisite: Consent of instructor.

MUS 451  **Basso Continuo**  credit: 2 hours.
Introduction to figured bass realization. Techniques of accompanying singers and instrumentalists from a figured bass. May be repeated. Prerequisite: Advanced standing in music as a piano, organ, harpsichord, or accompanying major, or consent of instructor.

MUS 452  **Special Topics in Harpsichord**  credit: 2 hours.
Practical and theoretical studies in historical tuning and temperament; early fingerings, harpsichord tutors (treatises), styles of figured bass improvisation, harpsichord literature, and other topics related to harpsichord performance. May be repeated to a maximum of 4 hours. Prerequisite: Consent of instructor.

MUS 453  **Special Topics in Organ**  credit: 2 hours.
Development of practical keyboard skills related primarily to the work of the church organist: transposition, score-reading, harmonization, modulation, hymn-playing, and solo and anthem accompaniment. May be repeated to a maximum of 4 hours. Prerequisite: Consent of instructor.

MUS 454  **Advanced Keyboard Skills I**  credit: 2 hours.
Comprehensive keyboard musicianship course for advanced pianists emphasizing the development of the following skills: sight reading, harmonization, transposition, improvisation, playing by ear, and vocal and instrumental score reading. Ensemble piano music is performed. This course addresses the keyboard competency policy for undergraduate piano performance majors. Prerequisite: MUS 180 (12 hours completed) or MUS 175; and MUS 202 and MUS 208 or equivalent; and consent of instructor.

MUS 455  **Advanced Keyboard Skills II**  credit: 2 hours.
Continuation of the topics introduced in MUS 454. Prerequisite: MUS 180 (12 hours completed) or MUS 175; MUS 202 and MUS 208 or equivalent; MUS 454 or equivalent; and consent of instructor.

MUS 456  **Adv Jazz Piano Improvisation**  credit: 2 hours.
Study of solo jazz piano improvisation on an advanced level. Includes practical experience in traditional, modern, and abstract solo performance, as well as theoretical, stylistic, and historical background. May be repeated to a maximum of 4 hours. Prerequisite: MUS 161 or equivalent.
MUS 457  **Organ History and Design**  credit: 2 hours.
Survey of the important national and historical styles of organ building and their relation to musical composition, performance practice, and modern organ design. Includes visits to regional organ installations chosen for their pertinent design features. Prerequisite: Consent of instructor.

MUS 460  **Improv:Theory and Practice III**  credit: 3 hours.
Practical application of melodic, harmonic, and rhythmic principles used in jazz improvisation. Practice in the use of jazz chord qualities and jazz cadences in improvising. Descriptions of basic improvisational sequences, modal improvising, symmetric/synthetic scale usage, symmetric chord usage, and approach-note techniques. Prerequisite: MUS 361, or placement by exam with consent of instructor.

MUS 461  **Improv: Theory and Practice IV**  credit: 3 hours.
Advanced application and examination of improvisational methods, device, and techniques. Study of advanced chord/scale relationships, modal harmonic concepts, harmonic analysis, patterns, and linear/vertical approaches to improvising, and various jazz song forms including advanced blues forms, asymmetrical standards, free improvisational forms, and advanced modal forms. Prerequisite: MUS 460 or placement by exam with consent of instructor.

MUS 466  **Applied Jazz Instruction**  credit: 1 TO 4 hours.
Instruction at the advanced undergraduate or graduate level in voice in instruments normally associated with the jazz idiom. (Summer session, 1 or 2 hours.) May be repeated to a maximum of 16 undergraduate hours or 20 graduate hours. Prerequisite: Successful performance audition for the jazz faculty.

MUS 468  **Opera Studio**  credit: 2 hours.
Acquaints the student with a variety of opera, operetta, and musical theater literature in contrasting styles and historical periods, culminating in a public performance of numerous opera scenes each semester. Develops skills as both a solo and ensemble performer. Introduces skills related to the field of operatic performance, including but not limited to stage movement, mind-body awareness, diction, acting, and improvisational techniques. Forms and integrates a performing operatic ensemble to serve as an outreach group that may perform in selected K-12 schools. Oriented for vocal performance, vocal music education and vocal accompanying/coaching majors; others by consent of instructor. Audition required for admission. 2 undergraduate hours. 2 graduate hours. (Summer session, 1 hour.) May be repeated to a maximum of 12 undergraduate hours or 8 graduate hours. Prerequisite: Consent of instructor.

MUS 469  **Opera Production I**  credit: 2 OR 3 hours.
Studies the problems of the lyric stage. Investigation of and practice with casting methods, program selection, production procedures, stage direction, coaching methods, and opera dramatics. 3 undergraduate hours. 2 graduate hours. May be repeated up to a maximum of 6 undergraduate hours or 4 graduate hours. Prerequisite: MUS 265 and MUS 481; consent of instructor.

MUS 470  **Opera Production II**  credit: 2 OR 3 hours.
Continuation of topics introduced in MUS 469. 3 undergraduate hours. 2 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 4 graduate hours. Prerequisite: MUS 469.

MUS 471  **Composer-Chor Workshop**  credit: 2 hours.
Same as DANC 464. See DANC 464.

MUS 474  **Vocal Repertoire I**  credit: 1 hours.
Study of the standard solo literature including solo excerpts from larger works, i.e., cantata, oratorio, and opera. Supplements the student's knowledge of the literature in his/her major field. Prerequisite: Junior standing in voice, or consent of instructor and concurrent registration in MUS 481.

MUS 475  **Vocal Repertoire II**  credit: 1 hours.
Continuation of the study of the standard solo literature including solo excerpts from larger works, i.e., cantata, oratorio, and opera. Supplements the student's knowledge of the literature in his/her major field. Prerequisite: Junior standing in voice, or consent of instructor and concurrent registration in MUS 481.

MUS 477  **Principles of Accompanying**  credit: 4 hours.
Principles of accompanying singers and instrumentalists. Practical experience in accompanying and facility in sight reading for keyboard performers. May be repeated. (Summer session, 2 undergraduate or graduate hours.) Prerequisite: Advanced undergraduate or graduate standing in music or music education, and consent of instructor.

MUS 478  **Guitar**  credit: 1 TO 4 hours.
Instruction in guitar at the advanced undergraduate and graduate levels, predominantly classical. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing...
or above. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 479 Harpsichord credit: 1 TO 4 hours.
Instruction in harpsichord at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing or above. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 480 Piano credit: 1 TO 4 hours.
Instruction in piano at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: For students in the Bachelor of Music program. Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 481 Voice credit: 1 TO 4 hours.
Instruction in voice at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 12 hours. 2 or 3 undergraduate hours, or 2 or 4 graduate hours. Prerequisite: Primarily for music majors; junior standing and above. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 482 Organ credit: 1 TO 4 hours.
Instruction in organ at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 483 Violin credit: 1 TO 4 hours.
Instruction in violin at the advanced undergraduate and graduate level. Music majors must register concurrently in MUS 250. 2 or 3 undergraduate hours. 2 or 4 graduate hours. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 12 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 484 Viola credit: 1 TO 4 hours.
Instruction in viola at the advanced undergraduate and graduate level. Music majors must register concurrently in MUS 250. 2 or 3 undergraduate hours. 2 or 4 graduate hours. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 12 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 485 Cello credit: 1 TO 4 hours.
Instruction in cello at the advanced undergraduate and graduate level. Music majors must register concurrently in MUS 250. 2 or 3 undergraduate hours. 2 or 4 graduate hours. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 12 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 486 Double Bass credit: 1 TO 4 hours.
Instruction in double bass at the advanced undergraduate and graduate level. Music majors must register concurrently in MUS 250. 2 or 3 undergraduate hours. 2 or 4 graduate hours. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 12 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 487 Harp credit: 1 TO 4 hours.
Instruction in harp at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 488 Flute credit: 1 TO 4 hours.
Instruction in flute at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 489 Clarinet credit: 1 TO 4 hours.
Instruction in clarinet at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 490  **Oboe**  credit: 1 TO 4 hours.
Instruction in oboe at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 491  **Bassoon**  credit: 1 TO 4 hours.
Instruction in bassoon at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 492  **Saxophone**  credit: 1 TO 4 hours.
Instruction in saxophone at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 493  **Trumpet**  credit: 1 TO 4 hours.
Instruction in cornet and trumpet at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 494  **Horn**  credit: 1 TO 4 hours.
Instruction in horn at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 495  **Trombone**  credit: 1 TO 4 hours.
Instruction in trombone at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 496  **Euphonium**  credit: 1 TO 4 hours.
Instruction in euphonium at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 497  **Tuba**  credit: 1 TO 4 hours.
Instruction in tuba at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 498  **Percussion**  credit: 1 TO 4 hours.
Instruction in percussion at the advanced undergraduate and graduate level. (Summer session, 1 or 2 undergraduate or graduate hours.) May be repeated to a maximum of 16 hours. Prerequisite: Primarily for music majors; junior standing. Passing of an audition is required prior to initial registration in any applied music course as approved by the faculty of the appropriate applied music division.

MUS 499  **Proseminar in Music**  credit: 1 TO 4 hours.
Special preparation in specialized fields of musicology, composition-theory, performance, and music education. May be repeated to a maximum of 8 hours; undergraduate students in open studies may repeat the course unlimited times with approval of the open studies advisor. Prerequisite: Senior or graduate standing in music or music education; consent of instructor.

MUS 503  **Computer-Assisted Composition**  credit: 4 hours.
Critical evaluation of the ways in which computers have been used to write music, followed by a detailed presentation of a program for computer-assisted composition. Prerequisite: MUS 403 and elementary knowledge of computer programming, or consent of instructor.

MUS 505  **Individ Topics in Music Theory**  credit: 2 TO 4 hours.
Studies in specialized areas of analysis, theory systems, and aesthetics for composition-theory majors. May be repeated to a maximum of 12 hours. Prerequisite: Graduate standing in music and consent of instructor.
MUS 506  **Composition**  credit: 2 TO 6 hours.
Advanced study of contrapuntal forms; study of contemporary melodic and harmonic practices; and original work in advanced composition. May be repeated to a maximum of 16 hours.

MUS 507  **Sem in Music Comp and Theory**  credit: 2 OR 4 hours.
Intensive study of selected topics in the fields of music composition and theory. May be repeated. Prerequisite: Graduate standing in music composition-theory, or consent of instructor.

MUS 510  **History of Music Theory**  credit: 4 hours.
The development of theoretical concepts from antiquity through the Renaissance; a study of selected theoretical treatises written before 1550. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in musicology or composition-theory, or consent of instructor.

MUS 511  **Fdns/Methods of Musicology I**  credit: 4 hours.
Introduction to the field for graduate students in musicology. Includes a study of bibliographic resources and techniques; on-line and CD ROM resources; database creation and management; basic historical method; evidence and argumentation in historical research; critical reading and logical analysis; and the nature and taxonomy of musical sources. Students begin a project on the state of research on a particular subject of their choice, which is to be completed in MUS 512. Prerequisite: Graduate standing in musicology or consent of instructor.

MUS 512  **Fdns/Methods of Musicology II**  credit: 4 hours.
Continues materials introduced in MUS 511. Focuses on the history of the discipline and on the theories and methods of ethnomusicology. Students conclude a project on the state of research on a particular subject of their choice, which was begun in MUS 511. Prerequisite: MUS 511 or consent of instructor.

MUS 515  **Notation**  credit: 2 hours.
History of notation from about 1400 to 1600, including instrumental tablatures. Prerequisite: Consent of instructor.

MUS 517  **Topics in Hist of Instrum Mus**  credit: 4 hours.
Intensive study of a period or school of instrumental composition, or of a particular genre of instrumental music. Includes wide reading in the social and intellectual climate of the period concerned; structural and stylistic analysis; and work with primary sources, whenever available. May be repeated to a maximum of 8 hours. Prerequisite: MUS 528, graduate standing, or consent of instructor.

MUS 518  **Topics in Opera History**  credit: 4 hours.
Intensive study of a period or school of opera composition or of a particular aspect of the history of opera. Wide reading in the social and intellectual climate of the period concerned; literary, dramatic, and musical analysis; and work with primary sources, whenever possible. (Summer session, 2 hours). May be repeated to a maximum of 8 hours. Prerequisite: MUS 528, graduate standing in musicology, or consent of instructor.

MUS 521  **Hist Studies in 20thC Music**  credit: 2 OR 4 hours.
Seminar in contemporary music, with emphasis on the historical foundations of current trends in musical composition. May be repeated to a maximum of 8 hours. Prerequisite: MUS 415 or MUS 507 or equivalent.

MUS 523  **Seminar in Musicology**  credit: 4 hours.
Problems in historical and systematic musicology or ethnomusicology; discussions of special problems and reports on individual research. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in musicology or consent of instructor.

MUS 524  **Sem in Wrks of Select Composer**  credit: 2 OR 4 hours.
Intensive historical and analytical study of the works of important composers; each term devoted to one composer. (Summer session, 2 or 4 graduate hours.) May be repeated to a maximum of 16. Prerequisite: MUS 313 and MUS 314; two of the following: MUS 410, MUS 411, MUS 412, MUS 413, MUS 414, or MUS 415, or equivalent.

MUS 525  **Rdgs in Musicol and Mus Theory**  credit: 2 OR 4 hours.
Individual guidance in intensive readings in the literature of musicology or music theory, selected in consultation with the instructor and in accordance with the needs and interests of the student. (Summer session, 2 graduate hours.) May be repeated. Prerequisite: Graduate standing in musicology or music theory.

MUS 526  **Baroque Performance Practice**  credit: 3 hours.
Study of musical performance from ca. 1600-1750; discussion of musical instruments, ornamentation, basso continuo, etc., supplemented by demonstration performances using the University's collection of instruments. Prerequisite: Graduate standing in music; for undergraduates, consent of instructor.

MUS 527  **Classical Performance Practice**  credit: 3 hours.
Study of musical performance of the classical period, with an emphasis on the music of Haydn, Mozart, and early Beethoven; discussion of musical instruments, ornamentation, tempo, vibrato, etc., supplemented by demonstration performances using the University's collection of instruments. Prerequisite: Graduate standing in music; for undergraduates, consent of instructor.

MUS 528 Problems and Methods credit: 4 hours.
Introduction to methods in research and stylistic criticism and to bibliographic aids, editions, and editing of music, as related to the work of the musician and composer. Reports of bibliographic problems and on individual projects are presented orally and in writing. Required of all students in the Master of Music program, except those majoring in musicology.

MUS 529 Transformative Music Education credit: 2 OR 4 hours.
Music educators in all settings operate in a crosscurrent of social, musical, educational, and person values. In order to improve our professional practice and transform the profession, we need to examine society's expectations of schools, education, music and the arts as well as our own. In this course, students will learn how sociology can be used to identify and clarify these connections.

MUS 530 Readings in Music Education credit: 1 TO 4 hours.
Independent study of topics not treated in regularly-scheduled courses. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in music education.

MUS 531 Psychology of Music credit: 2 OR 4 hours.
Study of the application of psychological principles to the teaching of and responses to music; perceptual and conceptual learning in music; uses of music in extra-musical venues; musical abilities; and music preference. Prerequisite: Graduate standing in music education and successful completion of MUS 533 or the equivalent, or consent of instructor.

MUS 532 Principles of Curric in Mus Ed credit: 2 OR 4 hours.
Examination of issues related to curriculum and program development and instructional and evaluative practice as influenced by contemporary philosophical and psychological views. Consideration will be given to effect on administrative and supervisory responsibilities. Prerequisite: Acceptance into the MME curriculum or consent of instructor.

MUS 533 Introd to Research in Mus Ed credit: 2 OR 4 hours.
Emphasizes the interpretation and application of published studies and reports; an overview of traditional research methodologies; sources of research literature; basic statistical procedures; and quantitative and qualitative research terminology. Prerequisite: Advanced undergraduate or graduate standing in music or music education, or consent of instructor.

MUS 534 Research in Music Education credit: 2 OR 4 hours.
Intensive investigation of quantitative and qualitative methodologies of music education research. Emphasizes proposing and conducting research, experimental design, historical and philosophical research techniques in music education, and data collection and analysis. Prerequisite: MUS 533 or equivalent, or consent of instructor.

MUS 535 Fdns/Principles of Mus Ed I credit: 2 OR 4 hours.
Consideration of the historical and philosophical foundations of music education and their implications for developing curricular and instructional approaches to the field of music education. Prerequisite: Graduate standing in music or music education, or consent of instructor.

MUS 536 Fdns/Principles of Mus Ed II credit: 2 OR 4 hours.
Consideration of the psychological foundations of music education and implications of contemporary theory for the development of processes of instruction, administration, supervision, and evaluation of music education programs. Prerequisite: Graduate standing in music or music education, or consent of instructor.

MUS 537 Admin and Superv of Mus Ed credit: 2 OR 4 hours.
Studies the functions of supervisors and directors of music education in administering music programs in elementary and secondary schools.

MUS 538 Gen Mus Program Elem Schools credit: 2 OR 4 hours.
Concentration on contemporary practices in elementary general music education as influenced by current learning theory and educational principles. Includes consideration of methodology, materials, curricular aims, and evaluation. Prerequisite: Graduate standing in music education, or consent of instructor.

MUS 539 Music in Higher Education credit: 2 OR 4 hours.
Orientation to the organization, teaching, and administration of music in the college and university. Prerequisite: Graduate standing in music or music education.

MUS 540 Rehearsal Techniques in Band credit: 2 OR 4 hours.
Examination of techniques of rehearsal, conducting, and preparation of band organizations for concert performance. Emphasizes discussion, analysis, and preparation of selected scores and the problems they present. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing, or experience as a band conductor.

MUS 541  Chor Prog in Secondary Schools  credit: 2 OR 4 hours.
In-depth study of the methods and materials appropriate for teaching choral music in the secondary schools. Prerequisite: Graduate standing in music or music education.

MUS 542  Adv Tech Based Mus Instruction  credit: 2 OR 4 hours.
Continuation in greater depth of topics introduced in MUS 447. Special attention to the application of multimedia and MIDI technologies in the development of advanced class projects. Creation of HTML resources with music education applications on the Internet. Higher credit will require a major project and paper using multimedia technology and/or Internet resources. Prerequisite: MUS 447; graduate standing, or consent of instructor.

MUS 543  Tests & Measurement in Mus Ed  credit: 2 OR 4 hours.
Construction, design, appraisal, and use of measurement devices for music teaching and research. Prerequisite: Consent of instructor.

MUS 544  Sem in Music Teacher Education  credit: 2 OR 4 hours.
Intended for prospective university teachers of undergraduate music education majors. Covers educational philosophy, curriculum design, methods of teaching and evaluation, and student teaching and observational experiences as they relate to undergraduate music teacher preparation. Prerequisite: Graduate standing in music education; at least three years of public school music teaching experience is highly recommended.

MUS 545  Workshop in Music Education  credit: 1 TO 4 hours.
Development of essential facts, attitudes, and principles through a consideration of problems encountered in music education. Parallel with this study is the preparation of resource materials for music programs in elementary and secondary schools. May be repeated.

MUS 546  Orchestral Literature I  credit: 2 hours.
Study of orchestral and symphonic literature from about 1700 to 1850. Prerequisite: Graduate orchestral conducting majors only; consent of instructor.

MUS 547  Orchestral Literature II  credit: 2 hours.
Study of orchestral and symphonic literature from about 1850 to the present. Prerequisite: Graduate orchestral conducting majors only; consent of instructor.

MUS 548  Advanced Jazz Harmony I  credit: 4 hours.
A survey of advanced improvisational theory and its conception, use, and historical lineage. Examines synthetic, symmetric, and asymmetric scales and modes generated from each. Discussion and analysis of chord symbols and their functions in asymmetric song forms. In-class demonstration by students of linear and vertical approaches to improvising on uncommon chord functions. Prerequisite: MUS 361, or placement by exam with consent of instructor.

MUS 549  Advanced Jazz Harmony II  credit: 4 hours.
Continuation of materials introduced in MUS 548. Surveys advanced improvisational theory and its conception, use, and historical lineage. Examines use of polychords, pentatonic scales, diminished scales, and the modes generated from each. Discussion and analysis of chord functions in all song forms. Students demonstrate in class a variety of linear and vertical approaches to improvising using harmonic major scales. Prerequisite: MUS 548, or placement by exam with consent of instructor.

MUS 550  Choral Literature I  credit: 2 hours.
Survey of choral and vocal ensemble repertoire from the Middle Ages to about 1750. Prerequisite: Graduate standing in music; consent of instructor.

MUS 551  Choral Literature II  credit: 2 hours.
Survey of choral repertoire about 1750 to the present. Prerequisite: Graduate standing in music; consent of instructor.

MUS 553  Adv Orch Conducting/Literature  credit: 2 OR 4 hours.
Study of conducting techniques and problems related to standard orchestral literature. May be repeated to a maximum of 8 hours. Prerequisite: MUS 333 or equivalent, and consent of instructor.

MUS 554  Adv Band Conducting/Literature  credit: 2 OR 4 hours.
Study of problems and techniques of band conducting; survey of literature for the concert band. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in music or music education.

MUS 555  Advanced Choral Techniques I  credit: 2 hours.
Intensive laboratory approach to the development of advanced techniques necessary for working effectively with choral ensembles. Choral majors must enroll each term in residence. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in choral music or consent of instructor.

**MUS 556 Advanced Choral Techniques II**  
credit: 2 OR 4 hours.  
Intensive survey of choral literature with laboratory organization for reading, conducting, and interpreting choral music of all periods, styles, and voice arrangements. Prerequisite: Graduate standing in choral music; MUS 555 or equivalent, or consent of instructor.

**MUS 557 Piano Literature**  
credit: 4 hours.  
May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in music or consent of instructor.

**MUS 558 Vocal Literature**  
credit: 4 hours.  
Study of solo song in larger works and solo art song. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in music or consent of instructor.

**MUS 559 Organ Literature**  
credit: 4 hours.  
Intensive study of organ literature from Bach to the present; includes the music itself, recordings, and collateral readings. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in music or consent of instructor.

**MUS 560 String Instrument Literature**  
credit: 4 hours.  
May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in music or consent of instructor.

**MUS 561 Wind Instrument Literature**  
credit: 4 hours.  
Survey of solo and ensemble wind literature; includes analysis and performance (when possible) of the music itself, recordings, and collateral readings. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in music or consent of instructor.

**MUS 562 Percussion Instruments Lit**  
credit: 4 hours.  
Survey and analysis of the field of solo and ensemble percussion literature; includes analysis and performance (when possible) of the music itself, recordings, and collateral readings. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in music or consent of instructor.

**MUS 563 Hist of Voc Ens and Chor Music**  
credit: 2 hours.  
Critical and analytical study of vocal ensemble and choral music from the Middle Ages to the present. May be repeated to a maximum of 8 hours. Prerequisite: MUS 550 and MUS 551, or equivalent, or consent of instructor.

**MUS 564 Choral Conducting Project**  
credit: 2 hours.  
Participation in a graduate choral conducting laboratory and preparation of a choral ensemble for public performance. Required during the final term in residence for candidates in the Master of Music in choral music curriculum. Prerequisite: MUS 555 and consent of instructor.

**MUS 565 Adv Choral Perform Techniques**  
credit: 2 hours.  
Study of performance problems and musical analysis of choral music with techniques of preparation and rehearsal from the various style periods: Renaissance, Baroque, Classic-Romantic, and Contemporary. May be repeated to a maximum of 8 hours. Prerequisite: Admission into the Doctor of Musical Arts choral music program, or the equivalent background in other doctoral programs.

**MUS 566 Graduate Applied Jazz Instruc**  
credit: 1 TO 4 hours.  
Instruction at the graduate level in voice or in instruments normally associated with the jazz idiom. (Summer session, 1 or 2 hours.) May be repeated to a maximum of 20 hours. Prerequisite: Successful performance audition for the jazz faculty.

**MUS 567 Adv Instrument: Chamber/Symph**  
credit: 2 OR 4 hours.  
Orchestration for chamber and symphony orchestras; works of Classical, Romantic, and Contemporary composers. Prerequisite: Undergraduate course in instrumentation.

**MUS 568 Advanced Instrumentation: Band**  
credit: 2 OR 4 hours.  
Arrangement for the concert band of works from orchestra, organ, and chamber music repertoires by composers of the Classical, Romantic, and Contemporary periods. Prerequisite: Undergraduate course in instrumentation.

**MUS 570 Prac Pno Tchg Child and Teens**  
credit: 4 hours.  
Student teaching of group piano and musicianship classes for elementary, middle school, and high school students; weekly seminar devoted to evaluation and improvement of teaching techniques. Prerequisite: Graduate standing in music or consent of instructor.

**MUS 571 Practicum in Piano Tchg Adults**  
credit: 4 hours.
Student teaching of group piano for adults in the private studio, community college, and university; weekly seminar devoted to evaluation and improvement of teaching techniques. Prerequisite: Graduate standing in music or consent of instructor.

MUS 574  **Jazz Arranging III**  credit: 4 hours.
Advanced arranging styles and orchestration techniques, with emphasis on brass section arranging, saxophone section arranging, and big band arranging. Orchestration techniques with emphasis on band planing (parallelism), 5-part spread, cluster voicings, and line-writing. Study of jazz related re-harmonization techniques with emphasis on tonicization, secondary dominants, and passing chord re-harmonization. Prerequisite: MUS 363, or placement by exam/portfolio with consent of instructor.

MUS 575  **Jazz Arranging IV**  credit: 4 hours.
Continued practice and examination of arranging applications for advanced re-harmonization techniques, including tonicization, secondary dominant re-harmonizations, and passing chord re-harmonizations. Score study of advanced voicing techniques, including 5-part spread, whole and half-step planing (parallelism), and modal line-writing. Advanced notation software is introduced and applied in the classroom. Includes discussion of practical application of jazz arranging in a modern music business context. Prerequisite: MUS 574, or placement by exam/portfolio with consent of instructor.

MUS 576  **Doctoral Projects**  credit: 0 TO 16 hours.
Special projects for candidates for the Doctor of Musical Arts degree. Open only to students in the Doctor of Musical Arts program. May be approved. Approved for S/U grading only. (Summer session, 0 to 8 hours.) Prerequisite: Consent of instructor.

MUS 577  **Advanced Accompanying**  credit: 4 hours.
Principles of accompanying singers and instrumentalists, practical experience in accompanying, and facility in sight reading for keyboard performers. May be repeated to a maximum of 12 hours. Prerequisite: Graduate standing in music or consent of instructor.

MUS 579  **Graduate Level Harpsichord**  credit: 1 TO 4 hours.
Selected studies from the masterworks of harpsichord literature. (Summer, 1 or 2 hours.) May be repeated to a maximum of 20 hours. Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for appropriate faculty members of the Organ/Harpsichord Division.

MUS 580  **Graduate Level Piano**  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) May be repeated to a maximum of 20 hours. Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the piano faculty.

MUS 581  **Graduate Level Voice**  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) May be repeated to a maximum of 20 hours. Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the voice faculty.

MUS 582  **Graduate Level Organ**  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) May be repeated to a maximum of 20 hours. Prerequisite: Selected studies from the masterworks of organ literature. Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for appropriate faculty members of the Organ/Harpsichord Division.

MUS 583  **Graduate Level Violin**  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) May be repeated to a maximum of 20 hours. Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the string faculty; concurrent registration in MUS 450 section K for students in the Master of Music curriculum in strings.

MUS 584  **Graduate Level Viola**  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) May be repeated to a maximum of 20 hours. Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the string faculty; concurrent registration in MUS 450, section K, for students in the Master of Music curriculum in strings.

MUS 585  **Graduate Level Cello**  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) May be repeated to a maximum of 20 hours. Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the string faculty; concurrent registration in MUS 450 section K for students in the Master of Music curriculum in strings.

MUS 586  **Graduate Level Double Bass**  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) May be repeated to a maximum of 20 hours. Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the string faculty; concurrent registration in MUS 450, section K, for students in the Master of Music curriculum in strings.

MUS 587  **Graduate Level Harp**  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) May be repeated to a maximum of 20 hours. Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the string faculty.

MUS 588  **Graduate Level Flute**  credit: 1 TO 4 hours.

MUS 589  **Graduate Level Clarinet**  credit: 1 TO 4 hours.

MUS 590  **Graduate Level Oboe**  credit: 1 TO 4 hours.

MUS 591  **Graduate Level Bassoon**  credit: 1 TO 4 hours.

MUS 592  **Graduate Level Saxophone**  credit: 1 TO 4 hours.

MUS 593  **Graduate Level Trumpet**  credit: 1 TO 4 hours.

MUS 594  **Graduate Level Horn**  credit: 1 TO 4 hours.

MUS 595  **Graduate Level Trombone**  credit: 1 TO 4 hours.

MUS 596  **Graduate Level Euphonium**  credit: 1 TO 4 hours.

MUS 597  **Graduate Level Tuba**  credit: 1 TO 4 hours.

MUS 598  **Graduate Level Percussion**  credit: 1 TO 4 hours.

MUS 599  **Thesis Research**  credit: 0 TO 16 hours.

Research in special projects. Approved for S/U grading only. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.
Neuroscience

Neuroscience, Program in
Program Director: Gene Robinson
Program Office: 318 B Morrill Hall
Phone: 333-4971
www.life.uiuc.edu/neuroscience/

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>NEUR 199</td>
<td>Undergraduate Open Seminar</td>
<td>1 TO 5 hours</td>
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<td></td>
<td>(May be repeated)</td>
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<tr>
<td>NEUR 403</td>
<td>Memory and Amnesia</td>
<td>3 OR 4 hours</td>
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<td></td>
<td>(Same as PSYC 403. See PSYC 403)</td>
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<tr>
<td>NEUR 404</td>
<td>Introduction to Neurobiology</td>
<td>3 hours</td>
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<td></td>
<td>(Same as MCB 414. See MCB 414)</td>
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<tr>
<td>NEUR 405</td>
<td>Cognitive Neuroscience</td>
<td>3 OR 4 hours</td>
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<td>(Same as PSYC 404. See PSYC 404)</td>
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<tr>
<td>NEUR 411</td>
<td>Bio Psych Lab</td>
<td>3 hours</td>
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<td>(Same as PSYC 411. See PSYC 411)</td>
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<tr>
<td>NEUR 412</td>
<td>Neurobiology of Vision</td>
<td>3 OR 4 hours</td>
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<td></td>
<td>(Same as PSYC 412. See PSYC 412)</td>
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<tr>
<td>NEUR 413</td>
<td>Psychopharmacology</td>
<td>3 OR 4 hours</td>
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<td>(Same as PSYC 413. See PSYC 413)</td>
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<tr>
<td>NEUR 414</td>
<td>Brain, Learning, and Memory</td>
<td>3 OR 4 hours</td>
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<td>(Same as PSYC 414. See PSYC 414)</td>
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<tr>
<td>NEUR 415</td>
<td>Human Neuropsych</td>
<td>2 TO 4 hours</td>
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<td>(Same as PSYC 415. See PSYC 415)</td>
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<tr>
<td>NEUR 419</td>
<td>Brain, Behavior &amp; Info Process</td>
<td>3 hours</td>
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<td>(Same as MCB 419, BIOE 419, and BIOP 419. See MCB 419)</td>
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<tr>
<td>NEUR 421</td>
<td>Principles of Psychophysiology</td>
<td>3 OR 4 hours</td>
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<td></td>
<td>(Same as PSYC 421. See PSYC 421)</td>
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<tr>
<td>NEUR 422</td>
<td>Cellular Molec Neurobiology</td>
<td>3 hours</td>
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<td></td>
<td>(Same as MCB 412. See MCB 412)</td>
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<tr>
<td>NEUR 425</td>
<td>Struct Funct of Nervous System</td>
<td>4 hours</td>
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<td></td>
<td>(Same as MCB 415. See MCB 415)</td>
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<tr>
<td>NEUR 426</td>
<td>Integrative Neurophysiology</td>
<td>3 hours</td>
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<td></td>
<td>(Same as MCB 416. See MCB 416)</td>
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<tr>
<td>NEUR 427</td>
<td>Modeling Neural Systems</td>
<td>4 hours</td>
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<td></td>
<td>(Same as BIOP 417 and MCB 417. See MCB 417)</td>
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<tr>
<td>NEUR 432</td>
<td>Genes and Behavior</td>
<td>3 hours</td>
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<td></td>
<td>(Same as ANTH, IB 432, and PSYC 432. See IB 432)</td>
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<tr>
<td>NEUR 433</td>
<td>Evolutionary Neuroscience</td>
<td>3 OR 4 hours</td>
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<td></td>
<td>(Same as PHIL 433 and PSYC 433. See PSYC 433)</td>
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<tr>
<td>NEUR 444</td>
<td>Hormones and Behavior</td>
<td>3 OR 4 hours</td>
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Same as IB 430 and PSYC 444. See PSYC 444.

NEUR 451 Neurobio of Aging credit: 0 TO 4 hours.
Same as PSYC 451 and NEUR 451. See PSYC 451.

NEUR 453 Cog Neuroscience of Vision credit: 3 OR 4 hours.
Same as PSYC 453. See PSYC 453.

NEUR 500 Topics in Neuroscience credit: 1 hours.
Critical reading and discussion of current papers from the neuroscience literature, and discussion of other relevant topics such as ethics and career and professional skills development. Grading based on attendance and participation. Approved for both letter and S/U grading. This course may be repeated to a maximum of 2 hours. Prerequisite: Enrollment in Neuroscience Ph.D. program or consent of instructor.

NEUR 505 Neurochemistry credit: 3 hours.
Same as MCB 505 and PSYC 505. See PSYC 505.

NEUR 507 Dialogues in Neuroscience credit: 3 hours.
Same as MCB 507. See MCB 507.

NEUR 510 Adv in Psychobiology credit: 2 TO 4 hours.
Same as PSYC 510. See PSYC 510.

NEUR 511 Adv Physiological Psych credit: 2 hours.
Same as PSYC 511. See PSYC 511.

NEUR 516 Neurophysiology Laboratory credit: 2 hours.
Same as MCB 516. See MCB 516.

NEUR 520 Adv Topics in Neuroscience credit: 1 hours.
Survey of current research in modern neural and behavioral biology. Each weekly seminar is presented by a faculty member or distinguished visiting neuroscientist. Abstracts and suggested readings are presented prior to each seminar. Approved for S/U grading only.

NEUR 527 Human Neuroscience credit: 3 hours.
Same as MCB 527. See MCB 527.

NEUR 590 Indiv Topics Neuroscience credit: 2 TO 12 hours.
Individual topics of research supervised by Neuroscience faculty. Usually taken in one of the eight Neuroscience concentration areas: 1) neuroanatomy, 2) neurophysiology, 3) cognitive and behavioral neuroscience, 4) neurochemistry, neuropharmacology and neurotoxicology, 5) neuroendocrinology and neuroimmunology, 6) developmental genetic and molecular neuroscience, 7) clinical and biomedical neuroscience, 8) computational neuroscience. Typically taken by students before they choose their thesis topic. Approved for S/U grading only. May be repeated in the same or subsequent terms. Prerequisite: Consent of Instructor.

NEUR 591 Computational Brain Theory credit: 1 hours.
Interdisciplinary graduate/faculty seminar addressing unresolved issues in neuroscience, cognitive science, and distributed artificial intelligence, which concern the functional design of the nervous system and the construction of large-scale, biologically inspired artificial neural network systems. Same as MCB 519. Approved for S/U grading only. Prerequisite: Consent of Instructor.

NEUR 599 Thesis Research credit: 0 TO 16 hours.
Research on the thesis topic and preparation of the thesis. Approved for S/U grading only. May be repeated in the same or subsequent terms. Prerequisite: Consent of Instructor.
Nuclear, Plasma, and Radiological Engineering

Nuclear, Plasma, and Radiological Engineering
Head of Department: James F. Stubbins
Department Office: 216 Talbot Laboratory, 104 South Wright, Urbana
Phone: 333-2295
www.ne.uiuc.edu

NPRE 100 Orient to Nucl Plasma Rad Eng credit: 1 hours.
Introduces freshmen to nuclear, plasma, and radiological engineering. Several demonstrations of nuclear phenomena are presented and discussed (reactor operation, plasma behavior, and others). Experiments are conducted on radioactive decay and radiation shielding with one formal laboratory report and a student project.

NPRE 101 Introduction to Energy Sources credit: 3 hours.
Explains energy technologies using an elementary approach which pre-supposes no prior scientific or technical background. Examines all energy sources including fossil fueled, solar, hydro, and nuclear power. Demonstrations and a tour of the University's power plant are integral parts of the course. Energy related incidents are discussed, including their environmental, economic, and social impact. Same as ENVS 101.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

NPRE 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
May be repeated in separate terms to a maximum of 2 times.

NPRE 201 Energy Systems credit: 2 OR 3 hours.
Examines patterns of energy production and utilization and discusses the technical aspects of renewable energy resources, advanced fossil fuel systems, and advanced nuclear systems. Same as GLBL 201. Prerequisite: MATH 220 or MATH 221; one of PHYS 101, PHYS 211, CHEM 104, CHEM 204, ME 300.

NPRE 241 Intro to Radiation Protection credit: 2 hours.
Introduction to elements of radiation protection and health physics, emphasizing practical applications. Same as ENVS 241. Credit is not given to NPRE seniors. Prerequisite: MATH 220 or MATH 221; a biology, chemistry, or physics course.

NPRE 247 Modeling Nuclear Energy System credit: 3 hours.

NPRE 397 Independent Study credit: 1 TO 4 hours.
Individual investigations or studies of any phase of nuclear engineering selected by the student and approved by the department. May be repeated. Prerequisite: Consent of instructor.

NPRE 398 Special Topics credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in nuclear, plasma, and radiological engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

NPRE 402 Nuclear Power Engineering credit: 3 OR 4 hours.
Principles of utilization of fission energy in nuclear power engineering; includes such topics as fission processes and controlled chain reactions; nuclear reactor types, design principles, and operational characteristics; power reactor design criteria; radiation hazards and radioactive waste treatment; economics; other applications such as propulsion and research reactors. Students who plan to pursue more extensive training in nuclear technology are advised to take the NPRE 247, NPRE 446, NPRE 447 sequence. Same as ME 405. 3 undergraduate hours. 4 graduate hours. Credit is not given for both NPRE 402 and NPRE 247. Credit is not given toward an NPRE graduate degree.

NPRE 412 Nuclear Power Econ & Fuel Mgmt credit: 3 OR 4 hours.
Quantitative analysis of the impact of the nuclear power industry; nuclear fuel cycle and capital costs for thermal and fast reactors; optimization of the use of nuclear fuels to provide the lowest energy costs and highest system performance; comparison between fossil
fuel systems, fission systems, and controlled thermonuclear fusion systems. 3 undergraduate hours. 4 graduate hours. Junior standing is required. Prerequisite: NPRE 402 or NPRE 247.

NPRE 421  Plasma and Fusion Science  credit: 3 hours.
Introduction to the physics of plasmas, including particle and fluid descriptions, waves, collisions, stability, and confinement, with applications to controlled thermonuclear fusion reactors, problems in fusion engineering, and astrophysics. Same as ECE 421 and PHYS 479. For engineering or physical science majors with junior standing.

NPRE 423  Plasma Laboratory  credit: 2 hours.
Laboratory experiments relating to plasma engineering and fusion energy will be conducted in small groups. Topics in ultra-high vacuum technology rf and dc electric plasma probes, measurements of dc and pulsed magnetic fields, dynamics of a theta pinch, and laser interferometry to measure plasma density, may all be included. Prerequisite: NPRE 421 and NPRE 451.

NPRE 429  Plasma Engineering  credit: 3 hours.
Basic principles and examples for adapting and applying the plasma state to solve a number of modern engineering problems. These include the plasma processing of materials for microelectronics and other uses, lighting, plasma displays, and other technologies. Prerequisite: ECE 329 or PHYS 435.

NPRE 431  Materials in Nuclear Eng  credit: 3 hours.
Develops a materials engineering background in the context of nuclear systems and radiation applications; relates structure of materials to their physical and mechanical properties; develops phase formation and reaction kinetics from basic thermodynamics principles; develops an understanding of charged particle interactions with surfaces; develops transport concepts of neutral and charged particles in matter; discusses materials performance in nuclear and radiation applications, including radiation damage and effects. Credit is not given for both NPRE 431 and MSE 486. For engineering or physical science majors with junior standing.

NPRE 432  Nuclear Eng Materials Lab  credit: 2 hours.
Laboratory experiments relating to materials applications in nuclear engineering and energy systems will be conducted in small groups. Topics in room and elevated temperature mechanical properties of structural materials, corrosion, physical properties, radiation damage and effects, and materials selection in design will be included. Prerequisite: Credit or concurrent registration in NPRE 431.

NPRE 435  Imaging w/Ionizing Radiation  credit: 3 hours.
Techniques used to generate ionizing radiation useful in the imaging of solids and medical imaging. Theory and applications of biological and medical imaging modalities that use ionizing radiation: X-ray diagnostic methods such as plain film and digital, computer axial tomography (CAT); radionuclide imaging techniques such as positron emission tomography (PET), single photon emission computed tomography (SPECT), and gamma cameras. Theory and applications of materials imaging, including x-ray, electron, and neutron diffraction, in addition to small angle neutron and x-ray scattering (SANS SAXS). Prerequisite: NPRE 446.

NPRE 441  Radiation Protection  credit: 3 hours.
Sources of nuclear radiation; ionization and energy deposition in matter with an emphasis on biological systems; principles of dosimetry; determination of exposure and limits for internal and external emitters; basic shielding calculations. Prerequisite: NPRE 446.

NPRE 442  Radioactive Waste Management  credit: 2 hours.
Sources and characteristics of radioactive wastes; methods of treatment; monitoring techniques; methods of hazard evaluation; special aspects of solid, liquid, and gaseous wastes; disposal, both temporary and permanent. Prerequisite: NPRE 446.

NPRE 444  Nuclear Analytical Methods Lab  credit: 2 OR 3 hours.
Nuclear analytical methods and techniques are covered in-depth in experiments in small groups. Emphasis is placed on neutron activation analysis, energy dispersive x-ray fluorescence and particle spectroscopy. Use of radiation for medical and materials imaging is covered. Credit of 2 hours is given if NPRE 451 or equivalent has been taken. Prerequisite: CHEM 102 and NPRE 446.

NPRE 446  Radiation Interact w/Matter I  credit: 3 hours.
Experimental and theoretical foundations of interaction of neutrons, photons, and charged particles with matter. Emphasis on topics that underlie the following applications: radiation detection, biological effects and radiation dosimetry, radiation damage and nuclear materials, neutron activation analysis, and fission and fusion energy systems. Classical theory of charged particle cross sections. Introductory quantum mechanics. Exact and numerical solutions of the Schroedinger equation. Quantum theory of cross sections. Photon interactions with atomic electrons and nuclei. Radioactive-series decay. Computer assignments illustrate fundamental concepts. Not available for graduate credit to nuclear engineering majors. Prerequisite: MATH 241 or MATH 380; MATH 285; ME 300.

NPRE 447  Radiation Interact w/Matter II  credit: 3 hours.
Continuation of NPRE 446. Quantum theory of ionization of matter by charged particles. Nuclear models and structure. Alpha decay, fission and fusion reactions. Beta and gamma decay. Nuclear reactions. Radiation damage effects. Special topics. Computer assignments to illustrate fundamental concepts. Prerequisite: NPRE 446.
NPRE 448  **Nuclear Syst Eng & Design**  credit: 3 hours.
Engineering principles that underlie nuclear systems designed with emphasis on nuclear power reactors. Materials for nuclear systems. Energy generation and removal in single- and two-phase flows. Reactor and component control systems and nuclear fuel reloading patterns. Prerequisite: MATH 241 or MATH 380; MATH 285; ME 300; NPRE 455.

NPRE 451  **Nuclear Plasma & Rad Eng Lab**  credit: 3 hours.
Radiation detection and instrumentation; radiation dosimetry and shielding; basic measurements in nuclear engineering; engineering applications; micro computer data acquisition and experimental control. Prerequisite: NPRE 446.

NPRE 453  **Nuclear Reactor Laboratory**  credit: 2 hours.
Laboratory experiments relating to nuclear reactor physics and fission reactor operations, conducted in small groups, including: reactor instrumentation, flux and power measurements, start-up procedures, reactivity worth measures, reactor period, control rod calibration experiments, and measurements in subcritical, critical and supercritical systems. Prerequisite: NPRE 451.

NPRE 455  **Neutron Diffusion & Transport**  credit: 4 hours.
Neutron migration, neutron slowing down and thermalization; neutron continuity equation, multigroup diffusion theory, homogeneous and heterogeneous medium, thermal and fast assemblies; numerical methods for multigroup diffusion equations; reactor dynamics, perturbation theory, reactivity coefficients; introductory transport theory. Prerequisite: NPRE 247.

NPRE 457  **Safety Anlys Nucl Reactor Syst**  credit: 3 OR 4 hours.
Basic safety philosophy in nuclear reactor systems; brief review of nuclear reactor systems; regulatory processes; siting considerations; safety problems related to reactor dynamics; evaluation of postulated accidents; risks associated with nuclear fuel cycle; methods of systems safety analysis. Same as CSE 462. 3 undergraduate hours. 3 to 4 graduate hours. Prerequisite: NPRE 402 or NPRE 247.

NPRE 458  **Design in Nucl Plasma Rad Eng**  credit: 4 hours.
Introduction to design in nuclear engineering systems; basic principles of definition, organization, constraints, modeling and optimization of system design; case studies; class design projects applying these basic principles. Prerequisite: NPRE 448.

NPRE 480  **Energy and Security**  credit: 3 hours.
Examines the interplay between security and supplies of energy, mineral resources, and water. Traces the evolution of the importance of various fuels (including coal, oil, uranium, and natural gas) in the Franco-Prussian, First and Second World Wars, in subsequent conflicts in Asia and Africa, and in military planning for possible future conflicts. Reviews relevant theories of international conflict and examines the role of individual leaders versus institutional factors in the precipitation and outcome of pivotal wars. Reviews data and results of econometric analyses relevant to past and projected future energy use and discusses the role of policy formation and execution in influencing uncertainties about outcomes. Same as GLBL 480 and PS 480. Junior standing is required. Prerequisite: Composition I and Quantitative Reasoning I.

NPRE 481  **Writing on Technol & Security**  credit: 3 hours.
Develops writing skills in standard computer, desktop publishing, and electronic publishing formats, based on academic material covered in NPRE 482/GLBL 482 and NPRE 483/GLBL 483. That includes theory, global and regional security environments, and arms control and verification relevant to military uses of nuclear energy and the impact of the military uses of nuclear energy on the nuclear electrical power sector; and seminars on technology of domestic and international security and the regional and international contexts that influence the nature of security problems. For graduate credit, writing projects include documentation of computational work using software appropriate for typesetting of mathematical formulas. Same as GLBL 481.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

NPRE 482  **Miltry & Civ Uses Nucl Energy**  credit: 1 hours.
Examines theory, global and regional security environments, and arms control and verification relevant to military uses of nuclear energy and the impact of the military uses of nuclear energy on the nuclear electrical power sector. Topics include theory of international conflict, arms control agreements, delivery vehicles, fission and fusion reactions and the role of tritium, detection of fissile materials, and military and civilian uses of nuclear energy in South Asia, the Far East, the Middle East, Russia, and NATO. Same as GLBL 482. Junior standing is required.

NPRE 483  **Seminar on Security**  credit: 1 hours.
Technology and security issues are analyzed through preparation of reports on a weekly seminar chosen from a regular seminar offering or an alternative approved list. Topics covered include technology of domestic and international security and the regional and international contexts that influence the nature of security problems. Same as GLBL 483. May be repeated in separate terms to a maximum of 2 hours. Junior standing is required. Prerequisite: Composition I.

NPRE 498  **Special Topics**  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in nuclear, plasma, and radiological engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

NPRE 501  **Fundamentals of Nuclear Eng**  credit: 4 hours.
Background for further work in nuclear engineering; problems in materials, heat transfer, and fluid flow; special emphasis on basic ideas and the mathematical similarity of problems in heat transfer, fluid flow, and neutron diffusion. Lecture-problem format. Prerequisite: NPRE 247; credit or concurrent registration in NPRE 446.

NPRE 511  **Nuclear Reactor Heat Transfer**  credit: 4 hours.
Selected topics in nuclear reactor heat transfer: thermal analysis of fuel elements under steady and transient operation; convective energy transport from reactor cores; two-phase flow and boiling in reactor cores; liquid metal coolant systems. Prerequisite: NPRE 501.

NPRE 521  **Interact of Radiation w/Matter**  credit: 4 hours.
Topics in the interaction of radiation with matter of interest to the nuclear engineering field: the kinematics, kinetics, and cross sections involved in the interaction of charged particles, electromagnetic radiation, and neutrons. Prerequisite: NPRE 446.

NPRE 522  **Controlled Fusion Systems**  credit: 4 hours.
Development of plasma models for fusion analysis; treatment of plasma heating and confinement with applications to current experiments; energy balances; energy extraction. Same as ECE 522. Prerequisite: NPRE 421.

NPRE 525  **Nucl-Electr Energy Conversion**  credit: 4 hours.
Advanced concepts in nuclear radiation energy conversion of importance in both power production and radiation detection; analysis and applications of direct collection of charged particles; theory and applications of radiation-induced ionization and excitation. Same as ECE 525.

NPRE 531  **Nuclear Materials**  credit: 4 hours.
Metallurgical principles applied to materials problems in nuclear engineering; includes topics in production of uranium, corrosion, radiation damage, fuel element fabrication, and fuel reprocessing. Prerequisite: NPRE 431.

NPRE 554  **Independent Lab Investigations**  credit: 1 TO 8 hours.
Individual experimental investigation in nuclear engineering. May be repeated. Prerequisite: Consent of instructor.

NPRE 555  **Reactor Theory I**  credit: 4 hours.
Advanced development of neutron transport theory; neutron slowing-down and resonance absorption; approximations to the transport equation; direct numerical methods and other techniques of approximation theory applied to the neutron transport equation; advanced topics. Same as PHYS 520. Prerequisite: NPRE 455 (waived for Physics majors).

NPRE 556  **Reactor Theory II**  credit: 4 hours.
Advanced treatment of the theory of slow-neutron scattering, neutron thermalization, Doppler broadening, fuel depletion and fuel loadings, properties of neutron migration operators, and mathematical neutron transport theory; interpretation of related experiments; advanced topics. Same as PHYS 521. Prerequisite: NPRE 521 and NPRE 555 (both waived for Physics majors).

NPRE 558  **Advanced Design in NPRE**  credit: 4 hours.
Classroom exercise in the conceptual design of a nuclear engineering system involving a synthesis of previous learning in the field of nuclear engineering and related disciplines. The design includes all necessary ingredients for the system, such as core, thermal-hydraulics, shielding, material selection, and control. Prerequisite: NPRE 448 and NPRE 501.

NPRE 559  **Asymptotic Methods**  credit: 4 hours.
Same as MATH 559, PHYS 522, and TAM 549. See TAM 549.

NPRE 560  **Reactor Kinetics and Dynamics**  credit: 4 hours.
Diffusion and transport neutron balances with delayed neutrons; formal development of the point reactor kinetics equations; analytic and numerical solutions of the point reactor kinetics equations; space-dependent, multigroup reactor kinetics; reactivity measurements; reactor noise analysis; advanced topics. Prerequisite: NPRE 555.

NPRE 596  **Seminar in Nuclear Sci & Eng**  credit: 0 TO 1 hours.
Lectures and discussions on current work in research and development in nuclear engineering and related fields by staff, advanced students, and visiting lecturers. Approved for both letter and S/U grading. May be repeated.

NPRE 597  **Independent Study**  credit: 1 TO 8 hours.
Individual study in areas of nuclear engineering and closely related fields not covered by regular course offerings. The work is carried out under the supervision of a member of the faculty. May be repeated. Prerequisite: Consent of instructor.
NPRE 598  **Special Topics**  credit: 2 TO 4 hours.
Subject offerings of new and developing areas of knowledge in nuclear, plasma, and radiological engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

NPRE 599  **Thesis Research**  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
NRES 100  **Fundamentals of Env Sci**  credit: 3 hours.
Introduction to environmental sciences and current environment issues. Topics include population growth, world food supplies, agriculture and the environment, biodiversity, fossil fuels and “green” energy issues, endangered and threatened species, water use, conservation and pollution, global warming, acid rain, ozone depletion, waste management and reduction, recycling, toxins and health, mineral resources, and environmental policies and regulations. Course addresses the complex relationships between the human race and the natural systems that contain our air, water, energy, and biotic and food resources. Credit cannot be earned in both NRES 100 and NRES 102.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

NRES 102  **Introduction to NRES**  credit: 3 hours.
Introduction to natural resources (forests, fisheries, soils, aquatic systems) and environmental science. Emphasizes renewable natural resources, ecological concepts, energy use, biodiversity of species, biogeochemical cycles, and air, water, and soil pollution. Provides natural science basis for understanding contemporary environmental issues and natural resource management.

NRES 104  **Intro to Env Social Science**  credit: 4 hours.
Introduces the interdependence of nature and society in shaping environmental thought and action. Central issues include how differing ideologies of nature mediate the social use and control of biophysical resources in production processes. Practical strategies focus on how a sustainable ecological society may be organized.

NRES 108  **Careers in Natural Resources**  credit: 1 hours.
Exploratory course that helps students identify career paths in Natural Resources and Environmental Sciences and plan their college experience to fulfill their future career goals. Job searching, resume writing, and the benefits of internship experiences are included. Approved for S/U grading only. Prerequisite: Enrollment in Natural Resources and Environmental Sciences, or Forestry.

NRES 109  **Global Environmental Issues**  credit: 3 hours.
Discussion course that focuses on analyzing opposing points of view on contemporary environmental issues. Students engage in role-playing activities, debates, and other participatory activities to explore the ecological and social dimensions of the issues.

NRES 161  **Global Environmental Change**  credit: 3 hours.
Same as HIST 101 and ENVS 161. See HIST 101.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences
UIUC: Western Compartv Cult

NRES 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Experimental course on a special topic in natural resources and environmental sciences. Topic may not be repeated except in accordance with the Code. May be repeated in the same or subsequent terms. No more than 12 hours may be counted toward graduation.

NRES 201  **Introductory Soils**  credit: 4 hours.
The nature and properties of soil including origin, formation, and biological, chemical, and physical aspects. Successful completion of high school chemistry is required.

NRES 210  **Environmental Economics**  credit: 3 hours.
Same as ACE 210, ECON 210, ENVS 210, and UP 210. See ACE 210.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

NRES 211  **Forest Ecology Field Studies**  credit: 2 hours.
Introduction to forest ecology and the application of ecological principles in silviculture and management practices. First eight week course; offered in alternate years. Field trip; fee required. Prerequisite: NRES 302 or HORT 301.

NRES 212 Wildland Recreation credit: 1 hours.
Field study of wildland recreational resources and facilities, user characteristics and preferences, and management techniques within the multiple-use concept.

NRES 215 Forest Resource Mgmt Practicum credit: 2 hours.
Field introduction to forest resource management, including wildlife management, watershed management, and forest protection. Field trips required; fee required.

NRES 219 Principles of Ecosystem Mgmt credit: 3 hours.
Application of ecological principles and approaches to ecosystems management. Students learn how to frame environmental problems and relevant questions from an ecological viewpoint using the systems perspective. A course in biology, zoology or botany is recommended.

NRES 220 Presenting Information credit: 3 hours.
Same as AGCM 220 and ENVS 220. See AGCM 220.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

NRES 221 NRES Field Sampling credit: 2 hours.
Introduction to field sampling methods used in natural resources. Topics include forest measurements, aerial photogrammetry, geographic information systems, and remote sensing. Field trips required; fee required. Prerequisite: Enrollment in the NRES or Forestry curriculum.

NRES 242 Nature and American Culture credit: 3 hours.
Same as HIST 282, LA 242, and RST 242. See RST 242.
This course satisfies the General Education Criteria for a:
UIUC: Western Compatri Cult

NRES 244 Sci-Value of Envt Decisions credit: 3 hours.
Same as LA 244 and RST 244. See RST 244.

NRES 270 Applied Entomology credit: 3 hours.
Same as CPSC 270 and IB 220. See CPSC 270.
This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

NRES 276 Introduction to Field Pedology credit: 2 hours.
Laboratory and field course involving description, interpretation, and classification of soil profiles. Several day, overnight field trip required; fee required. May be repeated to a maximum of 4 hours. Prerequisite: NRES 201.

NRES 280 Forest and Landscape Insects credit: 3 hours.
Basic ecology and life histories of insects and mites of trees, shrubs, and flowers will be presented in lectures, accompanied by slide and video presentations, a multimedia computer program, and specimen examinations in the laboratory sessions. Cultural, biological, and chemical control strategies will be presented.

NRES 285 Field Experience credit: 1 OR 2 hours.
Field based course that exposes students to procedures and methods used in various resource settings in a hands-on manner. Includes weekly field trips to visit representative natural resource and environmental science settings with supporting laboratory exercises. Content of offerings vary by section, but all focus on resource management, environmental quality and assessment, and effects of consumption and use on the environment. Field trips required; fees required. May be repeated in the same or subsequent semesters to a maximum of 6 hours. Prerequisite: NRES 201 and NRES 219.

NRES 287 Environment and Society credit: 3 hours.
Examination of the relationship between environment and society and implications for ecological and human well-being. Social science perspective covered on topics such as environmental change, environmental decision-making, natural resource management, agricultural systems, and environmental risks, hazards, and disasters. Students will build critical thinking skills focused on contemporary problems in the interface between people and the physical environment. Same as PS 273. Prerequisite: NRES 102 and sophomore or higher standing. Introductory social science course recommended.
NRES 293  **Professional Internship**  credit: 1 TO 4 hours.
Off-campus experience in a field directly pertaining to a subject matter in natural resources and environmental sciences. Approved for both letter and S/U grading. May be repeated to a maximum of 4 hours. Prerequisite: Consent of academic advisor or Department Internship Coordinator.

NRES 294  **Resident Internship**  credit: 1 TO 4 hours.
Supervised, on-campus, learning experience with faculty engaged in research. May be repeated to a maximum of 4 hours. Approved for both letter and S/U grading. Prerequisite: Consent of academic advisor or Department Internship Coordinator.

NRES 295  **Undergrad Research or Thesis**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward degree. Prerequisite: Junior standing, cumulative GPA of 2.5 or above at the time the activity is arranged, and consent of instructor.

NRES 298  **Undergraduate Seminar**  credit: 1 TO 3 hours.
Group discussion on a special topic in a field of study directly pertaining to subject matter in natural resources and environment sciences. May be repeated to a maximum of 12 hours. Prerequisite: Junior standing.

NRES 302  **Dendrology**  credit: 4 hours.
Emphasizes nomenclature, classification, and the distinguishing morphological characteristics of the native and naturalized tree species of North America. Introduces disciplines related to the systematics of tree species, including: morphology, physiology, phenology, ecology, soil-site relationships, silviculture, geographic range and natural distribution, wood characteristics, economic uses, and natural history (including major diseases and insect pests). Incorporates tree and forest habitats that provide cover, breeding sites, and food for a variety of wildlife species. Serves as a basis for studies in natural resources management, environmental science, and for advanced studies of botany, genetics, and tree physiology. Field trips required; fees required. Prerequisite: IB 103.

NRES 310  **Natural Resource Economics**  credit: 3 hours.
Same as ACE 310 and ENVS 310. See ACE 310.

NRES 312  **Biology of Soils**  credit: 3 hours.
Covers the diversity of organisms in the soil, as well as their interactions with one another and their environment. Prerequisite: IB 100 or IB 101 or IB 104 and NRES 201.

NRES 313  **Silviculture**  credit: 3 hours.
The art and science of controlling forest establishment, composition, and growth to fulfill management objectives. Field trips required; fees required. Prerequisite: NRES 302 or HORT 301.

NRES 325  **Forest Land Policy and Admin**  credit: 3 hours.
Examines forest land policies and their administration emphasizing the relationships among resources, politics, and people; current major problems in forest land policy administration and progress toward their solution. Prerequisite: ECON 102 or ACE 100.

NRES 330  **Environmental Communications**  credit: 3 hours.
Same as AGCM 330 and ENVS 330. See AGCM 330.

NRES 331  **Wood Utilization**  credit: 1 hours.
Field and classroom exercises pertaining to logging and milling, conversion of raw wood to useful products, visits to plants, and industrial aspects of wood use.

NRES 336  **Physical Properties of Wood**  credit: 3 hours.
Physical properties of wood and non-wood plant fiber materials, emphasizing the influence of anatomy, density, and moisture content on the dimensional stability of wood materials; wood-liquid relations; thermal, electrical, and acoustical properties of wood. The theory and practice of wood seasoning are studied. Offered in alternate years. Prerequisite: CHEM 102.

NRES 348  **Fish and Wildlife Ecology**  credit: 3 hours.
Application of ecological principles and modeling to management of fish and wildlife populations; significance of abiotic and biotic factors, including life-history parameters in population growth and management; and techniques and procedures for the development of management strategies for animal populations, emphasizing vertebrates. A course in statistics is highly recommended. Same as IB 348. Prerequisite: IB 203 or NRES 219.
NRES 351  Environmental Chemistry  credit: 3 hours.
Chemical background for the understanding of important processes in our changing environment, with special emphasis on global
warming, ozone depletion, water and groundwater pollution, and pesticide fates. Prerequisite: CHEM 104 or CHEM 204.

NRES 352  Plant and Animal Genetics  credit: 4 hours.
Same as ANSC 340 and CPSC 352. See CPSC 352.

NRES 368  Vertebrate Natural History  credit: 4 hours.
Same as IB 368. See IB 368.

NRES 392  Ecology of Urban Wildlife  credit: 3 hours.
Examines the relationships between wildlife and the urban environment, merging the needs of wildlife with those of humans. Topics
include urban landscapes, wildlife problems and benefits to humans, and management considerations for maintaining and controlling
wildlife within urban landscapes. One biology course or one ecology course is highly recommended.

NRES 396  UG Honors Research or Thesis  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the direction of the Honors advisor. May be
repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may
be counted toward degree. Prerequisite: Junior standing, admission to the ACES Honors Program, and consent of instructor.

NRES 401  Watershed Hydrology  credit: 3 hours.
Precipitation, evapotranspiration, stream flow, and other aspects of the hydrologic cycle are studied in a watershed context.
Measurement techniques, statistical analyses of hydrologic data, and simulation modeling are discussed. Case studies that quantify
water movement in specific watersheds are used to integrate course topics. Same as GEOG 401. Prerequisite: CHEM 102, completion
of the Quantitative Reasoning I requirement, and completion of the statistics requirement.

NRES 403  Watersheds and Water Quality  credit: 3 hours.
Examines water quality in streams, rivers, lakes, and wetlands. The responses of watershed systems to pollution and other human
impacts will be described in terms of their biological, geochemical, and physical processes. The technical analyses necessary to
establish policies aimed at preserving or restoring these natural resources will be emphasized. Prerequisite: One of CEE 330, CHEM
232, NRES 351; one of MATH 220, MATH 221, MATH 234.

NRES 406  Fluvial Geomorphology  credit: 4 hours.
Same as GEOG 406 and GEOL 406. See GEOG 406.

NRES 419  Env and Plant Ecosystems  credit: 3 hours.
Relationships among environmental factors and plant processes and functions; impact of human activities on the environment and the
structure and function of plant ecosystems. Examples will be drawn from a variety of managed and unmanaged plant ecosystems. Field
trip required; fee required. Prerequisite: NRES 219 or LA 450 or IB 103 and CHEM 104 or NRES 201.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

NRES 420  Restoration Ecology  credit: 4 hours.
Historical development of ecological restoration, its philosophical foundation, multi-disciplinary borrowings from the natural, applied, and social sciences, and varied practical applications, with emphasis on the application of ecological principles. Case studies, field trips, and laboratory activities on restoration planning. Field trip required; fee required. Prerequisite: NRES 219, IB 441 or LA 450.

NRES 421  Quantitative Methods in NRES  credit: 3 hours.
Examines statistical methods and modeling techniques used in natural resources and environmental sciences; includes applied regression analysis, sampling techniques, and empirical and process modeling. Prerequisite: One of MATH 220, MATH 221, MATH 234; completion of the statistics requirement.

NRES 422  Earth Systems Modeling  credit: 4 hours.
Same as ATMS 421, ESES 421, GEOG 421, and GEOL 481. See ATMS 421.

NRES 427  Modeling Natural Resources  credit: 4 hours.
Development and analysis of ecological models concerning populations, species interactions, disturbances, and management. Environmental problem solving techniques, such as ecological risk assessment, will be emphasized. Prerequisite: One of MATH 220, MATH 221, MATH 234; senior standing.

NRES 429  Aquatic Ecosystem Conservation  credit: 3 hours.
Application of the principles of aquatic ecology to a broad range of conservation issues. The structure and function of aquatic systems are discussed from an ecosystem perspective, including the major threats and disturbances to aquatic ecosystems. Prerequisite: CHEM 102 and PHYS 101 or PHYS 140, and MATH 220 or MATH 221 or MATH 234, and IB 203 or NRES 219.

NRES 430  Comm in Env Social Movements  credit: 3 hours.
Same as AGCM 430, ENVS 430, and SOC 464. See AGCM 430.

NRES 431  Plants and Global Change  credit: 3 hours.
Same as CPSC 431 and IB 440. See CPSC 431.

NRES 438  Soil Nutrient Cycling  credit: 3 hours.
The ecology of decomposition and plant nutrient acquisition in terrestrial soils will be addressed using applied ecology concepts. Discussion will focus on the scientific literature addressing biological, physical, and chemical controls over nutrient availability in soils. Writing assignments will teach students to summarize scientific literature. Students will learn about analytical and quantitative methods used in this field of study and gain the interpretive and communication skills needed to assess and/or carry out applied research in plant and soil science arenas. Same as CPSC 438. Offered in alternate years. Prerequisite: IB 203 or NRES 219, and NRES 201.

NRES 439  Env and Sustainable Dev  credit: 3 hours.
Comprehensive overview and synthesis of global environmental problems and their relationships to human activities, with a focus on ecological and natural resource elements. Concerns include unsound ethics and concepts of development and modernization, the lack of motivation or funding to implement available technical solutions, the promotion of alternative development ethics, and a review of opportunities to maintain or improve the well-being of people, other organisms, and the environment. Same as CPSC 439. Prerequisite: NRES 219 or ACE 210.

NRES 440  Applied Statistical Methods I  credit: 4 hours.
Same as ABE 440, ANSC 440, CPSC 440, and FSHN 440. See CPSC 440.

NRES 442  Functional Ecology of Trees  credit: 3 hours.
Same as IB 442. See IB 442.

NRES 443  Insect Pathology  credit: 4 hours.
Same as CPSC 475 and IB 483. See IB 483.

NRES 444  Social Impact Assessment  credit: 3 OR 4 hours.
Same as ENVS 444, LA 444, RST 444, RSOC 444, and UP 444. See RST 444.

NRES 445  Statistical Methods  credit: 4 hours.
Same as ABE 445 and ANSC 445. See ANSC 445.

NRES 446  Sustainable Planning Seminar  credit: 4 hours.
Same as GEOG 446 and UP 446. See UP 446.
NRES 452  **Community Ecology**  credit: 3 hours.
Same as IB 453. See IB 453.

NRES 454  **GIS in Natural Resource Mgmt**  credit: 3 hours.
Geographic Information Systems (GIS) and remote sensing for natural resource management. Personal computers and GIS software are used to demonstrate the utility of these techniques for data acquisition, image processing, and map modeling. Exercises include problems relevant to the management of natural resources such as land cover mapping, monitoring, suitability and productivity assessment, landscape pattern analysis, land use change analysis, spatial modeling, and decision making.

NRES 455  **Adv GIS for Nat Res Planning**  credit: 2 hours.
Examines the application of Geographic Information Systems (GIS) to natural resource planning and decision making. Integrates principles of decision making in various contexts: public and private, single and multiple criteria, and various forms of management constraints. Management alternatives are then incorporated into a GIS system for further review and analysis. Course combines GIS software with computer-based optimization and quantitative decision making models. Offered in alternate years. Prerequisite: GEOG 479 or NRES 454.

NRES 456  **Integrative Ecosystem Mgmt**  credit: 3 hours.
Examines ecological and human dimensions of ecosystem management through case studies of environmental management settings such as the Greater Yellowstone, Pacific Northwest, Great Lakes, and Mississippi River Basin ecosystems. Capstone course for seniors in natural resource disciplines. Prerequisite: Senior standing; IB 203 or NRES 219 and ACE 100 or ECON 102.

NRES 460  **Anal & Interp Aerial Photo**  credit: 3 OR 4 hours.
Same as GEOG 460. See GEOG 460.

NRES 461  **Ornithology**  credit: 4 hours.
Same as IB 461. See IB 461.

NRES 462  **Ecosystem Ecology**  credit: 3 hours.
Same as IB 452. See IB 452.

NRES 469  **Spatial Ecosystem Modeling**  credit: 3 OR 4 hours.
Same as CPSC 449, GEOG 469, and IB 492. See GEOG 469.

NRES 471  **Pedology**  credit: 3 hours.
The science of soil genesis, classification, and morphology. Includes factors of soil formation, properties and methods used in distinguishing soils, interpretation of soil profiles and soil stratigraphy, causes of soil variability, and the impact of soil properties upon soil management, land-use decisions, and the environment. Prerequisite: NRES 201.

NRES 472  **Environmental Psychology**  credit: 4 hours.
Theory and research in environmental psychology. Topics include environmental perception, cognition, experience, values and emotion, perceived environmental quality, environmental hazards and risk perception, and conservation attitudes and behavior. Same as PSYC 472. Prerequisite: Jr. standing: PSYC 100 or PSYC 103.

NRES 473  **Soil Testing Practicum**  credit: 2 OR 3 hours.
Chemical procedures useful in assessing soil/plant relationships for field crops. Topics include agronomic principles, field sampling, performance of soil tests, interpretation of analytical results, and formulation of nutrient management programs. Field trip required. Additional laboratory work and consent of instructor required for 3 hours. Prerequisite: NRES 201.

NRES 474  **Soil and Water Conservation**  credit: 3 hours.
Application of principles of soil conservation and management to the solution of land-use problems; influence of soil characteristics on erosion control, cropping intensity, water management, and land-use planning. Includes a field trip. Prerequisite: NRES 201.

NRES 475  **Soil Microbiology**  credit: 3 hours.
Metabolic processes leading to chemical transformations in soil and water environments; implications for soil fertility and environmental pollution. Prerequisite: NRES 201 and CHEM 104.

NRES 477  **Introduction to Remote Sensing**  credit: 3 hours.
Same as GEOG 477. See GEOG 477.

NRES 481  **Environmental Research Methods**  credit: 3 hours.
Application of laboratory, field, and instrumental methods to environmental research with soils, sediments, and water. Includes soil sampling, simple statistics in environmental research, making laboratory solutions, biodegradation, cation and anion exchange capacity, atomic absorption and emission spectroscopy, specific-ion electrodes, surface area measurements, volatile organic chemicals in soil,
mass spectroscopy, inductively coupled argon plasma spectroscopy, ion chromatography, determination of soil carbon and nitrogen, adsorption-desorption of solutes, determination of the oxidation states of iron, gas chromatography/HPLC, X-ray diffraction, and techniques for collecting water samples. Prerequisite: CHEM 104.

NRES 487  **Soil Chemistry**  credit: 3 hours.
Emphasizes inorganic reactions involved in soil development and plant nutrition in soils; topics include colloid systems, properties of water, ion exchange equilibria, plant nutrient forms, and methods of analyses. Prerequisite: NRES 201 and CHEM 104.

NRES 488  **Soil Fertility and Fertilizers**  credit: 3 hours.
Factors affecting the supply of available major, secondary, and minor elements in soils and their influence on crop production; evaluating fertilizer and lime needs; and fertilizer manufacture, sources, and application methods. Same as CPSC 488. Prerequisite: NRES 201.

NRES 489  **Physics of Plant Environments**  credit: 4 hours.
The physics of transport processes in the soil and aerial environment of plants; exchanges of energy and gases in crop canopies, and the retention and flow of water, gases, solutes, and heat in soils. Prerequisite: PHYS 101 or PHYS 140; one of MATH 220, MATH 221, MATH 234; NRES 201.

NRES 490  **Surface Water System Chemistry**  credit: 4 hours.
Examines the interaction of chemical and biological processes that govern the chemistry of streams, lakes, and wetlands, and the response of aquatic organisms to pollution. Chemical equilibrium and kinetic principles are used to analyze the behavior of surface water systems through the use of models. Topics include modeling of field studies in environmental inorganic chemistry and biogeochemistry. The laboratory section will be devoted to instruction in the use of computer models and to their practical application. Credit not given for both NRES 490 and CEE 443. Prerequisite: CHEM 104; one of MATH 220, MATH 221, MATH 234.

NRES 493  **Statistical Ecology**  credit: 4 hours.
Same as IB 493. See IB 493.

NRES 499  **Experimental Graduate Courses**  credit: 1 TO 3 hours.
Experimental course on a special topic in natural resources and environmental sciences. May be repeated to a maximum of 12 hours.

NRES 500  **Graduate Seminar**  credit: 1 hours.
Discussions of current research and specialized topics in horticulture, natural resources, and environmental sciences; a seminar must be given by all students in order to receive credit. May be repeated to a maximum of 2 hours. Approved for S/U grading only.

NRES 501  **Special Problems**  credit: 0 TO 4 hours.
Individual studies or investigations in selected branches of horticulture, natural resources, and environmental sciences. Approved for both letter and S/U grading. May be repeated. No more than 8 hours may be counted toward an MS degree.

NRES 502  **Research Methods in NRES**  credit: 4 hours.
Theory and practice of research methods in natural resources, ecology, and environmental sciences. Provides an overview of experimental design and sampling techniques, and includes discussions of discipline-specific statistical methods. One upper division course is recommended.

NRES 508  **Community & Natural Resources**  credit: 4 hours.
Advanced discussion and analysis of theoretical and empirical approaches to the intersection of social and ecological processes at the human community level emphasizing change, conflict, management, and decision-making. Each student will complete a project applying community-related theory to a particular natural resource or environmental problem. Prerequisite: Upper-level undergraduate course or graduate course in social science related to natural resources or environmental issues in NRES, Geography, Human and Community Development, Political Science, Psychology, Recreation Sport and Tourism, Sociology, or related field.

NRES 510  **Adv Natural Resource Economics**  credit: 4 hours.
Same as ACE 510, ECON 515, and ENVS 510. See ACE 510.

NRES 512  **Discussions in NRES**  credit: 1 TO 2 hours.
Discussion of recent developments and current literature in natural resources and environmental sciences, with a term-long emphasis on a particular aspect of the subject matter. May be repeated to a maximum of 4 hours.

NRES 515  **Fundamentals of Geostatistics**  credit: 5 hours.
Application of geostatistical models for characterizing spatial variability of natural phenomena, including exploratory analysis, variography, measurement support, (co)kriging, conditional and unconditional simulation, and uncertainty assessment. Format consists of lectures, discussions, and computer laboratory sessions. Prerequisite: One of MATH 220, MATH 221, MATH 234.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>NRES 516</td>
<td>Ecosystem Biogeochemistry</td>
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<tr>
<td>NRES 540</td>
<td>Public Involvement in Res Mgmt</td>
<td>3 TO 4</td>
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<td>NRES 572</td>
<td>Chemistry of Soil Fertility</td>
<td>4</td>
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<td>NRES 574</td>
<td>Insect Resistance Management</td>
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<td>NRES 580</td>
<td>Solute Transport in Soils</td>
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<td>NRES 586</td>
<td>Soil Organic Matter</td>
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<td>NRES 590</td>
<td>Professionalism and Ethics</td>
<td>2</td>
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<td>NRES 594</td>
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<td>NRES 598</td>
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<tr>
<td>NRES 599</td>
<td>Thesis Research</td>
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Biological, geological, and chemical processes of forest, agricultural, freshwater and marine ecosystems. The effects of pollutants and global change on each ecosystem are addressed along with the biogeochemical interactions among ecosystems. Each student completes a detailed biogeochemical study for a particular ecosystem. A 400-level course in two or more of the following areas are recommended: soil science, aquatic science, ecology, and hydrology. Same as IB 516.

Current topics in public involvement in resource management and environmental planning, including public involvement methods, theory, program evaluation, and needs assessment. Case studies of public involvement programs are used to illustrate concepts and methods. Same as ENVS 540, LA 540, RST 540, RSOC 540, and UP 540. Offered in alternate years.

The chemistry of essential plant nutrients in soils, and their quantitative relationships to plant growth. Offered in alternate years. Prerequisite: NRES 201 and CHEM 121.

Concepts and strategies for managing insect resistance to crop rotation, insecticides, biological control and host-plant resistance. Includes toxicology, population genetics, modeling, economics, and social contexts of insect resistance. Same as CPSC 574 and IB 574. Prerequisite: CPSC 270 or equivalent.

Theoretical and practical aspects of modeling the fate and transport of chemicals through unsaturated soil. Topics include spatial variability (scaling theories, geostatistics), fate and coupled transport processes (adsorption, degradation, preferential flow, dispersion, advection, diffusion, volatility), and associated modeling (parameter estimation; screening, regulatory, and research models, including CDE, stochastic-convective, stream-tube, particle tracking, kinematic wave, stochastic continuum) using analytical and numerical methods. Offered in alternate years. Prerequisite: NRES 489 and MATH 342 or MATH 345.

Explores soil organic matter as one of the most important and integrative characteristics of terrestrial ecosystems. Topics include the nature and origin of humic and non-humic substances in soils and sediments, their critical environmental functions (chemical reactivity and role in nutrient cycling), and the primary methods (elemental analysis, spectroscopy, isotopic methods, and C and N models) used to characterize organic matter and its dynamics. Offered in alternate years. Prerequisite: CHEM 232.

The philosophy and components of graduate education with development of the principles useful in teaching, research, and extension in horticulture, natural resources and environmental sciences. Students will be required to develop and submit a proposal describing planned research for their M.S. or Ph.D. thesis. Approved for S/U grading only.

Experimental course on a special topic in natural resources and environmental sciences. May be repeated to a maximum of 12 hours.

Research conducted in various phases of horticulture, natural resources, and environmental sciences leading to a thesis in natural resources and environmental sciences. Approved for S/U grading only. May be repeated.
**Naval Science**

Naval Science
Head of Department: Kent R. Aitcheson
Captain, USN. Department Office: 236 Armory Building, 505 East Armory, Champaign
Phone: 333-1061
www.uiuc.edu/colleges/naval_science

**NS 100  Leadership Laboratory**  credit: 0 hours.
Noncredit course designed to give the Naval ROTC student, through practical application, a better grasp of the naval science subjects taught in the classroom and a working knowledge of close order drill. Approved for S/U grading only. May be repeated.

**NS 101  Introduction to Naval Science**  credit: 2 hours.
Naval organization and management practices examined within the context of the naval service, command and control, organization for logistics, service and support, functions and services of major components of the Navy and Marine Corps, and shipboard organization with emphasis on management and leadership functions. Prerequisite: Consent of instructor.

**NS 102  Sea Power and Maritime Affairs**  credit: 2 hours.
Investigates the characteristics of sea power and their impact on the affairs of our nation; discusses those characteristics with historical and modern applications to the United States and other world powers.

**NS 199  Naval Science Mgmt Seminar**  credit: 3 hours.
Naval science seminar for discussion of principles of naval organization and management. This course is specifically designed to teach introductory level leadership and management concepts and applications to sophomore level NROTC Midshipmen.

**NS 203  Naval Organization Management**  credit: 3 hours.
Introduction to principles and problems of Naval management and leadership with emphasis upon their relation to the future Naval officer.

**NS 204  Navigation/Naval Operations I**  credit: 3 hours.
Provides the student with an understanding of the theory and techniques of the three types of marine (nautical) navigation: piloting, electronic, and celestial. Prerequisite: Consent of instructor.

**NS 305  Intro to Naval Engineering**  credit: 3 hours.
Studies ship compartmentation, propulsion systems, auxiliary power systems, interior communications, and ship control; types, structure, and purpose of naval ships; and examines elements of ship design and ship stability. Prerequisite: Consent of instructor.

**NS 306  Naval Weapons Systems**  credit: 3 hours.
Introduction to concepts of naval weapons systems, their capabilities and limitations, and their individual and complementary roles in a wide variety of offensive and defensive situations. Prerequisite: Consent of instructor.

**NS 307  Navigation/Naval Operations II**  credit: 3 hours.
Designed to give an understanding of the concepts and use of relative motion principles, international maritime law and the rules of the nautical road, and the fundamentals of U. S. fleet organization, communication, and operations. Prerequisite: NS 301 or consent of instructor.

**NS 308  Leadership and Ethics**  credit: 2 hours.
Provides the student with an understanding of how personal value systems and external ethical requirements affect their leadership styles. Examines Navy organization, personnel administration procedures, human resource management programs, and military justice in terms of current management theory. Prerequisite: NS 203.

**NS 321  Evolution of Warfare**  credit: 3 hours.
Survey of the evolution of warfare emphasizing the philosophies and trends which have been significant in land warfare.

**NS 323  History of Amphibious Warfare**  credit: 3 hours.
Studies amphibious operations and the evolution of amphibious warfare doctrine and development. Prerequisite: Advanced undergraduate standing or consent of instructor.
Nutritional Sciences

Director: Sharon M. Donovan
Program Office: 449 Bevier Hall, 905 South Goodwin, Urbana
Phone: 333-4177
www.nutrsci.uiuc.edu

NUTR 420  **Nutritional Aspects of Disease**  credit: 3 hours.
Same as FSHN 420. See FSHN 420.

NUTR 426  **Biochemical Nutrition I**  credit: 3 hours.
Same as FSHN 426. See FSHN 426.

NUTR 427  **Biochemical Nutrition II**  credit: 3 hours.
Same as FSHN 427. See FSHN 427.

NUTR 428  **Community Nutrition**  credit: 3 hours.
Same as FSHN 428. See FSHN 428.

NUTR 500  **Nutritional Sciences Seminar**  credit: 1 hours.
Discussions of current problems in nutritional sciences. Required of all graduate students in the nutritional sciences program. Approved for S/U grading only. Class Schedule Information: Approved for 0 or 1 credit hour.

NUTR 510  **Topics in Nutrition Research**  credit: 1 hours.
Series of one-third term intensive courses on current topics in nutritional sciences research. Same as ANSC 525 and FSHN 510. May be repeated in the same term to a maximum of 3 hours. Prerequisite: Advanced Biochemistry.

NUTR 511  **Regulation of Metabolism**  credit: 4 hours.
Biochemical and molecular regulatory mechanisms of macronutrient metabolism under various physiological conditions in mammalian species, including humans. Same as ANSC 521 and FSHN 511. Prerequisite: MCB 450, MCB 240 (or equivalent) and an upper division course in nutrition. Second year graduate standing or above, or consent of instructor.

NUTR 550  **Grantsmanship and Ethics**  credit: 2 hours.
Design and implementation of experimental protocols in nutrition. Examines the scientific, regulatory, and ethical context for conducting research in nutrition. The focus of the course will be the writing and evaluation of a simulated peer-reviewed grant proposal. Prerequisite: Advanced nutritional biochemistry and statistics.

NUTR 561  **Advanced Clinical Nutrition**  credit: 2 hours.
Basic pathophysiological changes associated with major organ system failure and appropriate nutritional support and treatment. Provides medical orientation needed for participating in medical nutritional rounds. Same as FSHN 520. May be repeated in the same term to a maximum of 4 hours. Prerequisite: Upper division course in physiology and a course in clinical nutrition.

NUTR 590  **Disciplinary Seminar**  credit: 1 hours.
Discussions of current research and literature pertaining to disciplinary specializations within the Division of Nutritional Sciences. Approved for S/U grading only. May be repeated to a maximum of 2 hours for Masters students and 4 hours for Ph.D. students.

NUTR 593  **Individual Topics in Nutrition**  credit: 1 TO 4 hours.
For students majoring in nutritional sciences who wish to undertake individual studies of a nonthesis nature in problems or topics not covered in other courses; may be taken under the direction of any member of the nutritional sciences faculty, with the exception of the student's own thesis adviser. Prerequisite: Consent of instructor.

NUTR 599  **Thesis Research**  credit: 0 TO 12 hours.
May be repeated. Approved for S/U grading only.
**Pathobiology**

Pathobiology
Head of Department: Daniel Rock
Department Office: 2522 Veterinary Medicine Basic Sciences Building, 2001 South Lincoln Avenue, Urbana
Phone: 333-2449
www.cvm.uiuc.edu/path/

**PATH 190  Discovery Seminar**  credit: 1 TO 5 hours.
May be repeated.

**PATH 290  Undergraduate Research**  credit: 1 TO 5 hours.
Laboratory and/or field studies selected in consultation with a faculty mentor. May be repeated to a maximum of 10 hours. Prerequisite: Consent of instructor.

**PATH 394  Pathobiology**  credit: 1 TO 4 hours.
To be used to designate a trial or experimental course for five or more students. It is designed to be an undergraduate course. A course can be taught under this designation two times within a two-year period and cannot be renewed as PATH 394 course. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

**PATH 410  Comparative Immunobiology**  credit: 4 hours.
Same as ANSC 450 and MCB 442. See ANSC 450.

**PATH 433  Virology & Viral Pathogenesis**  credit: 3 hours.
Emphasizes basic principles of virus structure and replication, virus-cell interactions and virus-host interactions that underlie the molecular biology, pathogenesis, and transmission of viral disease. Same as MCB 433. Prerequisite: MCB 300 or MCB 354, or consent of instructor.

**PATH 439  Health Applications of GIS**  credit: 3 hours.
Students use spatial technologies and data to address issues of health. Topics include disease outbreak surveillance and response, environmental factors such as climate and socio-economic context, and the medical and other data needed to spatial analysis of health information. Application-based learning and class lectures are complemented by readings, guest lectures and class discussions. Geographic information system and global positioning system use is covered with examples drawn from public and veterinary health. Same as GEOG 439 and CHLH 439. Approved for both letter and S/U grading. Prerequisite: An introductory statistics course such as ACE 261, CHLH 244, ECON 202, GEOG 280 or equivalent.

**PATH 474  Principles of Epidemiology**  credit: 4 hours.
Same as CHLH 474 and ENVS 474. See CHLH 474.

**PATH 494  Pathobiology**  credit: 1 TO 4 hours.
To be used to designate a trial or experimental course for five or more students. A course can be taught under this designation two times within a two-year period and cannot be renewed as a PATH 494 course. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

**PATH 511  Seminar in Prod/Pop Medicine**  credit: 1 hours.
Discussion of selected topics and journal articles related to production and population medicine, i.e. health and disease control/prevention decisions that are based on improving productivity, profitability, and maintaining populations of animals. Requires presentation of a formal seminar to receive a letter grade. Same as VCM 511. 1 graduate or professional hour. Approved for both letter and S/U grading. May be repeated to a maximum of 4 hours. Prerequisite: Graduate standing in CVM; PATH 650 or equivalent epidemiology course (requires third year standing in the professional curriculum) and consent of instructors; for graduate students outside CVM, consent of instructors required.

**PATH 512  Seminar in Eukaryotic Microbio**  credit: 1 hours.
Discussion of selected journal articles about findings in the areas of molecular biology, immunology, cell biology and biochemistry of eukaryotic microorganisms. Pathogenic and non-pathogenic organisms will be discussed, i.e.: Trypanosomatids, toxoplasma, malaria, pneumocystis, candida, neurospora, etc. Requires the presentation of a formal seminar. May be repeated to a maximum of 4 hours. Prerequisite: PATH 537 and/or consent of instructor.

**PATH 513  Biomed Grant Proposal Writing**  credit: 3 hours.
Objective of the course is to help develop skills in grant seeking and proposal writing. General information about identification of funding agencies, areas of research and program priorities, components of a grant application, internal institutional review process (i.e., animal

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care and recombinant DNA), formats, scientific integrity, and the review process will be given. The major assignment will consist of a grant proposal writing project carried out with close consultation of the instructor. Due to the nature of this course, enrollment will be limited. Prerequisite: Consent of instructor.

**PATH 514  Molec Mech Bact Pathogenesis**  credit: 2 hours.
Introduction of current research literature on host-microbe interactions. The molecular basis for disease arising from these interactions will be stressed. 2 graduate or professional hours. Prerequisite: One or more 400- or 500-level courses in microbiology, immunology, or biochemistry, and consent of instructor.

**PATH 515  Mechanisms Microbial Infection**  credit: 3 OR 4 hours.
Newer concepts of host-microorganism relations; emphasis on the dynamics and pathogenic mechanisms of microorganisms, immune responses and defense factors of the host, and pathogenesis of specific infections. Lectures, discussions, laboratory, and special problems. Prerequisite: MCB 426 or PATH 632, or equivalent; consent of instructor.

**PATH 516  Epidemiology Infectious Dis**  credit: 3 hours.
Ecology of infection and disease; spread of disease and modes of transmission; methods of control; socioeconomic consideration; selected diseases: malaria, Lyme disease, anaplasmosis, schistosomiasis, salmonellosis, pseudorabies, AIDS. Student presentations. Same as CHLH 516. Prerequisite: Epidemiology class (PATH 650, CHLH 474 or equivalent), or consent of instructor.

**PATH 517  Principle/Method Epidemiology**  credit: 4 hours.
Course covers principles of theoretical and applied epidemiology, with examples from veterinary and human medicine. The aim of the course is to integrate epidemiologic concepts and quantitative methodology in order to evaluate disease risk and treatment options at the individual and population levels. Topics include causal inference, epidemiologic study design, evaluation of bias, outbreak investigation, and special areas within epidemiology. Same as CHLH 517. Prerequisite: Graduate student standing or consent of instructor.

**PATH 518  Concepts/Topics Immunology**  credit: 2 hours.
Study of newer concepts and theories in the field of immunology, with major emphasis on critical review of the primary literature. Topics include: Innate immunity, MTTC, immune regulation, tolerance, autoimmunity, antibodies, and immunopathogenesis of infectious diseases. Lectures and discussion. Same as MCB 586. Prerequisite: Consent of instructor; MCB 427 and MCB 408 recommended.

**PATH 519  Mechanisms Viral Pathogenesis**  credit: 3 hours.
Lecture-discussion on topics of molecular mechanisms of viral pathogenesis. Mechanisms of infection, virulence, viral spread, interaction with the immune system, persistence and other host-parasite relationships are covered using modern literature and in depth exploration of several animal virus systems. Same as MCB 561. Prerequisite: MCB 430 and either MCB 433 or VP 637; MCB 350, MCB 452 or MCB 453; consent of instructor.

**PATH 520  Applied Epidemiology**  credit: 4 hours.
Same as CHLH 578. See CHLH 578.

**PATH 524  Biostatistics**  credit: 4 hours.
Application of statistical methods to epidemiology, clinical and diagnostic medicine, and laboratory biomedical experiments. Topics include descriptive statistics and graphics, reliability, sample size estimation, contingency table analysis, analysis of group differences, survival analysis, correlation and linear regression. Emphasizes use of computerized statistical software in biomedical data analysis. Same as CHLH 590. 4 graduate or professional hours. Students may not receive credit for both PATH 591 and CPSC 440 or IB 488 or EPSY 480.

**PATH 525  Statistics in Epidemiology**  credit: 4 hours.
Same as CHLH 527 and ENVS 527. See CHLH 527.

**PATH 526  Parasitologic Tech/Systematics**  credit: 3 hours.
Survey of taxonomy of animal parasites; structures used for taxonomy are studied after collection, preservation, and preparation of parasite specimens. Prerequisite: PATH 633 or equivalent.

**PATH 527  Parasitology/Epidemiology Sem**  credit: 1 hours.
Discussion of selected historic and current literature related to parasitology. May be repeated to a maximum of 2 hours. Prerequisite: Credit or concurrent registration in PATH 633.

**PATH 528  Multivariate Biostatistics**  credit: 4 hours.
The application of multivariate data analysis to biology, agriculture, and medicine. Includes principal components and factor analysis, multivariate analysis of variance, discriminate analysis, cluster analysis, and multidimensional scaling. Specific applications include clinical diagnosis, nutritional and physiological profile analysis, ecological niche analysis, and patterns of genetic relatedness using molecular genotyping. Computer exercises using standard statistical software are used throughout. Students will also have individual
projects and report their analysis in class presentations. Same as IB 508. Prerequisite: A course in multiple linear regression (PATH 591 or equivalent).

PATH 537  Molecular/Immuno Parasitology  credit: 4 hours.
The molecular basis of parasite function and host/parasite interaction with emphasis on recent developments. Topics include cell biology of parasites, molecular approach to rational chemotherapy, genetic and immunologic mechanisms of parasite survival, diagnosis, and vaccine development. Special attention to AIDS-related parasitic diseases. Prerequisite: Consent of instructor.

PATH 538  Diag Surg Path Exfol Cytology  credit: 3 hours.
This course will cover the requirements for most effectively detecting lesions and obtaining, processing, and interpreting cell and tissue biopsy specimens from all body organ systems. No field trips. Disposable Instruments and supplies required (quantities and costs). BCC Powerpoint assistance - $200.00, Histo - $100.00. No academic assistance required beyond that which is currently available. No student expense of the aforementioned or permanent equipment required that is not currently available. Prerequisite: Graduate student standing or consent of instructor. Preferences for enrollment will be given to candidates with DVM degrees or Medical Scholars.

PATH 541  Diseases Hemato & Lymph Tissue  credit: 4 hours.
Course covers the benign reactive and neoplastic diseases of the bone marrow and lymphoid systems. A comparative approach will be taken with diseases considered from both human and animal aspects utilizing current information on causation, genetic, phenotypic, and morphologic characteristics. Preference for enrollment will be given to candidates with DVM degrees or medical scholars. Prerequisite: Graduate Veterinarian or residency status; or consent of instructor.

PATH 542  Necropsy for Non Path Majors  credit: 1 OR 2 hours.
Course is designed to provide advanced training in veterinary diagnostic pathology for graduate students with majors other than pathology. Teaching material is drawn from diagnostic cases submitted to the Diagnostic Laboratory. Course is adapted individually for each student's major (clinical residency, laboratory animal residency, or graduate research using animals and animal samples). May be repeated to a maximum of 4 hours. Course restricted to graduate students or residents not majoring in pathology. Prerequisite: Graduate student standing or consent of instructor.

PATH 543  Necropsy for Non Path Majors  credit: 1 OR 2 hours.
Course is designed to provide advanced training in veterinary diagnostic pathology for graduate students with majors other than pathology. Teaching material is drawn from diagnostic cases submitted to the Diagnostic Laboratory. Course is adapted individually for each student's major (clinical residency, laboratory animal residency, or graduate research using animals and animal samples). May be repeated to a maximum of 4 hours. Course restricted to graduate students or residents not majoring in pathology. Prerequisite: Graduate student standing or consent of instructor.

PATH 544  Immunobiological Methods  credit: 3 hours.
A number of immunobiological methods and current immunological techniques are introduced in the context of various research designs with reference to their significance, their evolution and historical value. Detailed description of protocols includes optimization of parameters and modifications of conditions to satisfy different research situations and trouble shooting. Students are required to perform the techniques, collect data, analyze results and keep records. Lab reports including documented critical assessment of the attained conclusions are required for each technique. Same as ANSC 554. Approved for both letter and S/U grading. Prerequisite: PATH 632 or MCB 420 or ANSC 525 and consent of instructor.

PATH 545  Vet Diagnostic Path 1  credit: 0 TO 6 hours.
Instruction in diagnostic pathology for pathology majors. Instruction based on necropsy cases with emphasis on necropsy protocol; sample collection and submission; recognition, description, and interpretation of gross and microscopic lesions; and case diagnosis based on all test results. Approved for both letter and S/U grading. May be repeated to a maximum of 10 hours. Prerequisite: Graduate veterinarian, graduate student with major in pathology, and consent of instructors.

PATH 546  Vet Diagnostic Path 2  credit: 0 TO 6 hours.
Instruction in diagnostic pathology for pathology majors. Instruction based on necropsy cases with emphasis on recognition, description, and interpretation of gross and microscopic lesions; evaluation of results of other diagnostic assays; disease pathogenesis; and final case diagnosis and comments. Approved for both letter and S/U grading. May be repeated to a maximum of 10 hours. Prerequisite: PATH 545 and consent of instructors.

PATH 547  Pathology Seminar  credit: 0 TO 1 hours.
Review and discussion of selected pathologic and clinico-pathologic material. Students are required to participate in weekly discussions and present at least one formal seminar per semester, on a topic approved by Pathology faculty. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours. Prerequisite: Consent or concurrent registration in PATH 545, and consent of instructor.

PATH 548  Toxicologic Pathology  credit: 4 hours.
Examines the morphological and biochemical aspects of cellular reactions to injury in acute and chronic toxicities; effect of selected toxic agents on target organs in relation to functional and structural changes induced. Prerequisite: PATH 634; and VB 620 or ANSC 660; or equivalent.

PATH 550  Concepts in Pathology  credit: 4 hours.
Lectures and related discussions of selected topics in experimental and theoretical aspects of general pathology. Emphasis on interdisciplinary approach to the mechanisms of disease. Prerequisite: DVM degree or MS in Biology; consent of instructor.
PATH 551  **Interpretive Cytopathology**  credit: 1 hours.
Discusses selected cytologic material. Emphasizes recognition, interpretation, oral presentation, and written description of cytology case materials. May be repeated to a maximum of 8 hours.

PATH 554  **Mol and Evol Epidemiology**  credit: 4 hours.
Course provides an introduction to the methods and theory of molecular epidemiology. Its primary objective is to demonstrate how molecular genetic data are generated and used to make epidemiological inferences about infectious disease. Students will be introduced to laboratory and analytical techniques from molecular biology and population genetics that are commonly used to reconstruct the origin and spread of infectious agents. A substantial portion of the course will be devoted to discussions of phylogenetic methods of inference. Examples of uses of molecular data in actual epidemiological investigations will be critically evaluated. The overall goal of the course is to equip graduate students with the conceptual tools necessary to evaluate critically epidemiological studies that make use of molecular data and analyses. Prerequisite: PATH 524 or equivalent, or PATH 517 or equivalent, either or both of which may be taken concurrently; or consent of instructor.

PATH 555  **Comparative Oncology**  credit: 4 hours.
Comparative study of the nature of mammalian and avian neoplasms based on general and special methods of tumor identification and classification; lectures, demonstrations, and laboratory. Prerequisite: PATH 634 and PATH 635, or equivalent.

PATH 556  **Exotic/Wild Animal Diag Path 1**  credit: 1 OR 2 hours.
Instruction in the performance of necropsy examinations on exotic and wild animals; emphasizes recognition, interpretation, oral presentations and written descriptions of gross and histologic lesions; emphasizes histologic features of lesions. For pathology majors only. May be repeated to a maximum of 10 hours. Prerequisite: PATH 634 and PATH 635; consent of instructor.

PATH 557  **Exotic/Wild Animal Diag Path 2**  credit: 0 TO 2 hours.
Instruction in the use of supplemental diagnostic data in the areas of bacteriology, clinical pathology, immunology, parasitology, toxicology, and virology in arriving at differential and definitive diagnoses of wild and exotic animals. Pathogenesis of gross and histologic lesions and mechanisms of lesion development are emphasized. For pathology majors only. May be repeated to a maximum of 10 hours. Prerequisite: PATH 556 or equivalent or consent of instructor.

PATH 558  **Exotic/Wild Animal Path Sem**  credit: 0 TO 1 hours.
Discussion of selected pathologic and clinico-pathologic material pertaining to exotic and wild animals and presentation of a formal seminar. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours. Prerequisite: Concurrent enrollment in PATH 556 or PATH 557 or consent of instructor.

PATH 559  **Surgical Pathology**  credit: 0 TO 2 hours.
Discussion and interpretation of disease processes of domestic animals; emphasizes interpretation of pathologic changes in tissue specimens obtained during surgical procedures; correlates structure, function, and prognosis. Approved for both letter and S/U grading. May be repeated to a maximum of 10 hours. Prerequisite: PATH 545 and PATH 555, or equivalent; consent of instructor.

PATH 560  **Spatial Epidemiology**  credit: 4 hours.
Patterns of health and disease in place and time; application of geographic information systems; analysis of time-space relations; clusters and diffusion of disease; geogrpahic epidemiology of selected infectious and noninfectious diseases. Same as CHLH 560 and GEOG 560. 4 graduate hours. Prerequisite: CHLH 560 or equivalent, or PATH 650 or PATH 517 or equivalent; PATH 524 or SOC 485 or equivalent.

PATH 561  **Veterinary Clinical Chemistry**  credit: 1 hours.
Course will focus on the clinical interpretation and physiologic principles behind conventional clinical biochemical testing, and introduce newer concepts and procedures. The course is directed primarily to graduate veterinarians intending to seek board certification from specialty colleges that require basic knowledge of veterinary clinical pathology of their candidates. Approved for both letter and S/U grading. Prerequisite: Graduate Veterinarian or consent of instructor.

PATH 574  **Principles of Epidemiology**  credit: 4 hours.
Same as CHLH 474 and ENVS 474. See CHLH 474.

PATH 575  **Vet Info Tech/Computer App**  credit: 1 hours.
Veterinary applications of word processing, spreadsheet, database, statistical, and health management software packages and various methods of information access and retrieval will be complemented by lecture/discussion and computer laboratory sessions. Prerequisite: Two years of work experience as a veterinarian (post-graduate DVM) or consent of instructor; priority will be given to students enrolled in the Executive Veterinary Program.

PATH 576  **Communication Vet Consultation**  credit: 1 hours.
Utilization of communication as a tool in veterinary consultation and management. Skills will be developed in oral and written communication through assigned presentations, technical reports, newsletters, and business letters. Veterinary applications will be
emphasized. Prerequisite: Two years of work experience as a veterinarian (post-graduate DVM) or consent of instructor; priority will be given to students enrolled in the Executive Veterinary Program.

PATH 577 Vet Leadership Organ Behavior credit: 2 hours.
Leadership principles and organizational theory with practical application to veterinary management and consultation. Includes individual, interpersonal, and organizational influences focusing on current issues in the veterinary profession. Prerequisite: Two years of work experience as a veterinarian (post-graduate DVM) or consent of instructor; priority will be given to students enrolled in the Executive Veterinary Program.

PATH 578 Veterinary Business Management credit: 4 hours.
Instruction in and application of the principles of veterinary business management including economics, decision making, financial management, marketing, and legal issues. Emphasis on specific practice type (small animal, food animal, equine) depending on interest of students. Prerequisite: Two years of work experience as a veterinarian (post-graduate DVM) or consent of instructor; priority will be given to students enrolled in the Executive Veterinary Program.

PATH 579 Adv Concept Swine Health Med 1 credit: 3 hours.
Instruction on the biostatistics involved in the effective analysis of swine production records, diagnostic tests, and clinical trials. Application of epidemiology principles in a swine production setting. Practical diagnostic, treatment, and preventive procedures for disease conditions related to swine production. Prerequisite: Two years of work experience as a veterinarian (post-graduate DVM) or consent of instructor; priority will be given to students enrolled in the Executive Veterinary Program.

PATH 580 Adv Concept Swine Health Med 2 credit: 4 hours.
Illustrate effective methods to monitor and analyze the effects environmental conditions have on swine health and productivity. Design and implementation of programs to ensure product quality and consumer safety. Swine nutrition and lean growth modeling for optimal use of rations and providing nutritional consultation to swine producers. Evaluation, development, and application of genetic programs for swine production. Prerequisite: Two years of work experience as a veterinarian (post-graduate DVM) or consent of instructor; priority will be given to students enrolled in the Executive Veterinary Program.

PATH 590 Seminar credit: 1 hours.
Required of all graduate students whose major is veterinary pathobiology. Approved for both letter and S/U grading.

PATH 591 Design/Analysis Biomed Exper credit: 4 hours.
Principles of sampling, treatment assignment, and statistical analysis applied to biomedical experiments; major emphasis include sample size determination, dose-response functions, single and multifactor designs, randomized blocks and repeated measures, and analysis of covariance. Prerequisite: CPSC 440 or IB 488 or IB 490, CHLH 590, or PATH 591, or consent of instructor.

PATH 592 Special Problems credit: 1 TO 4 hours.
Basic and applied study including orientation and research on pertinent initial and continuing problems in the student’s area of interest. Prerequisite: Consent of instructor.

PATH 593 Econ of Food Animal Health credit: 3 hours.
Concepts and procedures for economically driven decision-making with special emphasis on veterinary medicine. Topics will include: partial budgeting, enterprise budgeting, break-even analysis, decision analysis, production economics, computer modeling and benefit-cost analysis. Published scientific literature will be reviewed to provide practical examples of economic decision-making in optimizing animal health management. 3 graduate or professional hours. Prerequisite: Graduate Veterinarian; VP 650 or equivalent epidemiology course (requires third year standing in the professional curriculum); or consent of instructor.

PATH 594 Veterinary Pathobiology credit: 1 TO 4 hours.
Course is to be used to designate a trial or experimental course for five or more students, designed to be an elective in the CVM graduate curriculum. A course can be taught under this designation two times within a two year period and cannot be renewed as a PATH 594 course. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Prerequisites for each experimental course may vary and must be stated in a course outline prior to departmental approval.

PATH 596 Interdisciplinary Tox Sem credit: 1 hours.
Same as ENVS 596 and VB 596. See VB 596.

PATH 598 Non-Thesis Research credit: 1 TO 8 hours.
Independent research to fulfill requirement for non-thesis alternative in Master of Science program only. Approved for S/U grading only. May be repeated to a maximum of 8 hours if topics vary. Students may not receive credit for both PATH 598 and PATH 599. Prerequisite: Must be Graduate Veterinarian.

PATH 599 Thesis Research credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
PATH 631  Vet Bacteriology and Mycology  credit: 4 hours.
Study of the properties of bacteria and fungi responsible for diseases of domestic and wild animals; emphasizes epidemiology, pathogenesis, and morphological and cultural characteristics of bacteria and fungi, and diagnosis. 4 graduate or professional hours. Prerequisite: Second-year standing in veterinary curriculum or consent of instructor.

PATH 632  Veterinary Immunology  credit: 3 hours.
Fundamental principles of immunology; mechanisms and functions of the humoral and cell-mediated immune responses; role of the immune system in protection against infectious diseases and tumors; immune dysfunctions and diseases of immunologic origins. Lectures and laboratory. 3 graduate or professional hours. Prerequisite: First-year standing in the veterinary curriculum or consent of instructor.

PATH 633  Veterinary Parasitology  credit: 4 hours.
Protozoan, arthropod, helminth parasites affecting domestic animals and humans; lectures, discussions, and laboratory. 4 graduate or professional hours. Prerequisite: Second-year standing in veterinary curriculum or 20 hours in chemistry or animal biology, or both.

PATH 634  General Pathology  credit: 4 hours.
Cellular, organic and systemic reactions to acute and chronic injury related to infections, circulatory disturbances, intoxications, parasitisms, immunologic disorders, metabolic disturbances and disturbances of growth; lectures, demonstrations, and laboratories; microscope required (for those not in the professional curriculum). 4 graduate or professional hours. Prerequisite: Second year standing in the veterinary curriculum or 25 hours of histology, physiology, parasitology, and microbiology, or consent of instructor.

PATH 635  Pathology of Organ Systems  credit: 4 hours.
Teaches the pathologic basis of veterinary disease processes affecting organs and anatomic systems in domestic animal species. Includes mechanisms of and responses to cell and tissue injury in a chronological sequence of events (portal of entry - target cells - cellular injury - visual appearance of injury - resolution of injury - clinical outcomes), interplay of host defense and reparative mechanisms with microbes and injurious agents, and the recognition of and interpretation of macroscopic and microscopic lesions that result from such injury. 4 graduate or professional hours. Prerequisite: Second-year standing in veterinary curriculum or consent of instructor.

PATH 636  Advanced Clinical Pathology  credit: 2 hours.
A case-based approach to clinical pathology. Students are required to critically evaluate clinical case data, turn in a written description of the case and be a discussion leader for at least one class period. students will be provided with basic history and signalment of cases and with laboratory data including CBC, clinical chemistry, urinalysis and occasionally additional data. Focuses on the dog and cat, however horse and food animal cases will be presented. Prerequisite: PATH 638.

PATH 637  Veterinary Virology  credit: 3 hours.
Fundamental principles of animal virology; mechanisms of virus-cell and virus-host interactions; explores properties of the major groups of animal virus in relation to replication and pathogenesis of viral disease. Lecture and laboratory. 3 graduate or professional hours. Prerequisite: Second-year standing in the veterinary curriculum or consent of instructor.

PATH 638  Veterinary Clinical Pathology  credit: 4 hours.
Discussion of the function and interpretation of hematological, serum and urine, chemical and certain other analyses as aids in the diagnosis of animal diseases; emphasis is on the correlation of laboratory and clinical manifestations of disease. 4 professional hours. Prerequisite: Second-year standing in veterinary curriculum.

PATH 640  Conservation Ecosystem Health  credit: 1 OR 2 hours.
Introduction to the use of medical reasoning and technology in the conservation of threatened animals and ecosystems. Includes distance-based videoconference lectures by the faculty at the Loyola University Medical College and the Brookfield Zoo. Lectures and student presentations. Same as ANTH 433. Approved for both letter and S/U grading. Prerequisite: Enrollment in the Veterinary curriculum or graduate program.

PATH 641  Food Safety and Public Health  credit: 2 hours.
Introduction to public health; diseases of animals transmissible to man; and procedures and techniques used in inspection of food of animal origin. 2 graduate or professional hours. Prerequisite: Second-year standing in veterinary curriculum or consent of instructor.

PATH 643  Diseases of Poultry  credit: 1 hours.
The causes, symptoms, lesions, prevention, and treatment of noninfectious and infectious diseases of domestic birds; lectures, quizzes, and PLATO demonstrations. Prerequisite: Third-or fourth-year standing in veterinary curriculum or consent of instructor.

PATH 648  Veterinary Cytopathology  credit: 2 hours.
Evaluation of slides prepared from body fluids, aspirates of abnormal skin or subcutaneous lesions, aspirates of internal organs, tracheal washes and bronchial alveolar lavages for the purpose of determining the etiology of abnormal lesions or organ dysfunction.
Microscopes are furnished. Same as VCM 548. Approved for S/U grading only. Prerequisite: PATH 638, third or fourth year standing in veterinary curriculum.

**PATH 650  Epidemiology  credit: 2 hours.**

Principles and uses of epidemiology and biostatistics in the practice of veterinary medicine. 2 graduate or professional hours. Prerequisite: Second-year standing in veterinary curriculum.

**PATH 660  Biology of Emerging Infect Dis  credit: 3 hours.**

Discusses the biology of emerging and re-emerging infectious disease pathogens; examples of various bacterial, parasitic, and viral pathogens are presented to characterize the diverse mechanisms and factors that enable these agents to emerge; possible corrective and/or preventative approaches are explored. 3 graduate or professional hours. Approved for both letter and S/U grading. Prerequisite: PATH 631 or MCB 426; PATH 632 or MCB 408; and PATH 637 or MCB 433; or consent of instructor.

**PATH 669  Veterinary Diagnostic Medicine  credit: 1.5 TO 3 hours.**

For VM-4 professional students, a veterinary diagnostic medicine clerkship in the Veterinary Diagnostic Laboratory. 1.5 to 3 professional hours. Approved for S/U grading only. May be repeated in the same or separate terms to a maximum of 4.5 hours. Prerequisite: Fourth year standing or its equivalent in veterinary curriculum.

**PATH 670  Computer Info Competency  credit: 2 hours.**

Introduction to computer-mediated communication and information management tools of special interest to veterinary students and veterinarians. Satisfactory/unsatisfactory grading based on successful completion of eight to ten projects covering e-mail, listservs and newsgroups, telnet, FTP, bibliographic database and World Wide Web searching, Web page authoring and publication, personal spreadsheets and databases. Formal instruction and project submission via the Internet. Weekly help sessions available on-site. Approved for S/U grading only. Prerequisite: Enrollment in the veterinary curriculum.

**PATH 671  Epidemiology and the Media  credit: 1 OR 2 hours.**

Seminar based on student presentation of current epidemiological topics, followed by class discussion. Topics originate from popular media accounts, combined with information from original scientific communications. Outside speakers provide alternative views about the role of the media in presenting scientific issues. Same as CHLH 571. 1 professional hour. 1 or 2 graduate hours. Approved for S/U grading only. Prerequisite: Enrollment in the veterinary curriculum.

**PATH 692  Special Problems  credit: 1 TO 3 hours.**

Individual research on a special problem chosen in consultation with the instructor and department head. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours if topics vary. 1 to 3 graduate or professional hours. Prerequisite: Registration in veterinary curriculum with grade-point average of 3.0 or above, or consent of instructor.

**PATH 694  Veterinary Pathobiology  credit: 1 TO 3 hours.**

To be used to designate a trial or experimental course for five or more students, designed to be an elective in the CVM professional curriculum. The course can be taught under this designation for two years or two offerings, whichever time is greater. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours if topics vary. Prerequisite: Registration in the veterinary curriculum or consent of instructor.
Plant Biology

Plant Biology
Head of Department: Feng Sheng Hu
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PBIO 599  **Thesis Research**  credit: 0 TO 16 hours.
Individual work under supervision of members of the staff in their respective fields. Approved for S/U grading only. May be repeated.
PERS 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

PERS 201  **Elementary Persian I**  credit: 5 hours.
Introduction to Persian, including conversation with a native speaker under the direction of a linguist-instructor, and a minimum of formal grammar and writing.

PERS 202  **Elementary Persian II**  credit: 5 hours.
Continuation of PERS 201, with introduction of more advanced grammar and with emphasis on more fluency in speaking and reading. Prerequisite: PERS 201 or equivalent.

PERS 205  **Intro Persian Culture & Lit I**  credit: 3 hours.
A survey of Persian civilization with emphasis on Persian literary and aesthetic expression. Same as CWL 203. Knowledge of Persian is not required.

PERS 206  **Intro Persian Culture & Lit II**  credit: 3 hours.
Continuation of PERS 205. Survey of Persian civilization with emphasis on Persian literary and aesthetic expression. Same as CWL 204. Knowledge of Persian is not required.

PERS 403  **Intermediate Persian I**  credit: 4 hours.
General review of the essentials of grammar, selected reading of materials emphasizing Iranian life and culture, compositions, and practice in speech. Prerequisite: PERS 202.

PERS 404  **Intermediate Persian II**  credit: 4 hours.
General review of the essentials of grammar, selected reading of materials emphasizing Iranian life and culture, compositions, and practice in speech. Prerequisite: PERS 403.
PHIL 100  Intro to Philosophy-ACP  credit: 3 hours.
Consideration of some main problems of philosophy concerning, for example, knowledge, God, mind and body, and human freedom.
Course is identical to PHIL 101 except for the additional writing component. Credit is not given for both PHIL 100 and PHIL 101.
Prerequisite: Completion of campus Composition I general education requirement.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Advanced Composition

PHIL 101  Introduction to Philosophy  credit: 3 hours.
Consideration of some main problems of philosophy concerning, for example, knowledge, God, mind and body, and human freedom.
Credit is not given for both PHIL 101 and PHIL 100.

PHIL 102  Logic and Reasoning  credit: 3 hours.
Practical study of logical reasoning; techniques for analyzing and criticizing arguments, with emphasis on assessing the logical coherence of what we read and write.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

PHIL 103  Logic and Reasoning QR II  credit: 3 hours.
Introductory logic course that concentrates on investigating how the formal mathematical structure of statements, as well as the structure of the relationships among such statements, reveals the logical force of arguments that we use everyday. PHIL 102 takes a less formal, less mathematical approach to the same material. Students may not receive credit for both PHIL 103 and PHIL 102.

PHIL 104  Intro to Ethics-ACP  credit: 3 hours.
Course is identical to PHIL 105 except for the additional writing component. Credit is not given for both PHIL 104 and either PHIL 105 or PHIL 106.
Prerequisite: Completion of campus Composition I general education requirement.

PHIL 105  Introduction to Ethics  credit: 3 hours.
Some basic questions of ethics, discussed in the light of influential ethical theories and with reference to specific moral problems, such as: what makes an action morally right? are moral standards absolute or relative? what is the relation between personal morality and social morality, and between social morality and law? Credit is not given for both PHIL 105 and either PHIL 104 or PHIL 106.

PHIL 106  Ethics and Social Policy  credit: 3 hours.
Examination of the moral aspects of social problems, and a survey of ethical principles formulated to validate social policy. Credit is not given for both PHIL 106 and either PHIL 104 or PHIL 105.

PHIL 107  Intro to Political Philosophy  credit: 3 hours.
Examination of the philosophical bases of democracy and some alternative political forms.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

PHIL 108  Religion & Society in West I  credit: 3 hours.
Same as ANTH 108, RLST 108, and SOC 108. See RLST 108.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

PHIL 109  Religion & Society in West II  credit: 3 hours.
Same as ANTH 109, RLST 109, and SOC 109. See RLST 109.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

PHIL 110  World Religions  credit: 3 hours.
Same as RLST 110. See RLST 110.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

PHIL 191  Freshman Honors Tutorial  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars and Associates. May be repeated one time. Prerequisite: Consent of departmental honors advisor.

PHIL 198  Freshman Seminar  credit: 3 hours.
Investigation of selected fundamental topics of philosophical inquiry. See Schedule for current topics. Prerequisite: Freshman James Scholar.

PHIL 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

PHIL 201  Philosophy in Literature  credit: 3 hours.
Consideration of the philosophical themes implicit in a variety of important literary works, both classical and modern; may include such authors as Sophocles, Shakespeare, Goethe, Dostoevsky, and Sartre.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

PHIL 202  Symbolic Logic  credit: 3 hours.
Introduction to the techniques of formal logic, dealing primarily with truth-functional logic and quantification theory.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

PHIL 203  Ancient Philosophy  credit: 4 hours.
Introduction to ancient philosophy, concentrating on Plato and Aristotle, dealing with such topics as metaphysics, ethics, and the theory of knowledge.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

PHIL 206  Early Modern Philosophy  credit: 4 hours.
The history of philosophy from Descartes to Kant.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

PHIL 210  Ethics  credit: 3 hours.
Problems in ethical theory; the nature of right and wrong, justice, conscience, moral feelings, etc.
This course satisfies the General Education Criteria for a:
PHIL 214  **Biomedical Ethics**  credit: 3 hours.
Philosophical study of selected moral and social problems concerning medicine and biology, such as euthanasia, abortion, allocation of scarce medical resources, health care and rights, and genetic engineering.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

PHIL 230  **Philosophy of Religion Intro**  credit: 3 hours.
Introduction to philosophical analysis of religious thought and experience. Same as RLST 230.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

PHIL 250  **Conceptions of Human Nature**  credit: 3 hours.
Comparative examination of important historical and contemporary conceptions of human nature.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

PHIL 270  **Philosophy of Science**  credit: 3 hours.
Investigation of the nature of scientific knowledge by examining archetypal examples from physical science (e.g., Ptolemaic and Copernican astronomy); nature of scientific truth, validation of theories, nature of scientific theories, evolution of theories, experimental procedure, role of presuppositions, scientific revolutions, etc.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

PHIL 316  **Engineering Ethics**  credit: 3 hours.
Same as ECE 316. See ECE 316.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Advanced Composition

PHIL 317  **Scientific Thought I**  credit: 3 hours.
Historical and critical survey of the development of science and its philosophical interpretation to the death of Newton. Same as HIST 363.

PHIL 318  **Scientific Thought II**  credit: 3 hours.
Historical and critical survey of the development of science and its philosophical interpretation from the death of Newton to the early twentieth century. Same as HIST 366. Prerequisite: PHIL 317.

PHIL 325  **Recent European Philosophy**  credit: 3 hours.
Introduction to the major recent philosophical movements in Europe, such as phenomenology, existentialism, philosophical anthropology, and neo-Marxism.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

PHIL 351  **Thinking and Reasoning**  credit: 3 hours.
Same as PSYC 351. See PSYC 351.

PHIL 356  **Evolution of Mind**  credit: 3 hours.
Same as PSYC 356. See PSYC 356.

PHIL 357  **Intro Cognitive Science**  credit: 3 hours.
Same as PSYC 357. See PSYC 357.

PHIL 380  **Current Controversies**  credit: 3 hours.
Philosophical examination of positions taken on some issue of current concern, e.g., human sexuality, death and dying, feminism, race, intelligence, war, and sociobiology. See Schedule for current topics. May be repeated with approval.

PHIL 385  **The Ethics of War and Peace**  credit: 3 hours.
Philosophical examination of normative issues relating to war and peace. Same as GLBL 385 and RLST 385.
PHIL 390  **Individual Study**  credit: 2 TO 4 hours.
Readings in selected philosophical topics. Course may be taken by honors students in partial fulfillment of department honors requirements. May be repeated to a maximum of 6 hours. Prerequisite: Open to juniors and seniors with a grade-point average of 3.0 only by prior arrangement with a regular member of the staff and with consent of the department chair.

PHIL 398  **Advanced Undergraduate Seminar**  credit: 3 hours.
Seminar on selected philosophical topics; intended primarily for advanced undergraduate philosophy majors. May be repeated to a maximum of 6 hours. Prerequisite: A grade-point average of 3.0 and consent of instructor.

PHIL 401  **Philosophy and Film**  credit: 4 hours.
Study of procedures for interpreting narrative films and evaluating specific interpretations, as well as an examination of philosophical issues raised in selected films. Same as CINE 401. Prerequisite: One course in philosophy or in cinema studies.

PHIL 404  **Medieval Philosophy**  credit: 3 OR 4 hours.
History of philosophy from St. Augustine to William of Ockham. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: PHIL 101 or PHIL 203.

PHIL 410  **Classical Ancient Philosophers**  credit: 3 OR 4 hours.
Intensive study of one ancient philosopher or the intensive study of a major philosophical problem through the consideration of a number of ancient philosophers; chief emphasis on Plato and/or Aristotle. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated with approval. Students may register in more than one section per term. Prerequisite: One course in philosophy, preferably PHIL 203.

PHIL 411  **Nineteenth Century Philosophy**  credit: 3 OR 4 hours.
Examination of the thought of such major figures as Hegel, Marx, and Nietzsche. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 412  **Classical Modern Philosophers**  credit: 3 OR 4 hours.
Intensive study of one, or in special cases, two major philosophers of the period 1600-1900, e.g., Descartes, Hume, Kant, or Hegel. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated. Students may register in more than one section per term. Prerequisite: One course in philosophy.

PHIL 413  **American Philosophy**  credit: 3 OR 4 hours.
Examination of American philosophers from colonial to recent times, for example, Edwards, Peirce, James, Dewey. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 414  **Major Recent Philosophers**  credit: 3 OR 4 hours.
Intensive study of one or two important philosophers of the present century, e.g., Wittgenstein, Dewey, Heidegger, or Quine. Topics vary; see Class Schedule. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated with approval. Students may register in more than one section per term. Prerequisite: One course in philosophy.

PHIL 416  **Recent Anglo-American Phil**  credit: 3 OR 4 hours.
Introduction to the major philosophical developments in England and America in the 20th century, focusing on such writers as G. E. Moore, Bertrand Russell, A. J. Ayer, Ludwig Wittgenstein, and W. V. Quine. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 419  **Space, Time, and Matter-ACP**  credit: 3 OR 4 hours.
Same as PHYS 419. See PHYS 419.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

PHIL 420  **Space, Time, and Matter**  credit: 2 hours.
Same as PHYS 420. See PHYS 420.

PHIL 421  **Ethical Theories**  credit: 3 OR 4 hours.
Systematic study of selected classics in moral philosophy by such philosophers as Aristotle, Hume, and Kant. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 422  **Recent Developments in Ethics**  credit: 3 OR 4 hours.
Intensive treatment of issues in contemporary ethical theory. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated one time with approval. Prerequisite: One course in ethics.
PHIL 423  Philosophy of Art  credit: 3 OR 4 hours.
Examination of philosophical interpretations of art and aesthetic experience by influential classical and recent writers. 3 undergraduate hours. 3 or 4 graduate hours.

PHIL 424  Philosophy of Religion  credit: 3 OR 4 hours.
Considers central issues in the philosophy of religion, e.g., the justification of religious belief, the nature of God, religious experience, etc. Same as RLST 424. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 425  Philosophy of Mind  credit: 3 OR 4 hours.
Philosophical problems arising in connection with mental phenomena; the relation of mind and body; free will and determinism; our knowledge of other minds; and the self and personal identity. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 426  Metaphysics  credit: 3 OR 4 hours.
Investigation of various metaphysical issues concerning, for example, existence, substance, particulars and universals, and space and time. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 427  Philosophical Anthropology  credit: 3 OR 4 hours.
Philosophical approaches and contributions to the understanding of human nature. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated with approval to a maximum of 6 undergraduate hours, or 8 graduate hours. Prerequisite: One course in philosophy (preferably PHIL 101, PHIL 203, PHIL 206, PHIL 325 or PHIL 250).

PHIL 429  Value Theory  credit: 3 OR 4 hours.
Study of the nature and status of values, and of variable topics in value theory, e.g., different types of values, and problems of truth, justifiability, objectivity and relativism with respect to them. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated as topics vary to a maximum of 6 undergraduate hours, or 8 graduate hours. Prerequisite: Junior standing.

PHIL 430  Theory of Knowledge  credit: 3 OR 4 hours.
Investigation of issues concerning, for example, the nature and possibility of knowledge; its forms and limits; its relation to belief, truth, and justification; and the nature of truth. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 433  Evolutionary Neuroscience  credit: 3 OR 4 hours.
Same as NEUR 433 and PSYC 433. See PSYC 433.

PHIL 435  Social Philosophy  credit: 3 OR 4 hours.
Selected topics from the nature of social organization, nature and convention, utility, justice, equality, liberty, rights, and duties. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: PHIL 105, PHIL 106, or PHIL 421, or consent of instructor.

PHIL 436  Phil of Law and of the State  credit: 3 OR 4 hours.
Examination of issues in the philosophy of law, such as the nature of law, law and morality, justice, liberty and authority, punishment, and legal responsibility. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 437  Semantics  credit: 3 OR 4 hours.
Study of semantical concepts such as meaning, truth, reference, and denotation; the relation of meaning, verification, and truth; and semantical paradoxes. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: A course in logic.

PHIL 438  Philosophy of Language  credit: 3 OR 4 hours.
Historical or comparative study of the philosophy of language. Same as LING 438. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 439  Philosophy of Mathematics  credit: 3 OR 4 hours.
Introduction to some of the main philosophical problems and contemporary viewpoints concerning mathematical concepts, mathematical methods, and the nature of mathematical truth. Same as MATH 439. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

PHIL 441  Existential Philosophy  credit: 3 OR 4 hours.
Study of a selection of the major writings of the more important existential philosophers, e.g., Heidegger, Jaspers, and Sartre. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy (preferably PHIL 325 or PHIL 411), or consent of instructor.

PHIL 443  Phenomenology  credit: 3 OR 4 hours.
Study of the development of phenomenology from Husserl to the present. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: One course in philosophy.

**PHIL 444  Topics in Recent European Phil**  credit: 3 OR 4 hours.
Examines the continental treatments of selected issues, such as interpersonal relationships, human nature, perception or interpretation; see Class Schedule for current topics. 3 undergraduate hours. 3 or 4 graduate hours. May be repeated in separate terms as topics vary to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: PHIL 325, PHIL 411, PHIL 441, PHIL 443, or PHIL 447; or consent of instructor.

**PHIL 453  Formal Logic and Philosophy**  credit: 3 OR 4 hours.
Techniques and results of symbolic logic, with special attention to topics of philosophical importance. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: PHIL 202, graduate standing, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

**PHIL 454  Advanced Symbolic Logic**  credit: 3 OR 4 hours.
Completeness, compactness, and Lowenheim-Skolem theorems for first-order logic; incompleteness and undecidability of formal systems; and additional material on proof theory, model theory, or axiomatic set theory as time permits. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: PHIL 202 or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

**PHIL 471  Contemporary Phil of Science**  credit: 3 OR 4 hours.
Examines important developments and controversies in recent philosophy of science. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in philosophy.

**PHIL 473  Philosophy of Biology**  credit: 3 OR 4 hours.
Philosophical issues in biology covering basic concepts such as fitness, evolution, adaptation, natural selection, and issues such as the unit of selection, genetic reductionism, cultural evolution. Same as IB 495. 3 undergraduate hours. 3 or 4 graduate hours. Graduate students taking the course for 4 hours will be expected to do additional reading and write more substantial papers. Prerequisite: Two courses in philosophy or two courses in biology; or consent of instructor.

**PHIL 477  Philosophy of Psychology**  credit: 3 OR 4 hours.
Psychology, broadly construed, is a cluster of disciplines devoted to the study of mind and behavior, including cognitive and developmental psychology, neuroscience, and artificial intelligence. Investigates the relationships that these disciplines bear to one another and of their overall potential to resolve age-old philosophical questions about the mind. Same as PSYC 477. 3 undergraduate hours. 4 graduate hours. Prerequisite: Two courses in philosophy or two courses in psychology or consent of instructor.

**PHIL 492  Thesis**  credit: 2 TO 4 hours.
Special training in philosophical investigation. Course may be taken by honors students in partial fulfillment of department honors requirements. 2 or 4 undergraduate hours. No graduate credit. May be repeated to a maximum of 4 undergraduate hours. Prerequisite: Open to seniors with a grade-point average of 3.0 only by prior arrangement with a regular member of the staff and with consent of the department chair.

**PHIL 501  Seminar History of Philosophy**  credit: 2 TO 4 hours.
Study of selected major philosophers, movements, problems, or topics in the history of philosophy; see Class Schedule for current topics. Approved for both letter and S/U grading. May be repeated. Students may register in more than one section per term. Prerequisite: Consent of instructor for non-philosophy graduate students.

**PHIL 511  Seminar Ethical Theory**  credit: 2 TO 4 hours.
Intensive study of problems in ethical theory. Approved for both letter and S/U grading. May be repeated if topics vary. Students may register in more than one section per term. Prerequisite: Consent of instructor for non-philosophy graduate students.

**PHIL 512  Seminar Social Philosophy**  credit: 2 TO 4 hours.
Seminar designed to study special problems in social philosophy. See Schedule for current topics. Approved for both letter and S/U grading. May be repeated. Prerequisite: Consent of instructor for non-philosophy graduate students.

**PHIL 513  Seminar Philosophy of Logic**  credit: 2 TO 4 hours.
Selected topics in contemporary logical theory. Approved for both letter and S/U grading. May be repeated. Prerequisite: Consent of instructor for non-philosophy graduate students.

**PHIL 514  Seminar in Cognitive Science**  credit: 2 OR 4 hours.
PHIL 517  Seminar Philosophy of Science  credit: 2 TO 4 hours.
Various problems arising from specific studies in philosophy pertaining to science and vice versa. To be offered with varying topics. Approved for both letter and S/U grading. May be repeated. Prerequisite: Consent of instructor for non-philosophy graduate students.

PHIL 520  Seminar Semantics  credit: 2 TO 4 hours.
Intensive study of important contemporary contributions in the fields of semantics, analytic philosophy, and the philosophy of language. Same as MDIA 520. May be repeated. Prerequisite: Graduate standing in philosophy or equivalent.

PHIL 521  Seminar Contemporary Problems  credit: 2 TO 4 hours.
Intensive study of selected problems or topics in contemporary philosophy. Approved for both letter and S/U grading. May be repeated. Students may register in more than one section per term. Prerequisite: Consent of instructor for non-philosophy graduate students.

PHIL 523  Seminar Theory of Knowledge  credit: 2 TO 4 hours.
Selected topics and writings of major importance in the contemporary philosophy of knowledge. Approved for both letter and S/U grading. May be repeated. Prerequisite: consent of instructor for non-philosophy graduate students.

PHIL 525  Seminar Philosophy of Mind  credit: 2 TO 4 hours.
Selected topics from major writings in the philosophy of mind. Approved for both letter and S/U grading. May be repeated. Prerequisite: Consent of instructor for non-philosophy graduate students.

PHIL 530  Dissertation Seminar  credit: 3 hours.
Ongoing dissertation seminar required for all students who have passed the prelim requirement. Approved for S/U grading only. May be repeated in separate terms to a maximum of 24 hours. Prerequisite: Restricted to students satisfying requirements for the Ph.D. degree.

PHIL 583  Individual Topics  credit: 2 OR 4 hours.
Individual study and oral and written reports on topics not covered in other courses. Topics and plan of study must be approved by the candidate's adviser and by the staff member who directs the work. (Summer session, 2 to 8 hours).

PHIL 590  Directed Research  credit: 0 TO 12 hours.
Restricted to students satisfying requirements for the master's degree by writing a substantial essay. Approved for both letter and S/U grading. Normally taken for 8 hours credit but may be taken for 12 hours credit with consent of department chair.

PHIL 599  Thesis Research  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
PHYS 100 Thinking About Physics  credit: 1 hours.
Designed for students who want to prepare for PHYS 211 by improving their conceptual and problem solving skills. Shows how to analyze physical situations, describe them mathematically, and understand the meaning of the solutions. Examples will be drawn from material that will be covered in PHYS 211. PHYS 100 and PHYS 211 may be taken concurrently. Approval of the department is required to register. Prerequisite: Credit or concurrent registration in MATH 220 or MATH 221.

PHYS 101 College Physics: Mech & Heat  credit: 5 hours.
Newton’s Laws, work and energy, rotational motion, fluids, thermodynamics, and waves. A noncalculus-based course for students in the life sciences, preprofessional health programs, agriculture, and veterinary medicine. Credit is not given for both PHYS 101 and either PHYS 211 or PHYS 213. Prerequisite: Trigonometry.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

PHYS 102 College Physics: E&M & Modern  credit: 5 hours.
Electric forces and fields, electric potential, electric circuits, magnetic forces and fields, geometrical optics, relativity, and modern physics. A noncalculus-based course for students in life sciences, preprofessional health programs, agriculture, and veterinary medicine. Credit is not given for both PHYS 102 and either PHYS 212 or PHYS 214. Prerequisite: PHYS 101.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

PHYS 110 Physics Careers  credit: 0 hours.
Provides an understanding of how undergraduate training in physics can serve as a foundation for careers of both a traditional and non-traditional character in today's world. Includes outside speakers who are representative of the broad spectrum of possible careers after receiving a physics degree. Approved for S/U grading only.

PHYS 123 Physics Made Easy  credit: 3 hours.
Designed for students who are interested in explaining and teaching science to children at the elementary school level. A hands-on inquiry-based approach to learning is used. No math or physics background needed. Topics cover most of the National Science Education K-4 Content Standards. Students assemble and keep a science teaching tool-kit.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

PHYS 140 How Things Work  credit: 3 hours.
Nonmathematical lecture-demonstration course for nonscience students, underscoring the generality and ubiquity of basic physical laws in understanding commonplace phenomena: musical instruments, photography, electric and electronic circuits, television, motors, engines, etc. Credit is not given to engineering majors.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

PHYS 141 Special Problems  credit: 1 hours.
Special problems in physics: discussions and independent study. Supplement to PHYS 140. Prerequisite: Credit or concurrent registration in PHYS 140.

PHYS 150 How Nature Works  credit: 3 hours.
Nonmathematical attempt to bridge the two-culture gap; takes examples from modern physics: relativity, elementary particles, quantum theory, statistics, etc., and covers basic philosophical concepts in physics which pervade all human disciplines: model-making, dynamics, ensemble behavior, and symmetry. Lecture format.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

PHYS 151  Special Problems  credit: 1 hours.
Special problems in physics: discussions and independent study. Supplement to PHYS 150. Prerequisite: Credit or concurrent registration in PHYS 150.

PHYS 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

PHYS 211  University Physics: Mechanics  credit: 4 hours.
Newton's Laws, work and energy, static properties and fluids, oscillations, transverse waves, systems of particles, and rotations. Lectures with demonstrations, discussions and laboratory. For students in engineering, mathematics, physics and chemistry. Credit is not given for both PHYS 211 and PHYS 101. Prerequisite: PHYS 211; credit or concurrent registration in MATH 241.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

PHYS 212  University Physics: Elec & Mag  credit: 4 hours.
Coulomb's Law, electric fields, Gauss’ Law, electric potential, capacitance, circuits, magnetic forces and fields, Ampere's law, induction, electromagnetic waves, polarization, and geometrical optics. Lectures with demonstrations, discussions, and laboratory. For students in engineering, mathematics, physics, and chemistry. Credit is not given for both PHYS 212 and PHYS 102. Prerequisite: PHYS 211; credit or concurrent registration in MATH 241.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

PHYS 213  Univ Physics: Thermal Physics  credit: 2 hours.
Introduction to the first and second laws of thermodynamics including kinetic theory of gases, heat capacity, heat engines, introduction to entropy and statistical mechanics, and introduction to application of free energy and Boltzmann factor. Lectures with demonstrations, discussions, and laboratory. For students in engineering, mathematics, physics and chemistry. Credit is not given for both PHYS 213 and PHYS 101. Prerequisite: PHYS 211; credit or concurrent registration in MATH 241.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

PHYS 214  Univ Physics: Quantum Physics  credit: 2 hours.
Interference and diffraction, photons and matter waves, the Bohr atom, uncertainty principle, and wave mechanics. Lectures with demonstrations, discussions, and laboratory. For students in engineering, mathematics, physics, and chemistry. Credit is not given for both PHYS 214 and PHYS 102. Prerequisite: PHYS 212 (includes MATH 241 and PHYS 211).

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

PHYS 280  Nuclear Weapons & Arms Control  credit: 3 hours.
Beginner's-level introduction to the physics of nuclear weapons, nuclear weapon effects, delivery systems, and defenses against nuclear attack; includes presentation of current issues. Nontechnical, but about technology. Designed to assist in making informed judgments about nuclear armaments and arms control. Same as GLBL 280.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

PHYS 325  Mechanics and Relativity I  credit: 3 hours.
Examines kinematics and dynamics. Special relativity, Newtonian kinematics and dynamics in three dimensions, behavior of systems of particles, oscillations, transient response of oscillators, nonlinear oscillators, motion in rotating frames of reference, and rigid body dynamics. Vector analysis is developed as needed. Credit is not given for both PHYS 325 and PHYS 219. Prerequisite: Credit or concurrent registration in MATH 285 and PHYS 212.

PHYS 326  Mechanics and Relativity II  credit: 3 hours.
Continuation of PHYS 325. Lagrangian techniques and the calculus of variations, central force motion, scattering, coupled oscillations, the wave equation in one dimension, generalized coordinates and the Hamiltonian formulation, relativistic dynamics, Euler angles and tops, non-linear and fluid dynamics. Prerequisite: PHYS 325; credit or concurrent registration in MATH 241 or MATH 380.

**PHYS 329  Atmospheric Dynamics I**  
credit: 3 hours.  
Same as ATMS 302. See ATMS 302.

**PHYS 401  Classical Physics Lab**  
credit: 3 hours.  
Experiments and techniques in classical mechanics and electromagnetism. Dynamics of electrical and mechanical oscillators in the linear domain. Fourier analysis of system response. Measurements of electrostatic fields, transmission lines, waves, and radiation. Investigation of electromagnetic phenomena in dielectrics, conductors, and magnetic materials. Instruction in data analysis and report writing. Graduate credit is not given to physics graduate program majors. Prerequisite: PHYS 325.

**PHYS 402  Light**  
credit: 0 TO 4 hours.  
Wave kinematics; geometrical optics: basic concepts, ray-tracing and matrix formalism, Gaussian imaging by thick lenses, stops, apertures, and intensity relations; interference; interference spectroscopy and coherence; diffraction: Fresnel-Kirchhoff formulation, Fraunhofer case, Fresnel case, and holography; polarized light. Lectures, laboratory, and problems. 4 undergraduate hours. 3 or 4 graduate hours (3 hours without lab). Prerequisite: MATH 285; PHYS 102 (includes PHYS 101) or PHYS 214 (includes PHYS 211 and PHYS 212).

**PHYS 403  Modern Experimental Physics**  
credit: 2 TO 5 hours.  
Techniques and experiments in the physics of atoms, atomic nuclei, molecules, the solid state, and other areas of modern physical research. 3 to 5 undergraduate hours, or 2 to 4 graduate hours. First time registration must be for 5 undergraduate hours or 4 graduate hours. May be repeated for variable credit of 3 to 5 undergraduate hours or 2 to 4 graduate hours. Prerequisite: PHYS 401; concurrent registration in PHYS 486.

**PHYS 404  Electronic Circuits I**  
credit: 0 TO 5 hours.  
The physics of semiconductor devices; theory and application of discrete and integrated devices in linear circuits; use of operational amplifiers and feedback; regulation, oscillators, and modulation; emphasizes practical experience. Lectures, problems, and laboratory. Same as CHEM 423. 5 undergraduate hours. 4 graduate hours. Offered Spring term only. Prerequisite: PHYS 401 and PHYS 435.

**PHYS 405  Electronic Circuits II**  
credit: 0 TO 5 hours.  
Continuation of PHYS 404, with particular emphasis on nonlinear devices, switching circuits, digital logic, analog to digital and digital to analog conversion, and individual projects. Lectures, problems, and laboratory. 5 undergraduate hours. 4 graduate hours. Offered Fall term only. Prerequisite: PHYS 404.

**PHYS 419  Space, Time, and Matter-ACP**  
credit: 3 OR 4 hours.  
Identical to PHYS 420 except for the additional writing component including a final term paper. Same as PHIL 419. 3 undergraduate hours. 4 graduate hours. Credit is not given for both PHYS 419 and PHYS 420. Junior standing is required. Prerequisite: One physical science course; one of PHYS 214, PHIL 101, PHIL 270, PHIL 317.  
This course satisfies the General Education Criteria for a:  
UIUC: Advanced Composition

**PHYS 420  Space, Time, and Matter**  
credit: 2 hours.  
Philosophical examination of some fundamental concepts and theories of the physical world, such as time, matter, space, and geometry; interpretation of quantum theory. Graduate students write an additional paper. Same as PHIL 420. Credit is not given for both PHYS 420 and PHYS 419. Junior standing is required. Prerequisite: One physical science course; one of PHYS 214, PHIL 101, PHIL 270, PHIL 317.

**PHYS 427  Thermal & Statistical Physics**  
credit: 4 hours.  
Equilibrium thermodynamics, statistical mechanics, and kinetic theory of gases. A unified treatment is used in that the principles of heat and thermodynamics are discussed along with statistical postulates and the microscopic approach of introductory quantum mechanics. Designed primarily for advanced undergraduates. Credit is not given for both PHYS 427 and any of ME 404, CHEM 442, CHEM 444, MSE 500. Prerequisite: Two 400-level courses in physics.

**PHYS 429  Atmospheric Dynamics II**  
credit: 4 hours.  
Same as ATMS 402. See ATMS 402.

**PHYS 435  Electromagnetic Fields I**  
credit: 3 hours.  
Static electric and magnetic fields, their interactions with electric charge and current, and their transformation properties; the effect of special relativity is incorporated. Macroscopic fields in material media are described. Prerequisite: MATH 285; PHYS 325; credit or concurrent registration in MATH 241 or MATH 380.
PHYS 436  Electromagnetic Fields II  credit: 3 hours.
Concentrates on time-dependent fields. Electromagnetic induction, Maxwell's equations, electromagnetic wave propagation in various
media and structures, and electromagnetic radiation from charge and current distributions are treated. The relativistic covariance of
Maxwell's equations is discussed. Prerequisite: PHYS 326 and PHYS 435.

PHYS 460  Condensed Matter Physics  credit: 4 hours.
Bonding and structure of crystals; energy bands in insulators, semiconductors, and metals; electrical conductivity; optical properties;
lattice vibrations; elasticity; point defects; dislocations. Offered Fall term only. Credit is not given for both PHYS 460 and MSE 304. For
engineering and science majors with junior standing.

PHYS 466  Atomic Scale Simulations  credit: 3 OR 4 hours.
Same as CSE 485 and MSE 485. See MSE 485.

PHYS 470  Subatomic Physics  credit: 4 hours.
The nature and properties of nuclei and elementary particles, symmetries, interactions, nuclear models, tools and techniques of
experimental subatomic physics, and applications to power generation, astrophysics, chemistry, medicine, and biology. Lecture-
problem format. Offered Spring term only. Prerequisite: PHYS 485 or PHYS 486.

PHYS 479  Plasma and Fusion Science  credit: 3 hours.
Same as ECE 421 and NPRE 421. See NPRE 421.

PHYS 485  Atomic Phys & Quantum Theory  credit: 3 hours.
Introduction to the basic concepts of quantum theory which underlie modern theories of the properties of materials; elements of atomic
and nuclear theory; kinetic theory and statistical mechanics; quantum theory and simple applications; atomic spectra and atomic
structure; molecular structure and chemical binding. Prerequisite: CHEM 104; MATH 285; PHYS 214.

PHYS 486  Quantum Physics I  credit: 4 hours.
Atomic phenomena integrated with an introduction to quantum theory; evidence for the atomic nature of matter and the properties of
the Schrodinger equation, single particle solutions in one dimension, the hydrogen atom, perturbation theory, external fields, and atomic
spectroscopy of outer electrons. Prerequisite: MATH 285; PHYS 214; credit or concurrent registration in MATH 415.

PHYS 487  Quantum Physics II  credit: 4 hours.
Continuation of PHYS 486. Identical particles, spectral hyperfine structure, magnetic properties of matter, atomic spectroscopy of
inner electrons, high-energy photon effects, molecular binding and spectra, emission and absorption of light, and symmetry principles.
Prerequisite: PHYS 486.

PHYS 496  Intro to Physics Research  credit: 3 hours.
Presents current research topics through extensive reading, writing, and oral-presentation activities. Designed for second-semester
juniors interested in pursuing physics research careers and advanced physics training. Students generally become involved in a
research group at this time, leading to a full-time summer research experience. 3 undergraduate hours.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

PHYS 497  Individual Study  credit: 1 TO 4 hours.
Individual study at an advanced level in a subject not covered by course offerings. May be repeated. Prerequisite: Consent of instructor.

PHYS 498  Special Topics in Physics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in physics intended to augment the existing curriculum. See Class
Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

PHYS 499  Senior Thesis  credit: 3 hours.
Guidance in the writing of a senior thesis involving independent research (usually performed during the summer prior to the fall
term). Additional activities include oral presentations of research and outside journal articles, proposal writing and reviewing, poster
presentation, preparation of graduate school applications, and discussion of physics frontiers with outside experts. 3 undergraduate
hours. Prerequisite: PHYS 496; completion of appropriate research activity.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

PHYS 500  Advanced Mechanics  credit: 2 hours.
Fundamentals of classical Lagrangian and Hamiltonian mechanics, with emphasis on the relation between dynamical symmetries and constants of the motion; use of conservation laws to derive basic equations of fluid dynamics; discussion of some applications. Prerequisite: PHYS 326.

PHYS 501  Continuum Mechanics  credit: 2 hours.
Introduction to stress, strain, and waves in an elastic solid, the Euler and Navier Stokes equations, potential flow, vortex theory, viscous flows, gas dynamics, characteristics, and shock waves. Prerequisite: Credit or concurrent registration in PHYS 507.

PHYS 504  Statistical Physics  credit: 4 hours.
Single-particle distribution functions; classical and quantum mechanical systems, Boltzmann equation, virial theorem, and equations of state for gases; formal theory: ensembles, identical particles, thermodynamics of simple systems, and distribution functions; nonequilibrium problems; conservation laws and hydrodynamic equations, sound waves, and transport coefficients; plasmas, normal Fermi fluid, superfluids, and systems with internal degrees of freedom. Prerequisite: PHYS 427 and PHYS 486.

PHYS 505  Classical Electromagnetism  credit: 4 hours.
Review of Maxwell's equations followed by a relativistic formulation of the electromagnetic field and the motion of charged particles; plane and guided waves; retarded potentials; radiation from simple antennas; radiation from accelerated charged particles; synchrotron radiation, bremsstrahlung, scattering, and further topics. Prerequisite: PHYS 436.

PHYS 508  Mathematical Physics I  credit: 4 hours.
Core techniques of mathematical physics widely used in the physical sciences. Calculus of variations and its applications; partial differential equations of mathematical physics (including classification and boundary conditions); separation of variables, series solutions of ordinary differential equations and Sturm-Liouville eigenproblems; Legendre polynomials, spherical harmonics, Bessel functions and their applications; normal mode eigenproblems (including the wave and diffusion equations); inhomogeneous ordinary differential equations (including variation of parameters); inhomogeneous partial differential equations and Green functions; potential theory; integral equations (including Fredholm theory). Topics are illustrated with realistic physics problems; a broad range of illustrative examples are explored; applications are emphasized. Prerequisite: MATH 241 or MATH 380, MATH 285.

PHYS 509  Mathematical Physics II  credit: 4 hours.
Continuation of PHYS 508. Further core techniques of mathematical physics widely used in the physical sciences. Complex variables; group theory in classical and quantum systems; tensors in physics; differential forms and their applications in mechanics; electromagnetism. Topics are illustrated with realistic physics problems; a broad range of illustrative examples are explored; applications are emphasized. Prerequisite: PHYS 508.

PHYS 510  Nonlinear Dynamics  credit: 4 hours.
Broad introduction to nonlinear dynamics of physical systems with varying degrees of complexity; surveys a variety of concepts associated with bifurcation phenomena, mappings, nonlinear oscillations, chaotic behavior, strange attractors, solitons, and topics of current interest. Prerequisite: PHYS 326.

PHYS 511  Advanced Nonlinear Dynamics  credit: 4 hours.
Analysis of the dynamics of spatially extended and other complex physical systems using analytical, experimental, computational, topological, and symbolic methods; examples may involve mechanical, electrical, optical, solid state, fluid, chemical, biological, and network systems. Prerequisite: PHYS 510.

PHYS 515  General Relativity I  credit: 4 hours.
Systematic introduction to Einstein's theory, with emphasis on modern coordinate-free methods of computation. Topics include: review of special relativity, modern differential geometry, foundations of general relativity, laws of physics in the presence of a gravitational field, linearized theory, and experimental tests of gravitation theories. Same as ASTR 515. Offered in alternate Fall terms. Prerequisite: PHYS 436 (includes PHYS 326).

PHYS 516  General Relativity II  credit: 4 hours.
Continuation of PHYS 515 with emphasis on applications to astrophysics and cosmology. Relativistic stars, gravitational collapse, black holes, gravitational waves, numerical relativity, and cosmology. Same as ASTR 516. Offered in alternate Spring terms. Prerequisite: PHYS 515.

PHYS 520  Reactor Theory I  credit: 4 hours.
Same as NPRE 555. See NPRE 555.

PHYS 521  Reactor Theory II  credit: 4 hours.
Same as NPRE 556. See NPRE 556.

PHYS 522  Asymptotic Methods  credit: 4 hours.
Same as MATH 559, NPRE 559, and TAM 549. See TAM 549.
PHYS 540  Astrophysics  credit: 4 hours.
Introduction to astrophysics and cosmology and new developments in these fields. Emphasizes basic physical concepts and principles, the key observational evidence, and illustrative calculations. Topics include relativistic cosmological models, inflation, Big-Bang nucleosynthesis, and the cosmic microwave background; formation and evolution of galaxy clusters, galaxies, and stars; formation, structure, and evolution of white dwarfs, neutron stars, and black holes; rotation- and accretion-powered pulsars, X-ray and y-ray stars, and gravitational radiation. Designed for students who want to learn about current problems and recent discoveries in astrophysics and cosmology as well as students who plan to pursue research in astrophysics. No astronomy or general relativity backgrounds are assumed. Same as ASTR 540. Prerequisite: PHYS 435; PHYS 485 or PHYS 485.

PHYS 541  Physics of Compact Objects  credit: 4 hours.

PHYS 542  Theoretical Stellar Physics  credit: 4 hours.
Same as ASTR 504. See ASTR 504.

PHYS 550  Biomolecular Physics  credit: 4 hours.
Physical concepts governing the structure and function of biological macromolecules; general properties, spatial structure, energy levels, dynamics and functions, and relation to other complex physical systems such as glasses; recent research in biomolecular physics; physical techniques and concepts from theoretical physics emphasized. Designed for students without appreciable background in biology and chemistry. Same as BIOP 550 and MCB 550. Prerequisite: CHEM 104; PHYS 485 or PHYS 487.

PHYS 552  Optical Spectroscopy  credit: 4 hours.
Theoretical and experimental fundamentals of optical spectroscopy. Topics include light-matter interaction (absorption of UV, visible, IR), emission spectroscopy (fluorescence, Raman and light scattering), theoretical backgrounds of molecular electronic and vibrational transitions, modern experimental techniques, and data analysis of the optical spectroscopy experiments. A Laboratory component provides practical applications of spectroscopy applicable to a broad spectrum of disciplines, including biophysical examples. Of interest to students from a broad range of scientific disciplines, as well as to those who wish to understand recent modern literature. Prerequisite: PHYS 427 and PHYS 487.

PHYS 554  Nonequilibrium Stat Mechanics  credit: 4 hours.
Introduction to the mathematical description of classical and quantum stochastic systems, thoroughly addressing the tools and the mode of thinking of non-equilibrium statistical mechanics. Review of equilibrium statistical mechanics; Einstein and Smoluchowski diffusion equation; generalized moment expansion of correlation functions; noise-induced limit cycles; time series analysis; diffusion-controlled reactions; classical dynamics under the influence of stochastic forces; observables connected with brownian transport, echoes, and hysteresis; spin-boson model. Examples from biological physics and theoretical condensed matter physics. Prerequisite: PHYS 504.

PHYS 560  Condensed Matter Physics I  credit: 4 hours.
Crystalline perfection, free-electron gas, screening, plasma oscillations, and dielectric response; Bloch electrons, Brillouin zones, and band structure; semiconductors, intrinsic and extrinsic, with applications; phonons, elasticity, and anharmonicity; ferromagnetism and second-order phase transitions; superconductivity. Prerequisite: PHYS 427 and PHYS 580.

PHYS 561  Condensed Matter Physics II  credit: 4 hours.
Hartree-Fock theory and electron-electron interactions; electron-phonon interactions; electron dynamics and transport; BCS theory of superconductivity; elastic properties; thermal properties due to anharmonicity; defects in solids. Prerequisite: PHYS 560 and PHYS 581.

PHYS 563  Phase Transitions  credit: 4 hours.
Phenomenology of phase transitions, scaling, critical behavior, and multi-criticality; Landau theory of phase transitions; renormalization group methods, including lattice models and epsilon-expansion; numerical methods; critical dynamics; selected additional topics. Prerequisite: PHYS 504.

PHYS 564  Surface Physics  credit: 4 hours.
Same as MSE 582. See MSE 582.

PHYS 565  Theory of Semicond & Devices  credit: 4 hours.
Same as ECE 535. See ECE 535.

PHYS 566  Diffraction Physics of Matls  credit: 4 hours.
Same as MSE 580. See MSE 580.

**PHYS 569  Emergent States of Matter**  credit: 4 hours.
Introduction to the consequences of broken symmetry in condensed matter, the emergence of novel ground states, and the nature of the excitations that arise. Specific systems covered may include superconductivity, superfluidity, Bose-Einstein condensates, the quantum Hall states, liquid crystals, biological systems and patterns in Rayleigh-Benard convection. Prerequisite: PHYS 504 and PHYS 580.

**PHYS 570  Subatomic Physics**  credit: 4 hours.
Nuclear systematics, nucleon-nucleon interaction, shell model, and single particle and collective excitations; hadron spectroscopy, hadronic quantum numbers, quark-parton model, and hadron dynamics; weak interactions. Prerequisite: PHYS 580; concurrent registration in PHYS 581.

**PHYS 571  Nuclear Physics**  credit: 4 hours.
Current research in nuclear physics; topics include one or more of: photon physics, electron-nucleus scattering and nucleon structure, Few-nucleon systems and nuclear and neutron matter, nuclear astrophysics, Meson physics, Relativistic nuclear physics, heavy-ion physics, and Quarks in the nucleon and in nuclei. May be repeated.

**PHYS 575  Particle Physics I**  credit: 4 hours.
Basic calculations in elementary particle theory. Quantum electrodynamics, quantum chromodynamics, and the Glashow-Weinberg-Salam theory of weak and electromagnetic interactions as applied to the phenomenology of particle decays and high energy reactions. Prerequisite: PHYS 570 (in exceptional circumstances, PHYS 570 may be taken concurrently with departmental approval). Recommended (strongly): credit or concurrent registration in PHYS 582.

**PHYS 576  Particle Physics II**  credit: 4 hours.
Continuation of PHYS 575. Current topics in particle theory; topics change from year to year. Typically treats three or four different subjects in depth. Prerequisite: PHYS 575.

**PHYS 580  Quantum Mechanics I**  credit: 4 hours.
Second course in quantum mechanics for students with a good background in wave mechanics and atomic and molecular structure. Operators, state vectors, and the formal structure of quantum theory; operator treatments of simple systems; angular momentum and vector addition coefficients; stationary state perturbation theory; introduction to scattering theory for particles without spin, partial wave analysis, and Born approximation; examples taken from atomic, nuclear, and elementary particle physics. Prerequisite: PHYS 485 or PHYS 487.

**PHYS 581  Quantum Mechanics II**  credit: 4 hours.
Spin and identical particles, simple many-particle systems and elements of second-quantization theory; time-dependent processes, radiative transitions, and quantization of the electromagnetic field; scattering of particles with spin; polarization; introduction to the Klein-Gordon and Dirac equations, and properties of simple relativistic systems. Prerequisite: PHYS 580.

**PHYS 582  General Field Theory**  credit: 4 hours.
Standard techniques of field theory as used by experimenters and theorists; relativistic quantum mechanics of a single particle; Lagrangian field theories, perturbation theory, and calculation of lowest-order processes; introduction to Feynman diagrams and higher order processes; examples taken from quantum electrodynamics, solid-state and elementary particle physics, and many-body theory. Prerequisite: PHYS 581.

**PHYS 583  Advanced Field Theory**  credit: 4 hours.
Quantization and Feynman path integral; gauge theories and renormalization; renormalization group with applications to particle physics and critical phenomena; approximation methods and recent developments. Prerequisite: PHYS 582.

**PHYS 596  Graduate Physics Orientation**  credit: 1 hours.
Introduction to Research in the Department of Physics. Advice on choosing a field of research and finding a research advisor. Faculty-presented overviews of the major areas of research available in the Physics Department. General discussions on instructional topics as well as ethics in teaching and sciences. Required of all first-year Physics Ph.D. students.

**PHYS 597  Individual Study**  credit: 1 TO 16 hours.
Individual study in a subject not covered in course offerings may be arranged for credit by registration under this number. 2 to 16 hours for full term; 1 to 8 hours for half-term. May be repeated. Prerequisite: Consent of instructor.

**PHYS 598  Special Topics in Physics**  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in physics intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary.

Page 596 - Physics
PHYS 599  Thesis Research  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
PLPA 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Experimental course on a special topic in plant pathology. Topic may not be repeated except in accordance with the Code. May be repeated in the same or subsequent terms. No more than 12 hours may be counted toward graduation.

PLPA 200  **Plants, Pathogens, and People**  credit: 3 hours.
Plant diseases and their impact on food supplies and human history are studied in lectures, demonstrations and discussions. Issues of food production and safety, pesticide use and human health, and the environment are considered. Includes the biology of pathogens that cause plant disease. Designed for non-science and science majors. Prerequisite: RHET 105 or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences
UIUC: Advanced Composition

PLPA 204  **Introductory Plant Pathology**  credit: 3 hours.
Concepts relating to causal agents of representative plant diseases, symptoms and diagnosis, modes of infection and spread, effects of environment on disease development, and methods of control.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

PLPA 395  **Undergrad Research or Thesis**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated to a maximum of 12 hours.

PLPA 401  **Plant Pathogenic Fungi**  credit: 4 hours.
Principles of the biology, ecology and pathogenesis of fungi that cause plant diseases; morphology, classification, and historier of these pathogens. The course includes both lecture and laboratory components. Prerequisite: One year of biology or plant biology; and plant and animal genetics; and an introductory plant pathology course; or consent of instructor.

PLPA 402  **Phytoparasitic Nematodes**  credit: 2 hours.
Study of plant-pathogenic nematodes with emphasis on economically important groups; nematode morphology, identification, classification, development biology, ecology, and host-parasite relationships; interaction with fungi, bacteria and viruses in plant disease development, experimental and diagnostic techniques; and symptomology and control. Prerequisite: An introductory course in plant pathology and an introductory course in zoology, or consent of instructor.

PLPA 404  **Plant Virology**  credit: 2 hours.
Current knowledge of viruses and the diseases they cause in plants studied in lectures, discussions and laboratories. Topics include virus structure, replication, expression, taxonomy and transmission and viral disease detection, diagnosis, epidemiology and management. Prerequisite: An introductory course in plant pathology and an introductory course in genetics, or consent of instructor.

PLPA 405  **Plant Disease Diagnosis**  credit: 2 hours.
Field and laboratory techniques in plant disease diagnosis and appraisal; identification of diseases of small grains, turf, corn, soybeans, forage crops, vegetables, fruit, forest and shade trees, and ornamentals, both on field trips and in laboratory exercises. Prerequisite: PLPA 204 or equivalent.

PLPA 406  **Phytobacteriology**  credit: 2 hours.
Provides up-to-date coverage of prokaryotes that cause plant diseases. Lectures, discussions, and laboratories cover taxonomy, molecular biology, etiology, detection and identification, epidemiology and management of major plant pathogenic prokaryotes. Prerequisite: An introductory course in Plant Pathology and Microbiology, or consent of instructor.

PLPA 407  **Diseases of Field Crops**  credit: 3 hours.
Studies the symptoms of major field crop diseases, life histories of causal organisms, and methods of control. Lecture and laboratory. Same as CPSC 407. Prerequisite: PLPA 204 or PLPA 401.
PLPA 409  **Diseases of Ornamentals & Turf**  credit: 3 hours.
Symptoms, diagnosis, causal agents, epidemiology and control of diseases of ornamental and turfgrass plants are studied in lectures, laboratories and discussions. Prerequisite: PLPA 204.

PLPA 504  **Plant Nematology**  credit: 4 hours.
Comprehensive study of plant-feeding nematodes with emphasis on economically important groups; nematode morphology, identification, classification, developmental biology, ecology, and host-parasite relationships; interaction with fungi, bacteria, and viruses in plant disease development; experimental and diagnostic techniques; symptomatology and control. Offered in alternate years. Prerequisite: PLPA 204 or PLPA 401; an introductory course in animal biology; or consent of instructor.

PLPA 505  **Genetics of Host-Pathogen Int**  credit: 4 hours.
The genetics and expression of resistance in plants to fungi, bacteria, viruses, nematodes, and other pathogens; variation and genetic systems in pathogens with particular emphasis on pathogenicity; complementary genetic systems; and theory and practice of breeding disease-resistant plants. Lecture and discussion. Offered in alternate years. Prerequisite: PLPA 204 or PLPA 401; and CPSC 453 or equivalent.

PLPA 509  **Mol Bio of Microbe-Plant Inter**  credit: 3 hours.
Detailed analysis of the microbe-plant interaction at the molecular level. Covers commensal, symbiotic, and pathogenic interactions from viewpoint of both plant and microbe. Emphasizes microbial and plant genes involved in the interactions, their organization, regulation of expression and the nature and function of the encoded gene products. Same as MCB 511. Prerequisite: PLPA 403, or equivalent; MCB 421, or MCB 430, or equivalent; and MCB 350 or equivalent.

PLPA 599  **Thesis Research**  credit: 0 TO 16 hours.
Individual study and basic and/or applied research related to plant disease; required of all students working toward the Master of Science or Doctor of Philosophy in Plant Pathology. Approved for S/U grading only.
Polish

Slavic Languages and Literature
Head of Department: Harriet Murav
Department Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-0680
http://www.slavic.uiuc.edu/

POL 101  **Elementary Polish I**  credit: 4 hours.
Oral and written work on basic pronunciation, grammar, and vocabulary. For students with no prior work in Polish.

POL 102  **Elementary Polish II**  credit: 4 hours.
Continuation of POL 101 Prerequisite: POL 101.

POL 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

POL 201  **Second Yr Polish I**  credit: 4 hours.
Grammar review, conversation practice, written exercises, and selected readings. Prerequisite: POL 102 or equivalent.

POL 202  **Second Yr Polish II**  credit: 4 hours.
Continuation of POL 201. Prerequisite: POL 201.

POL 245  **Survey of Polish Literature**  credit: 3 hours.
Critical survey, in translation, of Polish literature from the Middle Ages to the end of the nineteenth century; special attention given to the works in their cultural context. Same as CWL 245.

POL 301  **Third-Year Polish I**  credit: 3 hours.
Reading and discussion of representative prose and poetry works of Polish authors since 1863. All readings are in the original language; the course emphasis is in the development of language skills. Prerequisite: POL 202 or consent of instructor.

POL 302  **Third-Year Polish II**  credit: 3 hours.
Reading and discussion of representative prose and poetry works of Polish authors to 1863. All readings are in the original language; the course emphasis is in the development of language skills. Prerequisite: POL 301 or consent of instructor.

POL 401  **Fourth-Year Polish I**  credit: 3 hours.
Analysis of the sound system and grammar of the contemporary Polish language. Prerequisite: Knowledge of another Slavic language or consent of instructor.

POL 402  **Fourth-Year Polish II**  credit: 3 hours.
Reading and analysis of selected texts. Prerequisite: POL 401 or consent of instructor.

POL 446  **Problems of Polish Literature**  credit: 3 OR 4 hours.
Critical study, in translation, of modern Polish fiction, drama, poetry, and essay, from Young Poland to the "New Wave”; their contribution to literary styles and genres in Poland and abroad; special emphasis on Wyspianski, Witkiewicz, and Gombrowicz. Same as CWL 436. 3 undergraduate hours. 4 graduate hours.
Portuguese

Spanish, Italian and Portuguese
Head of Department: Diane Musumeci
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3390
www.sip.uiuc.edu

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PORT 101</td>
<td>Elementary Portuguese I</td>
<td>4</td>
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<tr>
<td></td>
<td>For students who have no credit in Portuguese.</td>
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<tr>
<td>PORT 102</td>
<td>Elementary Portuguese II</td>
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<tr>
<td></td>
<td>Continuation of PORT 101. Prerequisite: PORT 101.</td>
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<tr>
<td>PORT 103</td>
<td>Intermediate Portuguese I</td>
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<tr>
<td></td>
<td>Rapid reading, review of grammar, composition, and conversation. Prerequisite: PORT 102 or two years of high school Portuguese.</td>
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<tr>
<td>PORT 104</td>
<td>Intermediate Portuguese II</td>
<td>4</td>
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<tr>
<td></td>
<td>Continuation of PORT 103. Prerequisite: PORT 103 or three years of high school Portuguese.</td>
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<tr>
<td>PORT 191</td>
<td>Freshman Honors Tutorial</td>
<td>1 TO 3</td>
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<td></td>
<td>Study of selected topics on an individually arranged basis. May be repeated one time to a maximum of 6 hours. Open only to honors majors or to Cohn Scholars and associates. Prerequisite: Consent of departmental honors adviser in Portuguese.</td>
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<tr>
<td>PORT 199</td>
<td>Undergraduate Open Seminar</td>
<td>1 TO 5</td>
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<td>May be repeated. Approved for both letter and S/U grading.</td>
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<tr>
<td>PORT 200</td>
<td>Advanced Grammar</td>
<td>3</td>
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<td></td>
<td>The study of the structure of modern Portuguese in both its phonological and syntactic aspects for the student who already has a functional command of the language, with emphasis on developing ability to analyze and interpret grammatical structures. Prerequisite: PORT 104, PORT 401 or consent of instructor.</td>
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<tr>
<td>PORT 320</td>
<td>Readings in Portuguese</td>
<td>3</td>
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<tr>
<td></td>
<td>Readings and discussion in Portuguese of a variety of texts by leading Luso-Brazilian writers covering various genres and themes. Designed to emphasize reading skills and discussion, rather than literary criticism. Prerequisite: PORT 104 or equivalent.</td>
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<tr>
<td>PORT 334</td>
<td>Brazilian Women's Lit Trans</td>
<td>3</td>
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<td></td>
<td>Study of gender, race and class in Brazil through the study of these issues as documented by women's voices. Beginning with an analysis of the early representation of women during the Portuguese colonization of the new world up to the present through translations of contemporary literature written by women. Requires no knowledge of Portuguese language. Same as GWS 334.</td>
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<td>This course satisfies the General Education Criteria for a:</td>
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<td>UIUC: Literature and the Arts</td>
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<td>UIUC: Western Compartv Cult</td>
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<tr>
<td>PORT 400</td>
<td>Intensive Beginning Portuguese</td>
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<td>Accelerated language learning course. Early emphasis on production skills: comprehension-based skills will be introduced in rapid succession. Credit is not given for both PORT 400 and PORT 101 and PORT 102. Prerequisite: Prior successful experience learning a Romance language (Spanish, French, Italian, or Rumanian) or consent of instructor.</td>
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<tr>
<td>PORT 401</td>
<td>Intermediate Portuguese</td>
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<td>Continued development of reading, writing and conversational skills. Completion of this course fulfills the third-semester level of Portuguese language instruction. Followed by a 200- or 300-level course in Portuguese, this course fulfills the fourth-semester level of Portuguese language instruction. Prerequisite: PORT 400 or consent of instructor.</td>
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<tr>
<td>PORT 402</td>
<td>Intensive Portuguese</td>
<td>6</td>
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<td>Rapid-pace development of the four skills in Portuguese language: listening, speaking, reading, and writing, as well as the development of cultural understanding. Offered primarily for summer intensive study. Approved for both Standard and S/U grading. Students may not receive credit for this course and PORT 101 or PORT 400.</td>
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<tr>
<td>PORT 404</td>
<td>Luso-Brazilian Culture</td>
<td>2 TO 4</td>
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</table>
Affords a broad understanding of the origins of Luso-Brazilian civilization and culture. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: PORT 212 and PORT 320, or equivalent.

PORT 406 Brazilian Film credit: 3 hours.
Study of the evolution of Brazilian cinema through selected films to explore the nature and development of contemporary Brazilian aesthetics. Prerequisite: PORT 210 or PORT 212; PORT 320 recommended.

PORT 410 Studies in Brazilian Lit credit: 3 hours.
May be repeated to a maximum of 6 hours if topics vary. Prerequisite: Consent of instructor.

PORT 435 Intro Romance Ling credit: 3 OR 4 hours.
Same as FR 462, ITAL 435, LING 462, RMLG 435, and SPAN 435. See SPAN 435.

PORT 460 Principles of Language Testing credit: 3 OR 4 hours.
Same as EIL 460, EPSY 487, FR 460, GER 460, ITAL 460, SLS 460, and SPAN 460. See EIL 460.

PORT 482 Computer Foreign Lang Tchg credit: 4 hours.
Same as CLCV 482, EIL 482, FR 482, GER 482, HUM 482, ITAL 482, LING 486, SLAV 482, and SPAN 482. See HUM 482.

PORT 489 Theoretical Foundations of SLA credit: 3 OR 4 hours.
Same as EIL 489, FR 481, GER 489, ITAL 489, LING 489, SLS 489, and SPAN 489. See EIL 489.

PORT 510 Seminar Brazilian Literature credit: 4 hours.
Advanced study of literary movements, major writers, and intellectual and cultural ideas in Brazilian literature; subject matter varies each time the course is offered. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: PORT 410 or consent of instructor.

PORT 520 Seminar Portuguese Literature credit: 4 hours.
Advanced studies on a specific topic, writer, group of writers, or literary movement in Portuguese literature; subject matter may vary. May be repeated if topics vary. Prerequisite: PORT 420.

PORT 559 Sem Romance Ling credit: 4 hours.
Same as FR 559, ITAL 559, LING 559, RMLG 559, and SPAN 557. See SPAN 557.

PORT 563 College Teaching Foreign Langs credit: 2 OR 4 hours.
Same as EIL 563, FR 563, GER 563, ITAL 563, RUSS 563, and SPAN 563. See FR 563.

PORT 571 Proseminar For Lang Tchg credit: 4 hours.
Same as ITAL 571, and SPAN 571. See SPAN 571.

PORT 572 Theory and Literary Criticism credit: 4 hours.
Same as ITAL 572, and SPAN 572. See SPAN 572.

PORT 580 Classroom Lang Acquisition credit: 4 hours.
Same as EIL 580, FR 580, GER 580, ITAL 580, SLS 580, and SPAN 580. See SPAN 580.

PORT 584 Theories in SLA credit: 4 hours.
Same as CI 584, EALC 584, EIL 584, EPSY 563, FR 584, GER 584, ITAL 584, LING 584, SLS 584, and SPAN 584. See SPAN 584.

PORT 587 Lang and Social Interaction II credit: 2 OR 4 hours.
Same as EIL 556, ITAL 587, and SPAN 587. See EIL 556.

PORT 588 Sem Second Lang Learn credit: 4 hours.
Same as EALC 588, EIL 590, FR 588, GER 588, ITAL 588, LING 588, SLS 588, and SPAN 588. See SPAN 588.

PORT 595 Special Topics Port & Braz Lit credit: 1 TO 4 hours.
Independent study/research under the direction of a faculty member. May or may not fulfill requirements for a particular degree program in Spanish, Italian and Portuguese. Consult graduate advisor. May be repeated in same or subsequent terms to a maximum of 8 hours.

PORT 599 Thesis Research credit: 0 TO 16 hours.
Approved for S/U grading only.
Political Science

Political Science
Head of Department: William Bernhard
Department Office: 361 Lincoln Hall, 702 South Wright, Urbana
Phone: 333-3881
www.pol.uiuc.edu

PS 100  Intro to Political Science  credit: 3 hours.
Surveys the major concepts and approaches employed in the study of politics.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

PS 101  Intro to US Gov & Pol  credit: 3 hours.
Examines the organization and development of national, state, and local governments in the U.S.; the federal system; the U.S.
Constitutions; civil and political rights; the party system; and the nature, structure, powers, and procedures of national political
institutions. This course may require limited participating as a subject in research.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

PS 180  IntroPolitics of Globalization  credit: 3 hours.
Introduction to the politics of globalization; identification of the principal actors, properties, and patterns of the politics of globalization
that distinguish global politics from other forms of politics between and within groups, communities, states, and international
organizations.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences
UIUC: Western Compartv Cult

PS 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

PS 201  US Racial & Ethnic Politics  credit: 3 hours.
Examines efforts by racial and ethnic communities to organize politically and by society to allocate resources based on race or ethnicity.
Topical focus includes African Americans, Latinos, Asian Americans, Native Americans, and white ethnics. The primary goal of the
course is to develop a more comprehensive understanding of racial and ethnic politics by identifying commonalities and differences
among these groups and their relationship to the state. Same as AFRO 201, and LLS 201.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

PS 202  Religion & Politics in the US  credit: 3 hours.
Examines how religion and politics influence each other in the United States, both historically and in contemporary society.

PS 220  Intro to Public Policy  credit: 3 hours.
Surveys the policy process including adoption, implementation, and evaluation. Topics may include reviews of substantive policy issues
such as crime, energy, environment, poverty, foreign policy, civil liberties, or economic regulation. Prerequisite: PS 100 or PS 101, or
consent of instructor.

PS 222  Ethics and Public Policy  credit: 3 hours.
Examination of the moral issues in public policy that arise in a in a democratic setting, utilizing conceptual tools from political and moral
theory to evaluate policy decisions involving means and ends between conflicting goals. Prerequisite: PS 100, PS 101, or consent of
instructor.

PS 225  Environmental Politics &Policy  credit: 3 hours.
Examinations of the political, economic, ecological, and cultural trade-offs between the use and the preservation of the environment,
with particular emphasis on the preservation of land and water resources in national parks, forests, and other reserved lands.

PS 230  Intro to Pol Research  credit: 3 hours.
Surveys the principles that guide empirical research in political science; emphasizes definition of research problems, principles and practices of measurement, use of data as evidence, and data analysis. Prerequisite: PS 100 or PS 101, or consent of instructor.

**PS 240 Intro to Comp Politics**  credit: 3 hours.
Surveys the basic concepts and principles of political analysis from a comparative perspective.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**PS 241 Comp Politics in Dev Nations**  credit: 3 hours.
Provides comparative and historical insights into the problems affecting the developing world by examining social, economic and political changes in Africa, Asia, and Latin America.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

**PS 242 Introduction to Modern Africa**  credit: 3 hours.
Same as AFST 222, ANTH 222, and SOC 222. See AFST 222.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

**PS 243 Pan Africanism**  credit: 3 hours.
Provides an introduction to Pan African political movements and ideologies from the Americas to continental Africa. Examines the political, social, economic, and ideological relationships and connections between Africans and their descendants in the diaspora from an historical and comparative perspective. Same as AFRO 243, AFST 243, and SOC 267.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

**PS 270 Intro to Political Theory**  credit: 3 hours.
Introduces the nature, structure, and purposes of political theory; examines major works on the problems of political order, obedience, justice, liberty, and representation to distinguish and clarify different theoretical approaches.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

**PS 272 Women and Politics**  credit: 3 hours.
Examines the political status and roles of women. Topics include women's political behavior; feminist and anti-feminist politics; and contemporary legislative and public policy issues, such as educational equity, equal rights legislation, and health care delivery for women. Same as GWS 272.

**PS 273 Environment and Society**  credit: 3 hours.
Same as NRES 287. See NRES 287.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: Western Compartv Cult

**PS 280 Intro to Intl Relations**  credit: 3 hours.
Structure and processes of international relations, trends in international politics, and the future of the international system. Credit is not given for both PS 280 and PS 281.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**PS 281 Intro to Intl Relations-ACP**  credit: 3 hours.
This course is identical to PS 280 except for the additional writing component that fulfills the campus' advanced composition requirement. Credit is not given for both PS 280 and PS 281. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: Advanced Composition
PS 282 Governing Globalization  credit: 3 hours.
Examines the historical, socio-economic, political, and moral dimensions associated with the rise of a global society and its governance. Prerequisite: Completion of campus Composition I general education requirement; completion of one course in a social science or consent of instructor.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: Advanced Composition

PS 283 Intro to Intl Security  credit: 3 hours.
Surveys the major issues associated with arms control, disarmament and international security. Also examines the military, socio-economic, and political dimensions of weapons systems, military strategy, the ethics of modern warfare, nuclear proliferation, and regional security issues. Same as GLBL 283.

PS 289 Politics of the Vietnam War  credit: 3 hours.
Examines questions about the war in Vietnam and the era during which it was fought. Focuses on official policy questions, such as the decision making process, the legality of the war, the question of war crimes, and lessons for international relations. Domestic issues, such as the rise and effect of the antiwar movement, are also discussed. Prerequisite: Allen Hall residency or consent of Unit One director.

PS 301 The US Constitution I  credit: 3 hours.
Analyzes issues related to judicial interpretation of the constitution; the separation of governmental powers; federalism; checks and balances among the three branches of the national government; and the jurisdiction of federal courts. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 302 The US Constitution II  credit: 3 hours.
Analyzes issues involved in free speech, freedom of religion, rights of the criminally accused, and government's responsibility to protect persons from discrimination based on race or sexual preference. Pays special attention to the role of law and judges. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 303 The US Congress  credit: 3 hours.
Examines the legislative function in government; the structure and organization of Congress; legislative procedures; pressure groups and lobbying; the relation of legislature to other branches of government; and problems of legislative reorganization. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 304 The US Presidency  credit: 3 hours.
Examines the multiple roles of the president; the determinants and growth of presidential influence; presidential decision making; the president's role in the formulation and implementation of public policy; and the president's multiple constituencies. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 305 The US Supreme Court  credit: 3 hours.
Examines how the modern Supreme Court resolves major issues in American constitutional politics. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor; PS 301 or PS 302.

PS 308 The US Federal System  credit: 3 hours.
Examines the nature, justification, and problems of federalism; coordination of governmental efforts by contract, subsidies, and grants; and comparison of federal systems. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 309 State Gov in the US  credit: 3 hours.
Surveys the origins and evolution of state government in the United States. Topics include history, structure and dynamics of state governments, laws and the judiciary, state legislatures, political parties, organized interests, bureaucracies, demographic change and electoral patterns, and political conflicts, and coalitions. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 311 Political Parties in the US  credit: 3 hours.
Examines the organization and operation of the American party system; national, state, and local organizations and their interactions; the convention and primary systems; and campaign methods and finance. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 312 Politics and the Media  credit: 3 hours.
Examines the processes of mass-mediated political communication in democratic societies. Special emphasis will be given to the role of news media in democratic theory, factors shaping the construction of news such as journalism routines, media economics, and the strategic management of news by political elites. Same as CMN 325 and MS 322.
PS 313 **Congress and Foreign Policy**  credit: 3 hours.
Examines cases of foreign-policy making over 100 years with a focus on the struggle between the legislative and executive branches, constitutional questions, explanations for changes in behavior, and the impact on democratic process. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 315 **African American Politics**  credit: 3 hours.
Examines the role of race in stimulating change in American political life; types of strategies employed in the civil rights struggle; how race affects electoral participation and the broader political and economic conditions of African Americans. Same as AFRO 315. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 316 **Latina/Latino Politics**  credit: 3 hours.
Examines the role of Latino electorate in shaping state and national politics. Reviews the histories of Latino national origin groups, examines public policy issues of concern to Latinos, successes and failures of Latino empowerment strategies, and the electoral impact of Latino votes. Focus will be primarily on Mexican Americans, Puerto Ricans, and Cuban Americans and an assessment of the degree to which their political agendas are likely to merge over the coming years. Same as LLS 316. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 317 **Asian American Politics**  credit: 3 hours.
Provides an overview of the role of Asian Americans in the American political system. Topics include: the international context of emigration, the history of different Asian groups in the U.S., demographic patterns, issues of identity, classification, and pan-ethnicity, voting behavior, minority representation, and public policy. Same as AAS 317. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 318 **Interests Grps & Soc Movements**  credit: 3 hours.
Focuses on two important forces in American politics that provide ways for citizens to affect public policy: interests groups and social movements. Examination of organized interest groups, including their organization, growth, activity, and impact in American politics. Examines the formation and role of social movements. Prerequisite: PS 101, or six hours of Political Science credit, or consent of instructor.

PS 319 **Campaigns and Elections**  credit: 3 hours.
Examines the dynamics of United States congressional and presidential campaigns, including electoral rules, campaign organization and finance, candidate strategy, role of parties, interest groups, and the media, campaign effects, and proposals for reform. Prerequisite: PS 101 or six hours of Political Science credit.

PS 320 **Intro to Public Admin**  credit: 3 hours.
Development of administrative organization; administration and the executive, legislature, and judiciary; principles of organization, including line and staff relationships; the staff services of finance and personnel; and formal and informal control. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 321 **Principles of Public Policy**  credit: 3 hours.
Examines different approaches to evaluating the performance of public sector organizations, including private sector accountability principles. Focuses on how to improve the performance of governmental agencies, as well as corporate social responsibility. Same as ACCY 321, and BADM 303. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 322 **Law and Public Policy**  credit: 3 hours.
Examines the nature of law, law makers, and law appliers; the determinants of law-making; and the societal impact of law. Prerequisite: PS 101, six hours of Political Science credit, or consent of instructor.

PS 330 **Intro to Political Behavior**  credit: 3 hours.
Analyzes the relationship between political attitudes and public opinion formation. The course also discusses political participation, political tolerance, and attitudes toward political leaders. Prerequisite: POLS 101, six hours of Political Science credit, or consent of instructor.

PS 331 **Intro to Electoral Behavior**  credit: 3 hours.
Examines the social, psychological and institutional determinants of individual voting decisions. Prerequisite: POLS 101, six hours of Political Science credit, or consent of instructor.

PS 341 **Gov & Pol in Africa**  credit: 3 hours.
Examines contemporary economic, social, and political processes in Africa, focusing on three basic explanatory themes: historical patterns of development; emerging patterns of class and interest; and leadership strategies. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 343 **Gov & Pol of China**  credit: 3 hours.
Introduces the government and politics of modern China. Same as EALC 343. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 344  Gov & Pol of Japan  credit: 3 hours.
Introduces the government and politics of modern Japan. Same as EALC 344. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 345  Gov & Pol of SE Asia  credit: 3 hours.
Provides a comparative analysis of the political development of the countries of Southeast Asia. Emphasis is placed on differing approaches to the governance and public policy formation, as well as economic, social, historical, and cultural influences on political development. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 346  Gov & Pol of South Asia  credit: 3 hours.
Provides a comparative analysis of the political development of India, Pakistan, Sri Lanka, and other nations in South Asia. Emphasis is placed on the differing approaches to governance and public policy formation, as well as the economic, social, historical, geographical and cultural influences on political development. Same as ASST 346. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 347  Gov & Pol of Middle East  credit: 3 hours.
Analyzes the transformation of Middle Eastern society from Morocco to Iran, as case studies in political modernization. The politics of the area are studied with special reference to causes and character of modernization, role of leadership, ideologies and institutions, methods and theories for analyzing political systems undergoing fundamental transformation, and implications for U. S. policy. Same as ASST 347. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 348  Gov & Pol in Western Europe  credit: 3 hours.
Examines the major governmental systems of continental Europe; the evolution, structure, and functioning of the political institutions of France, Germany, Italy, Spain, Switzerland, and the Scandinavian countries. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 349  Gov and Pol of Great Britain  credit: 3 hours.
Examines the British Constitution; the Crown, Ministry, and Cabinet; Parliament and elections; the party system and Britain's place in Europe. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 351  Gov & Pol Post-Soviet States  credit: 3 hours.
Examines the evolution, structure, and functioning of post-Soviet governments. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 352  Gov & Pol of East Europe  credit: 3 hours.
Examines the collapse of communism and efforts to develop capitalism and democracy. Special emphasis is given to national conflict and European integration. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 353  Gov & Pol of Latin America  credit: 3 hours.
Examines the origin and development of Latin American political institutions. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 354  Latin American Pol Economy  credit: 3 hours.
The political process of selected Latin American countries at different levels of political development; stress on the interaction between political infrastructure and more formal agencies of government; and may include cross-national comparison of the function of such factors as political culture, party system, bureaucracy, or the military establishment. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 355  Democratization  credit: 3 hours.
Examines the global process of democratization, with special attention to gains and failures in selected areas since 1974. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 356  Comparative Political Economy  credit: 3 hours.
Examines the effect of domestic political processes on economic performance, including monetary, fiscal, and trade policies. Topics include partisan influences on policy, interest group intermediation, political accountability for economic outcomes, and consequences of product and capital market internationalization. Same as GLBL 356. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

PS 357  Ethnic Conflict  credit: 3 hours.
Explores the bases of nationalist and ethnic identities across a variety of different national and cultural contexts, and how these are related to conflict at the intrastate and interstate levels. Consideration is given to the characteristics and patterns of ethnic conflict with special emphasis on how and when ethnic tensions become manifested in violent conflict. The course concludes with consideration and evaluations of various domestic and international approaches to conflict management and resolution. Same as GLBL 357. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

PS 358 Comparative Political Behavior credit: 3 hours.
Examines themes of political behavior such as political participation, electoral politics, political culture, and contentious politics from a cross-national perspective. Prerequisite: PS 240, or PS 241, or six hours of Political Science credit.

PS 371 Classical Political Theory credit: 3 hours.
Considers the major works of Greek and Roman political theory, stressing their relevance to modern political analysis and action. Prerequisite: PS 270, six hours of Political Science credit, or consent of instructor.

PS 372 Modern Political Theory credit: 3 hours.
Provides critical analysis of political theories from the fifteenth century to the present. The discussions focus on topics such as the development of conceptions of human nature, the role of the state, justice, legitimacy, obligation, individual rights, equality, and mechanisms of maintenance and change. Prerequisite: PS 270, six hours of Political Science credit, or consent of instructor.

PS 373 Democratic Theory credit: 3 hours.
Examines theories of the nature and conditions of democracy; compares and analyzes contemporary democratic institutions. Prerequisite: PS 270, six hours of Political Science credit, or consent of instructor.

PS 375 Socialist Political Theory credit: 3 hours.
Surveys the origins and development of socialist theory from the late eighteenth century to the present; examines each contribution in terms of its goals, efficacy, and subsequent influence. Discussion focuses on authors such as Rousseau, Hegel, the Utopians, Marx and Engels, Anarcho-syndicalists, Lenin, Luxemburg, Trotsky, Mao, Guevara, and Garaudy. Prerequisite: PS 270, six hours of Political Science credit, or consent of instructor.

PS 376 American Political Theory credit: 3 hours.
Surveys American political thought from colonial times to the present. Prerequisite: PS 270, six hours of Political Science credit, or consent of instructor.

PS 377 Topics Contemp Pol Theory credit: 3 hours.
Examines specific topics and writers of contemporary political theory. Recent themes have included conceptions of power, rights, justice, and radical political thought. May be repeated to a maximum of 9 hours. Prerequisite: PS 270, six hours of Political Science credit, or consent of instructor.

PS 378 Topics Non-Western Pol Thought credit: 3 hours.
Considers political thought outside of the Greco-Roman, European, and North American tradition. May be repeated if topics vary. Prerequisite: PS 270, six hours of Political Science credit, or consent of instructor.

PS 380 International Cooperation credit: 3 hours.
A study of cooperation among states. Cooperation dilemmas and their solutions, with focus on institutional arrangements that are aimed to facilitate cooperation among states. Prerequisite: PS 280 or PS 281, six hours of Political Science credit, or consent of instructor.

PS 381 International Conflict - ACP credit: 3 hours.
Examines the conditions that promote war and peace between states. General topics covered are: historical patterns in warfare; causes of war, including arms races and power distributions; outcomes of war; and approaches to peace. This course is identical to PS 396 except for the additional writing component that fulfills the campus’ advanced composition requirement. Credit is not given for PS 381 and PS 396. Prerequisite: PS 280 or PS 281 or PS 283, six hours of Political Science credit, completion of campus Composition I general education requirement, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

PS 382 Intl Political Economy credit: 3 hours.
Examines the interaction between international politics and economics; locates ideologies and practices in the context of international economic relations. Considers such topics as international trade, the global monetary order, multi-national corporations, economic aid relationships, and food and energy politics. Prerequisite: PS 280 or PS 283, six hours of Political Science credit, or consent of instructor.
PS 383  **International Organization-ACP**  credit: 3 hours.

Examines the development of basic principles underlying world organization; also considers the principles, structure, methods, and operation of international governmental institutions. Gives special attention to the United Nations and related agencies and to their evolution from the League of Nations system. This course is identical to PS 395 except for the additional writing component that fulfills the campus' advanced composition requirement. Credit is not given for both PS 383 and PS 395. Prerequisite: PS 280 or PS 281 or PS 283, six hours of Political Science credit, or consent of instructor; completion of campus Composition I general education requirement. This course satisfies the General Education Criteria for a:

UIUC: Advanced Composition

PS 384  **Politics of Globalization**  credit: 3 hours.

Examines the basic concepts and politics associated with the emergence of the global society. This course evaluates divergent theoretical explanations for the emergence of global politics, as well as how and why the global society governs itself. It examines the strengths and shortcomings of the nation-state, markets, and democratization as responses to the imperatives of order, welfare, and legitimacy. Prerequisite: PS 280 or PS 283, six hours of Political Science credit, or consent of instructor.

PS 385  **Politics of the European Union**  credit: 3 hours.

Considers the history of the European Union and its current functions and operations. Focuses on the ongoing process of political and cultural integration. Consists of sections in Illinois and abroad, interacting extensively via the worldwide web. Same as FR 385, and GER 385. Prerequisite: PS 240 or PS 241, six hours of Political Science credit, or consent of instructor; crosslistings require language training appropriate for enrollment in the respective overseas programs.

PS 386  **International Law**  credit: 3 hours.

Analyzes the concepts and bases of public international law. Topics include sources and subjects of international law, as well as issues of jurisdiction, territory, law of the sea, and use of military force. Prerequisite: PS 280 or PS 283, six hours of Political Science credit, or consent of instructor.

PS 387  **National Security Policy**  credit: 3 hours.

Examines principal theories of international security and evaluates their capacity to explain the security behavior of states and other key international actors. Prerequisite: PS 280 or PS 283, six hours of Political Science credit, or consent of instructor.

PS 389  **International Communications**  credit: 3 hours.

Same as MS 389. See MS 389.

PS 390  **American Foreign Policy**  credit: 3 hours.

Considers the major foreign policy decisions currently confronting the United States government: analyzes their background, principal issues, and alternative actions, as well as the policy formulation process. Prerequisite: PS 280 or PS 283, six hours of Political Science credit, or consent of instructor.

PS 391  **Soviet & Post-Sov Foreign Pol**  credit: 3 hours.

Surveys Soviet and Post-Soviet foreign policy from 1917 to the present, with emphasis upon the forces shaping this policy; special attention to the interplay of ideology and national interest in policy formulation. Prerequisite: PS 280 or PS 283, six hours of Political Science credit, or consent of instructor.

PS 393  **Diplomatic Studies Practicum**  credit: 4 hours.

Practical introduction to the study of international organizations, consisting of three parts: academic modules in Urbana-Champaign; guest lectures and site visits in Vienna, Austria, and field trips TBA; and a final research paper based on fieldwork in Vienna, extending into late June. Enrollment requires prior admission to the Vienna Diplomatic Program.

PS 394  **Crisis Diplomacy**  credit: 3 hours.

A comparative study of foreign policy decision-making and diplomacy among the major states from 1816-1948 with a focus on crisis bargaining, management, and escalation. Foreign relations of Britain, France, Germany, Russia, Italy, Japan, and the United States are covered in light of international relations theories. Emphasis is placed on how domestic political struggles, like those between hardliners and accommodationists, and external factors, like alliances and international norms, affect decision-making. Comparisons are made between those crises that are peacefully settled and those that escalate to war and/or get out of control. Prerequisite: PS 280, PS 281, PS 283, or consent of instructor.

PS 395  **International Organization**  credit: 3 hours.

Examines the development of basic principles underlying world organization; also considers the principles, structure, methods, and operation of international governmental institutions. Gives special attention to the United Nations and related agencies and to their evolution from the League of Nations system. Credit is not given for both PS 383 and PS 395. Prerequisite: PS 280 or PS 281 or PS 283, six hours of Political Science credit, or consent of instructor.
PS 396  **International Conflict**  credit: 3 hours.
Examines the conditions that promote war and peace between states. General topics covered are: historical patterns in warfare; causes of war, including arms races and power distributions; outcomes of war; and approaches to peace. Credit is not given for both PS 381 and PS 396. Prerequisite: PS 280 or PS 281 or PS 283, six hours of Political Science credit, or consent of instructor.

PS 397  **Authoritarian Regimes**  credit: 3 hours.
Examines the various aspects of the politics in authoritarian regimes: their emergence and breakdown, the policy choices and institutions typically adopted, leadership change, and the theories that explain them. Historical case studies and statistical data will be used to examine real-world cases. Prerequisite: PS 240 or PS 241; or six hours of Political Sciences credit; or consent of instructor.

PS 398  **Strategic Interntl Relations**  credit: 3 hours.
Examination of basic concepts and tools for analyzing foreign policy and understanding international politics and economy. Simple game-theoretic models will be used to explore the logic and the mechanisms behind key policy issues in international economy, cooperation, security, and institutions. Prerequisite: PS 280 or PS 281; or six hours of Political Sciences credit; or consent of instructor.

PS 408  **Islam and Modern Society**  credit: 3 OR 4 hours.
Same as RLST 408. See RLST 408.

PS 410  **Neighborhoods and Politics**  credit: 3 hours.
Introduction to the social and political impacts of neighborhood life through readings, discussion, and field work. The political theories of local social networks, social ecology, the social context, third places, the physical form, and public space are examined. Students do library research and field work examining theories of social capital, civic engagement, new urbanism, public space, social context and urban form. Prerequisite: PS 100 or PS 101 or consent of instructor.

PS 411  **Campaigning to Win**  credit: 3 OR 4 hours.
Same as CMN 424. See CMN 424.

PS 412  **Genetics and Politics**  credit: 3 OR 4 hours.
Study of the relationship between political science, law, and biology. Two issues covered are (a) To what extent are social attitudes and behaviors a function of genetic neurophysiological causes? (b) given man's newfound ability to alter our species' genetic makeup, to what extent should government regulate this kind of research? Advanced knowledge of genetics is not required. 3 undergraduate hours. 4 graduate hours. Prerequisite: PS 101, or six hours of Political Science credit, or consent of instructor.

PS 413  **Sex, Power and Politics**  credit: 3 OR 4 hours.
Same as GWS 478. See GWS 478.

PS 418  **Language&Minorities in Europe**  credit: 3 OR 4 hours.
Same as FR 418, GER 418, LING 418, and SLAV 418. See FR 418.

PS 451  **Citizens & Democratic Process**  credit: 3 OR 4 hours.
Examines the concept of citizenship in American democracy. Topics to be studied include the changing conceptualization of democratic citizenship; the use of political information and mass communication; political and interpersonal trust; civic engagement; education; roles and responsibilities of political and civic leaders. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of instructor.

PS 452  **Normative Perspec Amer Pol**  credit: 3 OR 4 hours.
Normative Perspectives on American Politics. Examination of American democracy from normative perspectives. Provides value-based perspectives on the societal, economic, and political problems facing the US in the 21st Century. Examination of alternative political and governmental solutions to these problems by exploring the value judgments involved in choosing among these alternatives, and discussing the appropriate role of political leaders in making those choices in a context of democratic processes and institutions. 3 undergraduate hours. 4 graduate hours. Prerequisite: Enrollment in the Civic Leadership Program or approval of Director of Undergraduate Studies in Political Science.

PS 453  **Ethics, Leadership & Democracy**  credit: 3 OR 4 hours.
Examination of the relations between strong political leadership and democracy. Draws on both empirical and normative studies of political leadership, and gives special attention to the ethical challenges of democratic leadership. Case studies and student group presentations are used to illustrate the idea of "dirty hands dilemmas" confronted by decision-makers. Group presentations of real cases of leadership are also used to consider whether different political offices generate different ethical obligations, and how these obligations are related to a general commitment to democratic practices and values. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of instructor.

PS 455  **Pol Econ, Welfare & Democ**  credit: 3 OR 4 hours.
Political Economy, Societal Welfare, and Democracy. Explores the political and economic challenges of economic globalization in the 21st century. Examines how economic actors have responded to the development of international trade and financial markets across...
a variety of issue areas, including the welfare state, trade policy, exchange rate management, and fiscal policy. Emphasizes how domestic institutions interact with international economic pressures to determine policy strategies and outcomes with an emphasis on how greater economic openness affects the quality of democracy. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of instructor.

PS 456  **Democracy and Identity**  credit: 3 OR 4 hours.
A normative and empirical examination of the special issues surrounding the development and maintenance of democracy in plural societies. Analyzes the impact of racial, ethnic and religious diversity on citizenship, civil rights, political institutions and public policy, as well as on democratic stability more generally, in established and newly emergent democracies. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of instructor.

PS 457  **Dem Gov in a Global Setting**  credit: 3 OR 4 hours.
Examination of the basic concepts and politics associated with the emergence of a global society. Students evaluate competing explanations for the emergence of this new politics and how and why the global society governs itself. It examines the strengths and weaknesses of the nation-state, markets, and democratization as responses, respectively, to the imperatives of order, welfare, and legitimacy in the governance of world's peoples and states. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of instructor.

PS 480  **Energy and Security**  credit: 3 hours.
Same as GLBL 480 and NPRE 480. See NPRE 480.

PS 490  **Individual Study**  credit: 1 TO 4 hours.
Special topics not treated in regularly scheduled courses; designed primarily for juniors and seniors. 1 to 4 undergraduate hours. No graduate credit. May be repeated. Prerequisite: Evidence of adequate preparation for such study; consent of faculty member supervising the work; and approval of the department head.

PS 491  **Government Internship**  credit: 0 TO 6 hours.
Selected Government Internship participants together with faculty sponsor develop a program of study and research related to internship assignment. Consult departmental undergraduate advisor. May be repeated to a maximum of 12 hours. 0 to 6 undergraduate hours. No graduate credit. May be repeated. Prerequisite: Junior standing; 3.0 grade average for most internships; PS 101 and one 300-level political science course appropriate to internship program; acceptance by faculty sponsor.

PS 495  **Honors Seminar**  credit: 3 hours.
Research, reading, and discussion in selected topics and works in literature of political science. 3 undergraduate hours. No graduate credit. No more than 6 hours of credit may be earned by registration in this course and in PS 499. Prerequisite: Senior standing; 18 hours of political science; 3.5 grade point average in political science; consent of instructor.

PS 496  **Senior Honors Thesis**  credit: 2 TO 5 hours.
May be repeated. 2 to 5 undergraduate hours. No graduate credit. Prerequisite: Written consent of instructor; open only to seniors whose major is political science and who have a general University grade point of 3.0.

PS 499  **Special Topics**  credit: 3 hours.
Selected reading and research in political science. See Schedule for current topics. 3 undergraduate hours. No graduate credit. No more than 6 hours of credit may be earned by registration in this course and in PS 495. Prerequisite: Junior or senior standing; 6 hours of political science; consent of instructor.

PS 501  **Democratic Political Inst I**  credit: 4 hours.
Involves intensive analysis of major institutions and processes of democratic politics (national, state, local); research on selected topics in American government.

PS 502  **Democratic Political Inst II**  credit: 4 hours.
Discusses contemporary theories about the impact of democratic institutions on politics and policy.

PS 503  **US Congress**  credit: 4 hours.
Traces the development of Congress as an institution with special attention to the role of norms; considers intra-institutional aspects of Congress including committee decision-making, floor voting, and leadership; examines congressional relationships with other actors including the presidency and Supreme Court, interest groups, and constituents.

PS 504  **US Presidency**  credit: 4 hours.
Examines the literature and research topics on the American Presidency; includes presidential relations with the public and mass media, other governmental institutions and elites, and decision processes in the White House.

PS 505  **Law and Politics**  credit: 4 hours.
Analyzes legal institutions, legal decision-making, and constitutional politics in the American setting; includes both theoretical and methodological aspects of the law and politics literature.

**PS 506  **Pol Parties and Elections  **credit: 4 hours.**
Examines the role of political parties and elections in the political process; traces the evolution of American parties as a political institution, assesses their impact upon the policy-making processes, and considers macro-level influences upon the electoral process.

**PS 507  **Collect Action & Interest Grps  **credit: 4 hours.**
Provides a broad analysis of collective action, interest groups, and politics; examines the meaning of political interests and the forms they take; reviews various approaches to the study of interest groups; analyzes the formation and operation of interest groups; examines innovation and change in interest group politics and research.

**PS 511  **Proseminar Pol Behavior I  **credit: 4 hours.**
Introduces interdisciplinary approaches to the analysis of political behavior; formation of opinions, interests, roles, and beliefs.

**PS 512  **Proseminar Pol Behavior II  **credit: 4 hours.**
Continuation of PS 511. Prerequisite: PS 511.

**PS 513  **Mass Political Behavior  **credit: 4 hours.**
Covers the scholarly literature on, and the research techniques used to study, political participation, electoral behavior, political socialization, and public opinion.

**PS 514  **Founds of Organizational Behav  **credit: 4 hours.**
Same as BADM 510, PSYC 553, and SOC 575. See BADM 510.

**PS 515  **Analytic Problem Solving  **credit: 4 hours.**
An overview of strategies of decision-making and problem-solving. Explores strategic interaction, fundamentals of anticipatory maneuvering, and optimization under constraints. Drawing from the literatures in game theory and mathematical modeling. A mathematical background is not required. Involves applications to real-world cases. Prerequisite: Consent of instructor.

**PS 517  **Civic Leadership Practicum I  **credit: 2 OR 4 hours.**
The practicum seminar is the capstone experience of the BA/MA Civic Leadership Program and serves as the principal bridge between the academic and multi-faceted practicum components of the program. The Fellows will engage in an in-depth exploration of a predetermined policy issue (health care, international trade, welfare reform, citizen engagement, for example). The practicum seminar members will, over two semesters, prepare a background paper and report with options and recommendations, which the seminar members will be expected to make a part of the public debate and policymaking process. Prerequisite: Graduate standing in the Civic Leadership Program.

**PS 518  **Civic Leadership Practicum II  **credit: 2 OR 4 hours.**
Continuation of PS 517. Prerequisite: Graduate standing in the Civic Leadership Program.

**PS 519  **Topics in American Politics  **credit: 4 hours.**
Selected research topics designed for graduate study in American Politics. May be repeated to a maximum of 12 hours.

**PS 521  **Phil Bases of Pol Inquiry  **credit: 4 hours.**
Reviews the scope and subject matter of political science; methodological issues in political science and major conceptions of methodology as embodied in the current literature.

**PS 522  **Research Design and Techniques  **credit: 4 hours.**
Provides an overview of research techniques for answering questions of concern in political science; indicates the range of available tools; discusses problems in concept formation; and presents current methods of concept measurement. Prerequisite: PS 521 or consent of instructor.

**PS 523  **The Comparative Method  **credit: 4 hours.**
Reviews strategies for systematic research based on small number of cases. Emphasis on problems of conceptualization, measurement, and analysis.

**PS 524  **Methods in Intl Rel  **credit: 4 hours.**
Deals with major research methodologies in contemporary international relations; includes case studies, aggregate data, content analysis, survey research, gaming and simulations, and causal modeling; presumes knowledge of basic international relations theory. Prerequisite: PS 580.

**PS 525  **Formal Theory I: Game Theory  **credit: 4 hours.**
Introduction to game theory and its applications to the study of politics. Study of the central ideas and techniques of game theory.

**PS 526  Formal Theory II: Applications**  credit: 4 hours.
Survey of major topics in formal political theory and the application of key game-theoretic methods to the study of politics. Prerequisite: PS 525 or consent of instructor.

**PS 530  Intro to Applied Pol Research**  credit: 4 hours.
Introduces the analytic processes in the development of concepts, hypotheses, and theories; discusses the derivation, formulation, and specification of research problems in quantitative political research.

**PS 531  Quantitative Pol Analysis I**  credit: 4 hours.
Introduction to research design, data collection, data analysis and interpretation, sampling, and measures of statistical association and significance.

**PS 532  Quantitative Pol Analysis II**  credit: 4 hours.
Introduction to applied multiple regression analysis, and selected topics for research. Prerequisite: PS 531 or consent of instructor.

**PS 540  Proseminar Comp Politics I**  credit: 4 hours.
Surveys the major works, theories, and approaches that define the field of comparative politics. The substantive focus of the course is on advanced industrial countries.

**PS 541  Proseminar Comp Politics II**  credit: 4 hours.
Surveys the major works, theories, and approaches that define the field of comparative politics. The substantive focus of the course is on developing countries. Prerequisite: Completion of PS 540 is recommended.

**PS 543  Global Democratization**  credit: 4 hours.
Examines the roles of domestic and international factors, modes of transition, institutional choices and economic reforms in the transition from authoritarian rule. Comparisons are made of cases in Southern and Eastern Europe, Latin America, East Asia, the former Soviet Union, and others. Prerequisite: Completion of PS 540 or PS 541 is recommended.

**PS 544  Politics of African States**  credit: 4 hours.
Advanced research seminar. Focus will alternate among such topics in African politics as (a) the politics of agriculture (b) state and society (c) African political systems and the challenge of democratic practice and (d) political and economic crisis in Sub-Saharan Africa. May be repeated to a maximum of 12 hours if topics vary. Prerequisite: PS 242 and PS 341 or consent of instructor.

**PS 545  Politics of Post-Soviet States**  credit: 4 hours.
Study of states which have experienced extended interludes of communist power, especially including the new states of the former Soviet Union, the post-communist regimes of Eastern Europe and China, through a comparative examination of political, economic, and ethnonational problems of regime transformation. Analytic and research papers required. Prerequisite: Completion of PS 540 or PS 541 is recommended.

**PS 546  Comparative Political Behavior**  credit: 4 hours.
Examines the political behaviors and opinions of common citizens in dissimilar national contexts, focusing on the theoretical literature and empirical research on topics such as political participation, political culture and contention politics from a cross-national perspective. Prerequisite: PS 540 or PS 541.

**PS 548  Political Economy**  credit: 4 hours.
Same as ECON 517. See ECON 517.

**PS 549  Topics in Comparative Politics**  credit: 4 hours.
Selected research topics designed for graduate study in Comparative Politics. May be repeated to a maximum of 12 hours.

**PS 571  History of Pol Theories I**  credit: 4 hours.
Reading, analysis and discussion of the leading political thinkers from the Greeks to the middle of the seventeenth century.

**PS 572  History of Pol Theories II**  credit: 4 hours.
Reading, analysis and discussion of the leading political thinkers from the middle of the seventeenth century to the present.

**PS 579  Topics in Pol Theory**  credit: 4 hours.
Reading, analysis, and discussion of selected topics of political theory. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

**PS 580  Proseminar Intl Rel**  credit: 4 hours.
Deals with the field of international relations by examining major theories and approaches.

**PS 581 International War**  
Credit: 4 hours.  
Focuses on the conditions that influence war and peace between nation-states. Considers various factors at different levels of analysis (individual, national, dyadic, and systemic) in an attempt to understand why nations go to war. Readings will consist of current research in this topic area without ignoring "classical" works. Prerequisite: PS 580.

**PS 582 Intl Political Economy**  
Credit: 4 hours.  
Comprehensive introduction to major traditions in contemporary thought on the political structure and workings of the global economy. Presumes background knowledge pertaining to the workings of the international economy and its institutions as well as familiarity with the assumptions and approaches of classical I. P. E. thought and International Relations theory. Prerequisite: PS 580.

**PS 583 International Organizations**  
Credit: 4 hours.  
Examines the development and operations of international organizations with special emphasis on United Nations and related agencies. Focuses on activities in security, economic, and social issue area. Prerequisite: PS 580.

**PS 584 International Cooperation**  
Credit: 4 hours.  
Major theoretical perspectives and controversies in the literature of international cooperation and international institutions. Although broad spectrums of issues are covered, the focus is on basic logical questions, lines of reasoning, and analytical frameworks. Prerequisite: PS 580.

**PS 585 Conflict Management**  
Credit: 4 hours.  
Examines the conditions that influence the processes and outcomes of conflict management between nation-states. Assesses various approaches used in conflict management research with a special emphasis on the relationship between conflict management and theories of IR. Assumes some background knowledge regarding empirical studies of war. Prerequisite: PS 580.

**PS 587 Research Seminar in IR**  
Credit: 4 hours.  
Advanced seminar in international relations, providing graduate students with original research experience. Students design and execute a research program, resulting in a major paper suitable for conference presentation and/or publication. The seminar will rotate among specific research topics in the area of international conflict, international law and organization, and international political economy respectively. May be repeated in separate terms to a maximum of 12 hours. Prerequisite: PS 580.

**PS 589 Topics in Intl Rel**  
Credit: 4 hours.  
Selected topics designed for graduate study in international relations. May be repeated under different instructors to a maximum of 12 hours. Prerequisite: PS 580 or PS 524, or consent of instructor.

**PS 590 Research in Selected Topics**  
Credit: 2 to 12 hours.  
Research in selected topics by arrangement with the instructor.

**PS 598 Dissertation Design Seminar**  
Credit: 0 hours.  
Addresses the basic steps involved in the development of a dissertation proposal; aims to facilitate the completion of the dissertation proposal for students who have passed the qualifying examinations. Approved for S/U grading only. Prerequisite: Successful completion of required qualifying examinations.

**PS 599 Thesis Research**  
Credit: 0 to 16 hours.  
May be repeated. Approved for S/U grading only.
Professional Science Master's Program

Graduate College
Dean of College: Debasish Dutta
Department Office: 204 Coble Hall, 801 South Wright Street, Champaign
Phone: 333-0035

PSM 501  **PSM Industry Seminar I**  credit: 0 hours.
Engagement with students across science disciplines to address current developments in the science professions. Management and leadership challenges in science and issues facing science professionals in the workplace are addressed. Learning occurs through lecture and discussion with industry leaders. Taken in the first semester of the Professional Science Master's (PSM) cohort.

PSM 502  **PSM Industry Seminar II**  credit: 0 hours.
Taken in the second semester of the PSM cohort, builds on the experience of the first semester industry seminar. Learning occurs through guest lectures by and discussions with industry leaders. Project management is explored. Engagement with students across science disciplines to address current developments in the science professions. Practical issues facing science professionals in the workplace are addressed. Prerequisite: PSM 501.
PSYC 100  Intro Psych  credit: 4 hours.
Study of human behavior with special reference to perception, learning, memory, thinking, emotional life, and individual differences in intelligence, aptitude, and personality; emphasis on the scientific nature of psychological investigations; and discussion of research methods and the relation of their results to daily life and everyday problems. Lectures, discussions, and six hours of participation as a subject in psychological experiments. Credit is not given for both PSYC 100 and either PSYC 103 or PSYC 105.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

PSYC 102  Psych Orientation  credit: 0 hours.
Lectures designed to acquaint the psychology major with the various specializations available in the field, career exploration procedures, and a wide range of opportunities of special interest to psychology students. Recommended for freshmen in psychology. Approved for S/U grading only.

PSYC 103  Intro Experimental Psych  credit: 4 hours.
Surveys the field of psychology with an emphasis on experimental approaches to understanding the mind and human behavior; addresses perception, learning, memory, thinking, motivation, emotions, personality, development, intelligence, and other topics in psychology. Lectures with discussion, debates, and laboratory experiments in weekly sections. Credit is not given for both PSYC 103 and either PSYC 100 or PSYC 105.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

PSYC 105  Psych Introduction  credit: 4 hours.
Study of human behavior with special reference to perception, learning, memory, thinking, emotional life, and individual differences in intelligence, aptitude, and personality; emphasis on the scientific nature of psychological investigations; and discussion of research methods and the relation of their results to daily life and everyday problems. Lectures meet four days per week. See class schedule for enrollment restrictions. Credit is not given for both PSYC 105 and either PSYC 100 or PSYC 103.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

PSYC 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

PSYC 201  Intro to Social Psych  credit: 3 hours.
Systematic study of social factors in individual and group behavior; attention to social perception, motivation, and learning; attitudes, norms, and social influence processes; the development and dynamics of groups; and the effects of social and cultural factors on the individual. Credit is not given for both PSYC 201 and SOC 201. Prerequisite: PSYC 100 or PSYC 103.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

PSYC 210  The Brain and the Mind  credit: 3 hours.
Survey of current knowledge and speculation regarding the brain's role in perception, motivation, sexual behavior, thinking, memory, and learning, based upon human clinical data and research in animal models. Prerequisite: PSYC 100, PSYC 103, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

PSYC 216  Child Psych  credit: 3 hours.
Study of the psychological development of the child. Credit is not given for both PSYC 216 and EPSY 236. Prerequisite: PSYC 100 or PSYC 103.
PSYC 217  **Comparative Development**  credit: 3 hours.
Survey of phylogenetic and ontogenetic development of behavior. The first part of the course considers the comparative psychology of representative phyla, with special emphasis on the development of sensorimotor coordination, motivation, and learning. The second half of the course is concerned with development of behavior in the individual organism, with most attention devoted to behavioral changes during the life span of vertebrate organisms. Prerequisite: PSYC 100 or PSYC 103.

PSYC 220  **Images of Mind**  credit: 3 hours.
Introduction to neuroimaging and cognitive neuroscience, with a particular emphasis on critically evaluating neuroscience in the media. In addition to surveying reports in the popular press and their corresponding science articles, covers basic neuroanatomy, neuroimaging techniques, and a range of topics from cognitive neuroscience. Prerequisite: PSYC 100, PSYC 103, PSYC 105 or consent of instructor.

PSYC 224  **Cognitive Psych**  credit: 3 hours.
Introduction to the psychological study of human information processing and memory; acquisition, retrieval, and forgetting; and general knowledge, concepts, reasoning, and related issues in cognition. Prerequisite: PSYC 100 or PSYC 103.

PSYC 230  **Perception & Sensory Processes**  credit: 3 hours.
Survey of the experimental psychology of sensory and perceptual processes and behavior; emphasis on the contribution of behavior science to understanding subjective experience of the physical and social environment. Prerequisite: An introductory course in psychology, physiology, or animal biology.

PSYC 235  **Intro to Statistics**  credit: 3 hours.
Development of skill and understanding in the application of statistical methods to problems in psychological research; topics include descriptive statistics, probability theory and distributions, point and interval estimation, and hypothesis testing. Students may not receive credit for this course and STAT 100, ECON 202, EPSY 480, PSYC 301 or SOC 485. Prerequisite: PSYC 100 or PSYC 103; college algebra or equivalent; or consent of academic advisor.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

PSYC 238  **Abnormal Psych**  credit: 3 hours.
Conceptions and facts about disordered behavior, including psychoses, neuroses, and other patterns of psychological disturbance. Prerequisite: PSYC 100 or PSYC 103.

PSYC 239  **Community Psych**  credit: 3 hours.
Redefines human and social problems and the implications for social programs and policies; reviews the historical antecedents, conceptual models, strategies and tactics of social and community programs; and employs examples from selected social systems (e.g., criminal justice, education, employment, and mental health). Prerequisite: PSYC 100 or PSYC 103.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

PSYC 240  **Psych of Gender**  credit: 3 hours.
Conveys a basic knowledge of current research and issues in the psychology of gender. A wide range of topics including biological, cognitive familial and societal influences on gender role formation and development will be examined. Same as GWS 220. Prerequisite: PSYC 100 or equivalent.

PSYC 245  **Industrial Org Psych**  credit: 3 hours.
Systematic study of the application of psychological methods and principles in business and industry; emphasis on personnel selection and factors influencing efficiency. Prerequisite: PSYC 100 or PSYC 103; credit or concurrent registration in a statistics course.

PSYC 248  **Learning and Memory**  credit: 3 hours.
Survey of basic phenomena in learning and memory emphasizing experimental data from animal and human research. Prerequisite: PSYC 100 or PSYC 103.

PSYC 250  **Psych of Personality**  credit: 3 hours.
Study of personality from various points of view: biological, experimental, social, and humanistic; surveys theory and empirical research in the study of personality. Prerequisite: PSYC 100 or PSYC 103.

PSYC 290  **Research Experience in Psych**  credit: 1 TO 4 hours.
Supervised participation in research and scholarly activities, usually as an assistant to an investigator. Approved for S/U grading only. May be repeated to a maximum of 9 hours. Prerequisite: Ten hours of psychology or cognate area, or written consent of instructor.

PSYC 296  **Intro Current Topics in Psych**  credit: 3 hours.
Introductory treatment of current topics in the field of psychology. May be repeated up to 6 hours in the same semester, to a total of 9 hours in subsequent semesters. Prerequisite: PSYC 100 or consent of instructor.

**PSYC 301 Psychological Statistics**  credit: 5 hours.
Development of skill and understanding of statistical methods for problems in psychological research; topics include descriptive statistics, probability theory and distributions, point and interval estimation, and hypothesis testing. The class also involves a computer laboratory. Strongly recommended to students who plan to pursue graduate studies in Psychology. Students may not receive credit for this course and STAT 100, ECON 202, EPSY 480, PSYC 235, or SOC 485.

This course satisfies the General Education Criteria for a:
   UIUC: Quant Reasoning I

**PSYC 311 Techniques of Bio Psych**  credit: 3 hours.
Introduction to research techniques used in the physiological study of mental processes: includes recording "brain waves," behavioral analysis of drug effects, anatomy of the brain, hormones and behavior, and related topics. The course will give students direct experience working with both human and laboratory animal subjects to qualify for more advanced course and research opportunities. Prerequisite: Credit or concurrent registration in PSYC 210, or consent of instructor.

**PSYC 314 Introduction to Aging**  credit: 3 hours.
Same as CHLH 314, HDFS 314, RST 314, and REHB 314. See CHLH 314.

**PSYC 316 Intro to Psych of Hearing**  credit: 3 hours.
Examines the physiology and psychophysics of hearing from the micromechanics of the cochlea to the localization of sound and the acoustics of concert halls, to understand how the auditory system processes information to create perceptions of acoustic events. Prerequisite: PSYC 210.

**PSYC 318 Psych of the Infant**  credit: 3 hours.
Early infant behavior, emphasizing critical evaluation of the various research techniques; prenatal and perinatal influences, ontogeny of psychological processes, environmental determinants, and infant assessment. Prerequisite: PSYC 216.

**PSYC 321 Human Memory**  credit: 3 hours.
Advanced treatment of human memory. Examines basic theory and methodology; types of memory; semantic, episodic, procedural, memory for language, places, and events; knowledge and memory; autobiographical memory; exceptional memory; mnemonics. Prerequisite: Six hours in psychology at or above the 200 level, such as PSYC 224 or PSYC 248.

**PSYC 322 Intro to Mental Retardation**  credit: 3 hours.
Same as REHB 322 and SPED 322. See SPED 322.

This course satisfies the General Education Criteria for a:
   UIUC: Behavioral Sciences

**PSYC 324 Developmental Psychopathology**  credit: 3 hours.
Overview of major theories and research in the field of developmental psychopathology. An emphasis will be placed on understanding how psychopathology is conceptualized from a developmental perspective. Topics will involve issues related to etiology, assessment, classification/diagnosis, and intervention. A range of psychological problems in childhood and adolescence will be discussed to illustrate the central themes. Prerequisite: PSYC 100 and either PSYC 216 or PSYC 238, or consent of instructor.

**PSYC 326 Development and Relationships**  credit: 3 hours.
Advanced overview of theory and research on interpersonal relationships across the life course and their implications for emotion, cognition, and behavior. Particular emphasis is placed on close relationships, i.e., romantic partners, family members, and mentors. Same as EPSY 330. Prerequisite: PSYC 216.

**PSYC 331 Cognitive Psych Lab**  credit: 4 hours.
Examination of the methods used to study human thought processes, including attention, memory, decision-making, language and concepts. Students will learn to design, carry out, and report research in cognitive psychology. Prerequisite: PSYC 224 or PSYC 248; PSYC 235.

**PSYC 332 Lab Meth in Soc Psych**  credit: 4 hours.
Lecture and laboratory in the methods and techniques of social psychology research in laboratory settings. Same as SOC 382. Prerequisite: PSYC 201 or SOC 201; PSYC 235 or SOC 280.

**PSYC 333 Soc Psych in Nat Settings**  credit: 4 hours.
Methods and techniques of social psychological research in natural settings. Students formulate and carry out research problems using procedures appropriate for research in natural settings. Prerequisite: PSYC 201 or SOC 201; PSYC 235 or SOC 280.
PSYC 334 Vision and Space Lab credit: 4 hours.
Examination of the research methods used to study human visual and spatial processes, including visual illusion, attention, imagery, navigation and spatial memory. Students will learn to design, carry out, and report psychological research. Prerequisite: PSYC 230 and statistics (PSYC 235 or equivalent).

PSYC 336 Topics in Clin/Comm Psych credit: 3 hours.
Survey and critical review of subdisciplines in clinical/community psychology; concepts, methods, and assessments, intervention strategies and tactics. Subdisciplines addressed will vary. See Class Schedule for current titles. May be repeated with approval to a maximum of 6 undergraduate hours in same term, or to a maximum of 9 undergraduate hours in subsequent terms. Prerequisite: PSYC 238 or PSYC 239 or both depending on topic.

PSYC 340 Community Projects credit: 4 hours.
Principles of psychology applied to service problems in the community; students serve as nonprofessional mental health workers in supervised experiences in schools, hospitals, and other nontraditional settings. May be repeated in the same or subsequent terms to a maximum of 8 undergraduate hours. Prerequisite: PSYC 100; junior or senior standing; and consent of instructor. Individual sections may require additional courses and prerequisites - consult the instructor.

PSYC 341 Advanced Community Projects credit: 4 hours.
Advanced discussion and practicum on principles of psychology which may supplement mental health and other human services in a community. Students serve as nonprofessional mental health workers in supervised experiences in school hospitals and other nontraditional settings. May be repeated in the same or subsequent terms to a maximum of 8 undergraduate hours. Prerequisite: PSYC 340 and consent of instructor.

PSYC 350 Personality Lab credit: 4 hours.
Study of personality emphasizing active participation in designing, conducting, analyzing, and presenting of research; lectures concern the practical aspects of research methodology and the philosophy of personality research; and laboratory involves conducting original research in small groups. Prerequisite: PSYC 235 or equivalent; and PSYC 250 or consent of instructor; completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

PSYC 351 Thinking and Reasoning credit: 3 hours.
An overview of historical and contemporary research on thinking, reasoning, and problem-solving. Topics will include normative systems of logic, defeasible/non-monotonic reasoning, psychological models of reasoning, heuristic problem-solving, insight and creativity, Bayesian decision-making, decision-making biases, and fast-and-frugal heuristics. Same as PHIL 351. Prerequisite: Either PSYC 100 and PSYC 224, or PHIL 101 and PHIL 102, or consent of instructor.

PSYC 352 Attitude Theory and Change credit: 3 hours.
Comprehensive analysis of theories of attitude acquisition, organization, and change; emphasis on attitude change through communication and effects of persuasive communication on public opinion. Same as MS 352 and SOC 300. Prerequisite: PSYC 201 or SOC 201, or a comparable course of introduction to social psychology.

PSYC 353 Social Cognition credit: 3 hours.
Analysis of theory and research on problems related to the manner in which persons judge themselves and others on the basis of information received; topics include impression formation integration, determinants of interpersonal attractions, and attribution processes. Prerequisite: PSYC 201 and PSYC 235, or consent of instructor.

PSYC 354 Small Group Behavior credit: 3 hours.
The nature of interpersonal transactions; theories and methods for their investigation; and consideration of both individual and social determinants of such transactions. Prerequisite: PSYC 201.

PSYC 356 Evolution of Mind credit: 3 hours.
Interpretation of human thought and behavior through the lens of evolutionary theory. Presents the basics of evolutionary theory as applied to human and animal psychology, describes the results of research on selected subtopics, and evaluates alternative explanations of human behavior that historically have been offered and continue to influence the social sciences today. The goal is to enhance understanding of why we behave the way we do. Special emphasis will be places on philosophical analysis of the presented material. Same as PHIL 356. Prerequisite: PSYC 100, MCB 150, PHIL 101, or consent of instructor.

PSYC 357 Intro Cognitive Science credit: 3 hours.
In-depth introduction to cognitive science: the study of mind and intelligence, natural and artificial. Covers major integrative themes including inverse optics and vision; induction and reasoning; learnability; language; philosophy; minds and brains; evolution;
computation and computability; experimental and modeling techniques; information theory; knowledge representation; interrelations among these topics. Same as PHIL 357. Prerequisite: One of PSYC 224, PSYC 248, PHIL 202, PHIL 270, or consent of instructor.

PSYC 358  Human Factors  credit: 4 hours.
Introduction to human factors, ergonomics, engineering psychology, history of ergonomics, human-machine relations, displays and controls, human-computer interaction, industrial and aviation systems, physiology of work and anthropometrics, cognitive ergonomics, human reliability, human as manual controller, human-machine systems design, prototyping, professional practice and ethics, laboratory exercises. Same as AVI 358, and IE 340. Prerequisite: PSYC 100, PSYC 103, or consent of instructor.

PSYC 359  Visual Cognition  credit: 3 hours.
In-depth overview of the field of visual cognition, with topics including (but not limited to): visual perception, the integration of visual information over time, pattern and object recognition, attention and inattention, visual memory precision and memory distortion, and change detection. The course emphasizes the nature of visual representations, the methods used to study such representations, and the links between perception, attention, memory, and awareness. Prerequisite: PSYC 224 and PSYC 230; or consent of instructor.

PSYC 361  The Psychology of Aging  credit: 3 hours.
Survey of changes in behavioral function in later adulthood, with emphasis on methodologies for studying aging, cognitive function, personality, social psychology, and psychopathology. Prerequisite: PSYC 100; Recommended: PSYC 216 or PSYC 224.

PSYC 363  Dev Psych Lab  credit: 4 hours.
Experience in designing, carrying out, and reporting an original research project. Prerequisite: PSYC 216 and PSYC 235, or equivalent.

PSYC 373  Culture & Psychology  credit: 3 hours.
Centers on cross-cultural study of substantive areas such as personality, motivation, socialization, interpersonal behavior, psychological environments, cognition and cognitive development, ethnocentrism and stereotypes, and visual perception; emphasis on methodological limitations and contributions of cross-cultural study; and discussion of current problems and research. Same as ANTH 373. Prerequisite: Six hours of psychology or anthropology, or consent of instructor.

PSYC 381  Beg Prac in Mental Hlth  credit: 4 hours.
Didactic instruction and supervised practicum experience in a community treatment agency; self-report, observational, and physiological approaches to client assessment; and lecture-discussion and direct agency experience each week.

PSYC 383  Adv Prac in Mental Hlth I  credit: 4 hours.
Supervised practicum experiences in a community agency.

PSYC 385  Adv Prac in Mental Hlth II  credit: 4 hours.
Supervised practicum experiences in a community agency.

PSYC 396  Intermed Curr Topics in Psych  credit: 3 hours.
Intermediate treatment of current topics in the field of psychology. May be repeated to a maximum of 6 hours in a semester, to a maximum of 12 hours in subsequent semesters. Prerequisite: PSYC 100 or consent of instructor; particular sections may have additional 200-level prerequisites.

PSYC 398  Junior Honors Seminar  credit: 0 TO 4 hours.
Seminar on experimental methods and contemporary psychological research. Approved for both letter and S/U grading. Prerequisite: Junior standing and admission to departmental honors program.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

PSYC 400  Psych for Med Stu & Hlth Prf  credit: 3 OR 4 hours.
Advanced treatment of psychological concepts with an emphasis on their interaction with medicine. Topics include: perception, learning, memory, thinking, emotions, and individual differences; psychological theories and data relevant to the analysis of illness and disease; decision making and medical problem solving. 3 undergraduate hours. 4 graduate hours. Approved for both letter and S/U grading. Prerequisite: Twelve hours of psychology and a 3.0 grade point average; and senior, graduate, or professional standing; or consent of instructor.

PSYC 402  Intro Clin Neuropsych  credit: 4 hours.
Fundamental concepts of clinical neuropsychology will be introduced, and students will learn the neuropsychological measures that are typically employed in assessment. The course will take a developmental perspective, and readings will address assessment issues in children and adolescents as well as adults. The course will be conducted as a lecture/seminar, with a focus on class participation. Actual testing data will be distributed to the class, and discussion will focus on interpretation and case conceptualization. Students will also be required to learn about and administer tests. Prerequisite: PSYC 210 and PSYC 238 or consent of instructor.
PSYC 403 Memory and Amnesia credit: 3 OR 4 hours.
Examination of the nature of amnesia and what it teaches us about the organization of normal human memory. Coverage will include studies of amnesia and other circumscribed memory impairments in human patients, and other neuroscientific and cognitive explorations of memory prompted by the phenomena of amnesia. Same as NEUR 403. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 210 and/or PSYC 224, or consent of instructor.

PSYC 404 Cognitive Neuroscience credit: 3 OR 4 hours.
Examination of research concerned with identifying and characterizing the cognitive systems supporting such capacities as memory, attention, and visual processing, and with understanding how such cognitive activities arise from the functioning of specific brain modules and brain mechanisms. Same as NEUR 405. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 210 and/or PSYC 224, or consent of instructor.

PSYC 406 Statistical Methods I credit: 4 hours.
Techniques in applied statistics used in psychological research, including simple linear regression, partial and multiple correlation, and nonparametric methods; thorough review of statistical estimation and significance tests; emphasizes applied statistics and statistical computing. Credit is not given for both PSYC 406 and SOC 586. Prerequisite: Twelve hours in psychology and PSYC 235, or equivalent.

PSYC 407 Statistical Methods II credit: 4 hours.
Continuation of PSYC 406. Experimental design, including Latin Squares, factorials, and nested designs; expected mean squares; analysis of covariance; emphasizes the general linear model. Credit is not given for both PSYC 407 and SOC 587. Prerequisite: PSYC 406.

PSYC 410 Hate Crimes credit: 3 hours.
Same as AFRO 410. See AFRO 410.

PSYC 411 Bio Psych Lab credit: 3 hours.
For students doing research in biological, behavioral and cognitive neuroscience. This course will provide in-depth background knowledge for their research, and teach students to make effective oral and written presentations of their findings. The course may be taken for two terms with the first term emphasizing a review of the literature and the second term concentrating on the presentation of the results. Same as NEUR 411. May be repeated to a maximum of 6 hours. 3 undergraduate hours. Prerequisite: PSYC 311 or equivalent and students must arrange to do a research project with a faculty member.

PSYC 412 Neurobiology of Vision credit: 3 OR 4 hours.
Topics include physiological optics, the retina, cerebral cortex, effects of early visual experience on eye and brain development, and neural control of eye movements. Emphasis will be on aspects of vision for which direct links can be drawn between psychology and neurobiology, such as color vision, motion perceptions and depth perception. Same as NEUR 412. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 210, or an introductory course in neurobiology, or consent of instructor. Students should have knowledge of the overall structure of the brain and how neurons communicate.

PSYC 413 Psychopharmacology credit: 3 OR 4 hours.
Behavioral and physiological effects of chemicals either used therapeutically to treat psychological disorders or that may be abused for their psychotropic effects; emphasizes mechanisms and models for the study of drug action. Same as NEUR 413. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: PSYC 210, MCB 150, or consent of instructor.

PSYC 414 Brain, Learning, and Memory credit: 3 OR 4 hours.
Conveys a knowledge of current research on the physiological bases of learning and memory; considers a wide range of topics from molecular (e.g., cellular morphological and functional plasticity) to relatively molar (e.g., effects of clinical and experimental brain damage on learning and memory processes). Same as NEUR 414. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 210, MCB 150, or consent of instructor.

PSYC 416 African American Psychology credit: 3 OR 4 hours.
Same as AFRO 411. See AFRO 411.

PSYC 420 Theories of Psychotherapy credit: 4 hours.
Same as EPSY 420. See EPSY 420.

PSYC 421 Principles of Psychophysiology credit: 3 OR 4 hours.
Theoretical and practical aspects of human psychophysiology; measurement techniques and the application of psychophysiological principles to problems in developmental, clinical, social, and experimental psychology. Same as NEUR 421. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 235, six hours of psychology, and an introductory course in physiology.
Survey of theory and research on the acquisition of language, concentrating on the acquisition of a first language by the young child. Same as LING 423 and MS 423. 3 undergraduate hours. 4 graduate hours. Prerequisite: Six hours of psychology or linguistics above the 100-level, or consent of instructor.

**PSYC 425  Psych of Language  credit: 3 OR 4 hours.**
Survey of theory and research in the psychology of language; topics include relation of linguistics and psychology, language development, and influence of language on perception, memory, and thought. 3 undergraduate hours. 4 graduate hours. Credit not given for both PSYC 425 and LING 425. Prerequisite: Six hours of psychology or consent of instructor.

**PSYC 427  Language and the Brain  credit: 3 OR 4 hours.**
How the human brain supports using and learning language. Topics covered: measuring brain activity during language; brain lateralization for language; the effect of brain damage; language learning and language universals; communication and language in other animals; evolution of language. Same as LING 427 and SHS 427. 3 undergraduate hours. 4 graduate hours. Prerequisite: One of PSYC 210, PSYC 224, PSYC 248, LING 225, SHS 170, SHS 171, or consent of instructor.

**PSYC 429  Hum Comp Interaction Lab  credit: 4 hours.**
Examines basic concepts, methodology, and critical skills needed in conducting research, evaluating and designing human-computer interfaces. Laboratory includes performing experiments in human-computer interaction. Same as AVI 429 and IE 446. Prerequisite: PSYC 224, PSYC 358, or PSYC 456; and a course in computer science; or consent of instructor.

**PSYC 430  Early Adolescent Development  credit: 2 OR 4 hours.**
Same as EPSY 430. See EPSY 430.

**PSYC 432  Genes and Behavior  credit: 3 hours.**
Same as ANTH 432, IB 432 and NEUR 432. See IB 432.

**PSYC 433  Evolutionary Neuroscience  credit: 3 OR 4 hours.**
Current methods, tools, and progress in evolutionary biology and quantitative genetics of brain and behavior of vertebrates. Same as NEUR 433 and PHIL 433. 3 undergraduate hours. 4 graduate hours. Prerequisite: IB 150 or PSYC 210.

**PSYC 435  Math Form in Psych Theory  credit: 2 TO 4 hours.**
Illustration of mathematical formulations by studying quantitative treatments of various psychological processes; emphasis on learning theory, psychophysical laws, and other selected topics; and the development of simple mathematical tools as required. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: Elementary statistics of probability, elementary calculus, and 6 hours of psychology, or consent of instructor.

**PSYC 443  Psychophysiology in Ex & Sport  credit: 3 OR 4 hours.**
Same as KIN 443. See KIN 443.

**PSYC 444  Hormones and Behavior  credit: 3 OR 4 hours.**
Survey of the behavioral effects of hormones in vertebrates and invertebrates; emphasizes the extensive literature on hormonal effects on reproductive and social behavior. Same as IB 430 and NEUR 444. 3 undergraduate hours. 4 graduate hours.

**PSYC 447  Psych of Sport Performance  credit: 3 OR 4 hours.**
Same as KIN 447. See KIN 447.

**PSYC 450  Cognitive Psychophysiology  credit: 3 OR 4 hours.**
Survey of the theory and practice of using recordings of brain electrical activity to study normal and abnormal perception, attention, decision-making, memory, response preparation, and language. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 224 or equivalent; PSYC 210 recommended.

**PSYC 451  Neurobio of Aging  credit: 0 TO 4 hours.**
Study of the neurobiological consequences of aging with an emphasis on brain changes at the cellular and systems level, using animal models of healthy and pathological aging. Same as KIN 458 and NEUR 451. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 210 or related courses or consent of instructor.

**PSYC 452  Cog Neuro of Aging  credit: 3 OR 4 hours.**
Study of the cognitive neuroscience of aging with emphasis on human research. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 210 or related courses or consent of instructor.

**PSYC 453  Cog Neuroscience of Vision  credit: 3 OR 4 hours.**
Overview of the neuroscience of the visual system, the eye and subcortical structures, with a focus on the visual cortex and higher-level vision (e.g. attention and object perception). Same as NEUR 453. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 210, PSYC 220, PSYC 224, PSYC 230 or consent of instructor.

**PSYC 455 Organizational Psych**  credit: 2 TO 4 hours.
Social psychological research and theory applied to industrial problems; emphasis on interaction and communication theory, role theory, leadership theory, motivational and perceptual theory, and group structure theory as an aid in understanding and analyzing industrial problems. 3 undergraduate hours. 2 to 4 graduate hours. Prerequisite: PSYC 201 or PSYC 245.

**PSYC 456 Hum Perf and Eng Psych**  credit: 3 OR 4 hours.
Human capabilities and limitations in processing information; models and theories of signal detection, stimulus analysis, short-term memory, choice reaction time, decision-making, attention, and motor performance are evaluated with respect to experimental data; emphasizes theory, although implications for design of man-machine systems are considered. Same as AVI 456 and IE 445. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 100 or PSYC 103 or consent of instructor.

**PSYC 457 Human Error**  credit: 3 OR 4 hours.
Same as AVI 447. See AVI 447.

**PSYC 460 Mod Viewpoints in Psych**  credit: 2 TO 4 hours.
Examines modern behaviorism, psychoanalysis, and cognitive psychology, viewed as conceptions of man, styles of theorizing and investigative strategies; critically evaluates the more influential theories and research. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: Six hours of psychology.

**PSYC 462 Cognitive Development**  credit: 3 OR 4 hours.
Survey of theory and research on the development of problem-solving skills, memorial and metamemorial processes, logical thinking, and language. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 216 and PSYC 235.

**PSYC 465 Personality and Soc Dev**  credit: 3 OR 4 hours.
Major theories of personality and social development, with attention to processes of social learning, individual differences in personality development, and outcomes of social development; applications to school, home, and other field settings. Same as EPSY 405. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 216 or EPSY 236 or equivalent.

**PSYC 466 Image and Neuroimage Analysis**  credit: 3 OR 4 hours.
Fundamental concepts, techniques/algorithms, and emerging directions of research in image and neuroimage analysis: image enhancement, image and brain image segmentation, neuroimage registration, functional magnetic resonance imaging (fMRI) time series analysis, and brain connectivity, etc. Same as BIOE 466 and STAT 466. 3 undergraduate hours. 4 graduate hours. Prerequisite: One of STAT 400, PSYC 406, an equivalent, or consent of instructor; basic programming experience in Matlab, or C/C++, or similar.

**PSYC 468 Psych and Law**  credit: 2 TO 4 hours.
Examines relationship of the administrative, civil, and criminal justice systems to educational and mental health institutions; individual rights, social issues, and psychological well being. 3 undergraduate hours. 2 to 4 graduate hours. Prerequisite: Six hours of social science.

**PSYC 470 Asian American Psychology**  credit: 3 OR 4 hours.
Examines central themes in the psychological study of Asian Americans such as race, ethnicity and culture, family issues, gender and sexuality, stereotype and discrimination, mental health and counseling, and public policy; analysis of historical, sociological, political, cultural, local, and global backdrops for the individual psychological experiences. Same as AAS 470. 3 undergraduate hours. 4 graduate hours. Prerequisite: PSYC 100 or consent of instructor.

**PSYC 472 Environmental Psychology**  credit: 4 hours.
Same as NRES 472. See NRES 472.

**PSYC 475 Personnel Psych**  credit: 3 OR 4 hours.
Introduces problems and research relevant to personnel issues in organizations. Topics include: individual differences; selection of personnel; test theory; performance appraisal; equal employment opportunity legislation, regulation, and litigation; assessing bias in selection. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: PSYC 235 or equivalent, and either PSYC 245 or BADM 313.

**PSYC 477 Philosophy of Psychology**  credit: 3 OR 4 hours.
Same as PHIL 477. See PHIL 477.

**PSYC 490 Meas and Test Dev Lab**  credit: 4 hours.
The measurement of human behavior in psychological studies; the construction and use of psychological tests; introduction to tests of intelligence, achievement, personality, and interest; and practice in test construction, administration, and validation. Lectures and laboratory. Prerequisite: A knowledge of statistics equivalent to that from PSYC 235.

PSYC 491  Honors Individual Study    credit: 2 TO 4 hours.
May be repeated to a maximum of 10 hours. 2 to 4 undergraduate hours. No graduate credit. Prerequisite: Junior standing; admission to psychology honors program.

PSYC 493  Honors Senior Thesis    credit: 2 TO 4 hours.
Planning, researching, and writing of an undergraduate honors thesis, under supervision of a faculty member, on a problem of appropriate scope and character. 2 to 4 undergraduate hours. No graduate credit. Prerequisite: PSYC 398.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

PSYC 494  Advanced Research in Psych    credit: 1 TO 4 hours.
Supervised independent investigation of special topics in psychology; requires a written report with a final copy submitted for departmental records. May be repeated to a maximum of 9 hours. 1 to 4 undergraduate hours. Prerequisite: Ten hours of psychology or cognate area, or written consent of instructor.

PSYC 496  Adv Current Topics in Psych    credit: 2 TO 4 hours.
Advanced treatment of current topics in the field of psychology. May be repeated to a maximum of 9 hours. Prerequisite: PSYC 100 and junior standing, or consent of instructor; particular sections may have additional 200-level and/or 300-level prerequisites.

PSYC 497  Aviation Psychology    credit: 2 TO 4 hours.
Same as AVI 495. See AVI 495.

PSYC 498  Senior Honors Seminar    credit: 0 TO 4 hours.
Continuation of PSYC 398. May be repeated. 0 to 4 undergraduate hours. No graduate credit. Approved for both letter and S/U grading. Prerequisite: PSYC 398.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

PSYC 502  Systematic Psych    credit: 4 hours.
Analysis of methodological problems, including forms and roles of models and theories, status of unobservable organismic events, validation of measures and manipulations, possible forms of laws, forms of data language, and status of private reports; evaluation of the approaches to these problems provided by several varieties of behaviorism, standard and omnitheoretic views in the philosophy of science, and network methods. Prerequisite: Twelve hours of psychology.

PSYC 503  Categories and Concepts    credit: 4 hours.
The psychology of human concepts, including concept learning, categorization, the structure of concepts in memory and conceptual development. Prerequisite: Graduate standing in psychology or consent of the instructor.

PSYC 504  Theories of Attention    credit: 2 OR 4 hours.
Systematic study of the psychology of attention, including focused and divided attention, dual-task performance, attention and memory, attention and automatization, and skilled performance. The emphasis is primarily theoretical, focusing on current approaches and the historical developments that led to them. Prerequisite: Graduate standing in Psychology or consent of instructor.

PSYC 505  Neurochemistry    credit: 3 hours.
The fundamentals of neurochemistry and topics of current interest; detailed study of chemical transmission, including metabolism, neuroanatomical distribution, pharmacology, and functions of neurotransmitters. Lecture-seminar. Same as MCB 505, and NEUR 505. Prerequisite: MCB 350, PSYC 210, or consent of instructor.

PSYC 509  Psych Scaling Multidimen Meth    credit: 4 hours.
Basic scaling theory; metric, non-metric, and individual differences multidimensional scaling models and methodology, emphasizing underlying assumptions and interpretation; and applications of scaling methods to measurement problems in social and personality psychology, perception, cognition, and sociology. Same as SOC 589. PSYC 506 is recommended but not required. Prerequisite: PSYC 407, SOC 587, or equivalent course in quantitative methods.

PSYC 510  Adv in Psychobiology    credit: 2 TO 4 hours.
Deals with the relevance of biological psychology to the subdisciplines of psychology; topics include current theory and treatment of psychosis, neuropsychology of movement disorders, human memory models and the brain, hormones and sexuality, biorhythms in
normal and abnormal behavior, physiology of sensing and perceiving, selective attention, and others. Same as NEUR 510. Consent of instructor is required for more than 2 hours. Prerequisite: PSYC 210 or consent of instructor.

PSYC 511  Adv Physiological Psych  credit: 2 hours.
Detailed examination of the physiological mechanisms in behavior; emphasis on research methodology and contemporary literature in the physiology of motivation, learning, perception, and emotion; and includes laboratory demonstrations and problems. Same as NEUR 511. Prerequisite: Twelve hours of psychology, including PSYC 411 or equivalent.

PSYC 514  Seminar in Cognitive Science  credit: 2 OR 4 hours.
In-depth view of cognitive science: the study of mind and intelligence. Covers major areas of cognitive science including: anthropology, artificial intelligence, cognitive neuroscience, cognitive psychology, emotions, linguistics, and philosophy. Lectures focus on prominent questions and issues in each area highlighted by descriptions of current research. Also explores interconnections among these fields. Same as ANTH 514, CS 549, EPSY 551, LING 570, and PHIL 514. Prerequisite: Minimally second semester graduate standing in a cognitive science discipline including: anthropology, computer science, educational psychology, electrical engineering, linguistics, philosophy, psychology, or consent of instructor.

PSYC 515  Neurotoxicology  credit: 3 hours.
Same as ENVS 514 and VB 514. See VB 514.

PSYC 516  Perception  credit: 4 hours.
Systematic study of methods and research findings in the field of human perception, together with an evaluation of theoretical interpretations. Prerequisite: Twelve hours of psychology.

PSYC 518  Exp Psych Human Learn  credit: 4 hours.
Data and theories of verbal learning; verbal mediators and their functions in learning and retention; transfer of training; short-term and long-term memory; and conceptualizations of the forgetting process. Prerequisite: Twelve hours of psychology or consent of instructor.

PSYC 521  Knowledge Representation  credit: 4 hours.
Surveys theories and data about the representation of knowledge by human beings; examines images, concepts, semantic features, propositions, semantic nets, rules, parallel distributed, procedural, schemas, mental models, and theories. Prerequisite: Background in either cognitive psychology, linguistics, or artificial intelligence.

PSYC 523  Prob Solving and Cog Skill Acq  credit: 4 hours.
Selected topics in how people solve problems and learn cognitive skills. A broad range of empirical findings will be discussed, along with psychological and computational accounts. Prerequisite: Consent of instructor.

PSYC 524  Dev Psycholinguistics  credit: 2 OR 4 hours.
Examination of empirical and theoretical literature on the acquisition of language; emphasis on universal patterns in the acquisition of a first language and on a consideration of explanations, both psychological and linguistic, for these patterns. Same as LING 524 and MDIA 524. Prerequisite: LING 425, PSYC 425 or PSYC 462, or consent of instructor.

PSYC 525  Psycholinguistics  credit: 2 OR 4 hours.
Critical survey of psychological research on language and communication; emphasis on psychological processes that allow humans to produce and understand speech, writing, and gesture. Same as LING 525 and MDIA 525. Prerequisite: Consent of instructor.

PSYC 526  Adv Psycholinguistics  credit: 2 OR 4 hours.
Overview of psychological research investigating the perceptual, cognitive, neuropsychological, and behavioral events that accompany speaking, reading, or listening to language. Examines adult language processing as well as the development of specific language skills and the nature of related language disorders. Same as EPSY 566. May be repeated in the same or separate terms to a maximum of 12 hours. Prerequisite: PSYC 525 or consent of instructor.

PSYC 527  Engineering Psychology  credit: 4 hours.
Experimental psychology applied to the study of man-machine systems; considers research issues, methodological matters, and principles of design and training in terms of contemporary aircraft, highway, industrial, and health-care systems. Same as AVI 527. Prerequisite: PSYC 358 or PSYC 456, or consent of instructor.

PSYC 529  Second Lang Acq & Bilingualism  credit: 4 hours.
Same as LING 529. See LING 529.

PSYC 530  Found of Ind Org Psych  credit: 4 hours.
Theoretical and empirical foundations of various content areas in industrial-organizational psychology; sample topics include employee selection and placement, training, human factors engineering, work motivation, employee attitudes, leadership, and organizational theory. Same as LIR 530. Prerequisite: Twelve hours of psychology or consent of instructor.
PSYC 531  Psych Measurement in Indus  credit: 4 hours.
Application of psychometric methods and the finding of differential psychology to the selection, classification, and performance evaluation of industrial personnel. Prerequisite: PSYC 407 or equivalent.

PSYC 532  Intro to Clin-Comm Psych III  credit: 4 hours.
Supervised practice in mental health delivery services; includes assessment and modification of problem behaviors in short-term treatment programs and beginning experience in school and community consultation; and emphasizes the development of skills in interviewing, conceptualization of problem behaviors, report writing, and effective staff interactions. Prerequisite: First-year graduate standing in clinical psychology and credit or concurrent registration in PSYC 530, and consent of instructor.

PSYC 533  Intern in Ind Org Psych  credit: 4 hours.
Supervised practice in organizational practice and research, implementation of programs, evaluation, feedback of survey results, applied assessments, assistance in EAP programs, and development of personnel guidelines; emphasizes applications of principles and procedures. Offered in special interest of graduate students in I/O psychology program. Prerequisite: Graduate standing in Psychology, credit or concurrent registration in PSYC 530, and consent of instructor.

PSYC 534  Models of Decision and Choice  credit: 4 hours.
Survey of mathematical and other formal models of human judgment and decision processes. Emphasizes differences between normative and descriptive models. Same as ACCY 595. Prerequisite: PSYC 407.

PSYC 538  Intro to Clin-Comm Psych I  credit: 4 hours.
Introduction to clinical psychology as a science and profession. Considers psychodynamic, behavioral, and community perspectives; emphasizes the conceptual foundations of each approach. Required of all entering graduate students in clinical psychology. Prerequisite: Consent of instructor required for all students not admitted to graduate program in clinical psychology.

PSYC 539  Intro to Clin-Comm Psych II  credit: 4 hours.
Considers critical issues in the assessment and study of psychological and social dysfunction, as manifested in adult psychopathology, childhood disorders, and community problems. Required of all entering graduate students in clinical psychology. Prerequisite: Credit or concurrent registration in PSYC 538; consent of instructor required for students not admitted to graduate program in clinical psychology.

PSYC 540  Social Development  credit: 4 hours.
Same as EPSY 530. See EPSY 530.

PSYC 541  Personality and Behav Dynamics  credit: 2 OR 4 hours.
Theory and research in personality, emphasizing personality as individual differences among persons and personality as attributed to persons by others; explores the measurement, antecedents, and consequences of such differences and attributions. Graduate credit is not allowed for both PSYC 350 and PSYC 541. Prerequisite: Twelve hours of psychology.

PSYC 545  Intro to Clin-Comm Psych IV  credit: 4 hours.
Critical survey of issues, principles, practice, and research related to modifying human behavior; covers psychotherapeutic and somatic approaches; symptomatic relief and personality-restructuring; goal-orientations; and individual family, group, milieu, and preventive community intervention. Prerequisite: Concurrent registration in PSYC 547 strongly recommended.

PSYC 546  Clin Psych Lab  credit: 2 TO 4 hours.
Intensive practice in techniques of clinical assessment and behavior modification with emphasis on recent innovations; small sections of the course formed according to the specialized interests of students and staff. Approved for S/U grading only. Prerequisite: PSYC 532 and PSYC 545, or consent of instructor.

PSYC 547  Internship  credit: 0 TO 16 hours.
Supervised field experience in clinical psychology. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

PSYC 551  Theory in Social Psychology  credit: 4 hours.
Overview of the major theoretical perspectives in experimental social psychology, including theories of attitudes, motivation, emotion, interpersonal and intergroup relations, and the self. Prerequisite: Consent of instructor.

PSYC 552  Soc Psych Theory and Meth II  credit: 4 hours.
Second of a two-course sequence for first-year graduate students in social psychology. Advanced theoretical and research approaches to a broad range of issues in social psychology; participation and seminar presentations by social psychology program faculty. Each student participates in seminar presentations and develops and conducts a research study in conjunction with one or more faculty members. Prerequisite: Consent of instructor.

PSYC 553  Founds of Organizational Behav  credit: 4 hours.
PSYC 554  **Classroom Learning**  credit: 4 hours.
Same as EPSY 552. See EPSY 552.

PSYC 557  **Org Psych Theory and Res**  credit: 4 hours.
Theory and research on the psychological processes involving the demands of organizations on the behavior of individuals; emphasis on the processes of power, authority, influence, leadership, communications, decision making, and organizational change. Prerequisite: Consent of instructor.

PSYC 558  **Attitudes**  credit: 4 hours.
Intensive analyses of recent developments in attitude theory and research; emphasis on the attitude-behavior relationship; and examination of theories of attitude and attitude change with respect to their utility in predicting and changing social behavior. Prerequisite: Consent of instructor.

PSYC 559  **Small Groups**  credit: 4 hours.
Intensive examination of current research and theory on structure, process, and performance of groups; critical examination of recent research and theoretical literature; and development of research designs for related issues in the field. Prerequisite: Consent of instructor.

PSYC 560  **Motiv and Person Dev in Child**  credit: 4 hours.
Theory, method, and research on the interaction of motivational, personality, and learning processes and development in children; emphasis on experimental studies and a social learning theory approach. Class projects involve some laboratory work with children. Prerequisite: Twelve hours of psychology; consent of instructor.

PSYC 563  **Clin Psych and Pers Res Meth**  credit: 4 hours.
The logical analysis of clinical inferences and their role in research; problems and methods in the investigation of the development, dynamics, and structure of personality; and research in psychotherapy. Prerequisite: PSYC 406.

PSYC 567  **Personality Assessment**  credit: 4 hours.
Methods and theory in the quantitative assessment of personality; review of research findings and trends. Prerequisite: PSYC 407 or equivalent.

PSYC 569  **Cognitive Development**  credit: 4 hours.
Intensive examination of current research on infant cognition. Topics include: object segregation, object permanence, physical reasoning, object individuation, number, and psychological reasoning. Prerequisite: Consent of instructor.

PSYC 570  **Prin and Meth of Tchg Psych**  credit: 0 TO 4 hours.
Designed for graduate students in psychology; areas considered include developing course objectives and content; developing and presenting teaching-learning situations; evaluating the attainment of course objectives; advising and counseling students; ethics in teaching; and research problems on the teaching of psychology. Approved for both letter and S/U grading. Prerequisite: Second-year graduate standing in psychology or consent of instructor.

PSYC 581  **Applied Regression Analysis**  credit: 4 hours.
Same as EPSY 581. See EPSY 581.

PSYC 585  **Sampling Hum Popul and Soc Org**  credit: 4 hours.
Same as BADM 535 and SOC 577. See BADM 535.

PSYC 587  **Hierarchical Linear Models**  credit: 4 hours.
Same as STAT 587 and EPSY 587. See EPSY 587.

PSYC 588  **Covar Struct and Factor Models**  credit: 4 hours.
Introduction to covariance structure models, linear structural equations, and factor analysis; identification and parameter estimation problems; assessing goodness-of-fit; use of up-to-date computer software implementing current estimation methods; applications to a wide variety of social and behavioral science modeling problems. Same as EPSY 588, SOC 588, and STAT 588. Prerequisite: PSYC 594, STAT 571, or SOC 587.

PSYC 589  **Categorical Data in Ed/Psyc**  credit: 4 hours.
Same as EPSY 589 and SOC 579. See EPSY 589.

PSYC 590  **Individual Research**  credit: 0 TO 16 hours.
For graduate students who wish to conduct research on special problems not included in graduate theses. Approved for S/U grading only. Prerequisite: Consent of instructor.

**PSYC 593  Seminar**  credit: 0 TO 4 hours.
Discussion of current topics in their historical setting, with special emphasis on research problems. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

**PSYC 594  Multivar Anlys in Psych and Ed**  credit: 4 hours.
Examines the principal methods of descriptive and inferential statistics used in the analysis of multiple measurements, emphasizing linear transformations, multiple regression, principal components, multivariate analysis of variance, canonical correlation and variates, discriminant functions and variates, and conventional procedures of factor analysis; involves both theory and applications. Same as EPSY 584 and SOC 584. Prerequisite: PSYC 407 or EPSY 581 or EPSY 582 or consent of instructor.

**PSYC 595  Theories of Measurement I**  credit: 4 hours.
Same as EPSY 585. See EPSY 585.

**PSYC 599  Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
Russian, East European and Eurasian Studies

Russian, East European, and Eurasian Center
Director of Center: Richard Tempest
Center Office: 104 International Studies Building, 910 South Fifth Street, Champaign
Phone: 333-1244
www.reec.uiuc.edu

REES 200  Intro to Russia and Eurasia  credit: 3 hours.
Survey of the societies and states formerly constituted as the Soviet Union. Interdisciplinary and team-taught. Combines lectures, discussions, and films covering the history, political science, economics, sociology, and culture of the area.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

REES 201  Introduction to Eastern Europe  credit: 3 hours.
Survey of the societies and states of the eastern European region. Interdisciplinary and team-taught. Combines lectures, discussions, and films covering the history, politics, economics, sociology and culture of the area.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

REES 390  Individual Study or Research  credit: 3 hours.
Directed reading or research on selected topics. May be repeated to a maximum of 6 hours. Prerequisite: Consent of instructor supervising the work.

REES 477  Post-Communist Fiction  credit: 3 OR 4 hours.
Same as SLAV 477 and CWL 477. See SLAV 477.

REES 493  Honors Senior Thesis  credit: 3 hours.
Undergraduate honors thesis. 3 undergraduate hours. No graduate credit. May be repeated to a maximum of 6 hours. Prerequisite: REES major with senior standing and 3.5 grade-point average; consent of instructor supervising the work and the REEEC director.

REES 495  Senior Seminar  credit: 3 hours.
Interdisciplinary seminar normally taken in the senior year. Involving faculty in a number of disciplines, this course approaches understanding Russia, Eastern Europe, and Eurasia and the methodologies of its study through questions of identities, cultural values, and change. Taught in conjunction with REES 550. 3 undergraduate hours. No graduate credit. Prerequisite: Declared major in Russian, East European, and Eurasian Studies or consent of instructor; junior or senior standing.

REES 496  Topics in REEE Studies  credit: 3 hours.
Topics in the interdisciplinary study of Russia, Eastern Europe, and Eurasia. 3 undergraduate hours. May be repeated to a maximum of 9 undergraduate hours.

REES 550  Seminar in REEE Studies  credit: 4 hours.
Interdisciplinary seminar involving faculty in a number of disciplines. The course examines Russia, Eastern Europe, and Eurasia and the methodologies of its study through questions of identities, cultural values, and change.

REES 590  Individual Study or Research  credit: 1 TO 8 hours.
Directed reading or research on selected topics for graduate students. May be repeated in the same or separate terms to a maximum of 8 graduate hours. Prerequisite: Consent of instructor supervising the work.

REES 596  Topics in REEE Studies  credit: 4 hours.
Topics in the interdisciplinary study of Russia, Eastern Europe, and Eurasia. May be repeated to a maximum of 12 graduate hours.

REES 599  Thesis Research  credit: 0 TO 8 hours.
Designed to meet the thesis requirement for the M.A. in Russian, East European, and Eurasian Studies; taken under supervision of a faculty member in the Russian, East European, and Eurasian Center. May be repeated to a maximum of 8 hours. Approved for S/U grading only. Prerequisite: Enrollment in the M.A. program in REEES and consent of the Director of the Russian, East European, and Eurasian Center.
REHB 199  Undergraduate Open Seminar  credit: 1 TO 4 hours.
May be repeated to a maximum of 8 hours.

REHB 206  Exploring Disabilities I  credit: 3 hours.
Introduction to identifying the individual needs of persons with disabilities, recognizing the variance of disabilities, and administering activities of daily living.

REHB 207  Exploring Disabilities II  credit: 3 hours.
Experience in identifying the individual needs of persons with disabilities, recognizing the variance of disabilities, and administering the activities of daily living; a continuation of REHB 206, augmented by a paper. Prerequisite: REHB 206 or consent of instructor.

REHB 314  Introduction to Aging  credit: 3 hours.
Same as CHLH 314, HDFS 314, RST 314, and PSYC 314. See CHLH 314.

REHB 322  Intro to Mental Retardation  credit: 3 hours.
Same as PSYC 322, SOCW 422, and SPED 322. See SPED 322.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

REHB 330  Disability in American Society  credit: 3 hours.
Presents a range of issues pertaining to disability including demographics, disability rights, services, policies and current issues. Applies a disability studies perspective in which problems associated with individuals’ impairments are seen to result from socially imposed barriers. Same as CHLH 330.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

REHB 401  Introduction to Rehabilitation  credit: 4 hours.
Orientation to general field of rehabilitation; includes foundations, resources, assessment, counseling, and placement.

REHB 402  Medical Aspects of Disability  credit: 4 hours.
Examination of the scope of physical, mental and cognitive disabilities, their causes, complications, and treatment.

REHB 403  Independent Living  credit: 2 hours.
Focuses on the concept of independent living, its medical aspects, and application to elimination of physical and social barriers to persons with disabilities. Prerequisite: REHB 401 or consent of instructor.

REHB 407  Disability, Culture & Society  credit: 3 OR 4 hours.
Same as ANTH 404, CHLH 407, and KIN 407. See CHLH 407.

REHB 435  Job Placement Techniques  credit: 2 hours.
Examines theories of job placement, job seeking skills, and techniques for outreach with employees. Focuses on a systems approach to job placement for persons with disabilities. Topics include supported employment, labor market trends, and job restructuring. Lab time with disabled clients who are active in the job search process is required.

REHB 440  Sensory Impairments  credit: 4 hours.
Introduces sensory impairments (i.e., vision, hearing, and learning disabilities) from a rehabilitation perspective.

REHB 444  Adaptive Technologies  credit: 4 hours.
Introduction and orientation to available adaptive technologies, their applications to various disability groups, and current research and field testing. Prerequisite: REHB 401; REHB 402, or consent of instructor.

REHB 501  Rehabilitation Research  credit: 4 hours.
Methods and techniques of conducting and evaluating rehabilitation research; experimental and survey designs and procedures; data collection and current directions of rehabilitation research. Prerequisite: REHB 401, EPSY 480, and consent of instructor.

REHB 520  Psycho-Social Aspects  credit: 4 hours.
Study of the social and emotional adjustment of individuals with disabilities; evaluation of effects imposed by societal attitudes; analysis of the implications for rehabilitation professionals in dealing with individuals who have a disability; review of relevant research. Same as SPED 520.

REHB 521  Rehabilitation Administration  credit: 4 hours.
Overview of rehabilitation management in the public and private sectors; emphasis on service delivery and the interface of administration, supervision, and service delivery to all persons with disabilities; coverage of construct areas such as the state/federal System of Vocational Rehabilitation Education, and private sector facilities; emphasis on the organizational role and administrative practices, management, supervision, and other relevant areas of leadership development and modeling. Prerequisite: REHB 401, SPED 510, or consent of instructor.

REHB 536  Vocational Evaluation  credit: 4 hours.
Theory and practice of vocational evaluation techniques for persons with disabilities. Reviews basic psychometric instruments and adds practical experience with work samples and computer-based testing. Includes hands-on experience in the evaluation of disabled clients. Prerequisite: REHB 401 or one basic course in testing.

REHB 537  Neuropsychological Testing  credit: 4 hours.
Use by rehabilitation counselors of neuropsychological test batteries and other related tests; emphasis on understanding test reports and useful applications for neuropsychological testing in terms of rehabilitation clients. Prerequisite: REHB 401; consent of instructor.

REHB 545  Transition and Voc Planning  credit: 3 hours.
Same as SPED 545. See SPED 545.

REHB 583  Counseling Internship  credit: 4 hours.
Development of individual counseling skills in a rehabilitation setting; emphasis on vocational evaluation and placement skills as developed in case management and planning experiences as well as adjustment to disability, vocational choice, and job placement techniques. May be repeated to a maximum of 8 hours. Prerequisite: REHB 401, REHB 520, REHB 536, and consent of instructor.

REHB 585  Rehabilitation Practicum  credit: 4 hours.
Practical experience in a major area of rehabilitation; discussion/laboratory sections cover such practicum topics related to administration, counseling, or supported employment and other rehabilitation services. Prerequisite: REHB 301 and consent of instructor.

REHB 591  Seminar in Rehabilitation  credit: 2 hours.
Interdisciplinary seminar on topics of current interest. Students, faculty, and visiting lecturers present seminars based on their study, research or professional activities in the selected rehabilitation topic area. May be repeated to a maximum of 4 hours. Prerequisite: Consent of instructor.

REHB 593  Special Problems  credit: 2 hours.
Independent research on special projects. Open only to majors. May be repeated to a maximum of 8 hours. Prerequisite: REHB 401; consent of instructor.

REHB 594  Special Topics  credit: 2 TO 4 hours.
Lecture course on topics of current interest; specific subject matter announced in Schedule. May be repeated to a maximum of 8 hours. Prerequisite: Will be determined for each topic and will be indicated in Schedule; REHB 401; consent of instructor.

REHB 599  Thesis Research  credit: 0 TO 8 hours.
Preparation of thesis in rehabilitation. May be repeated to a maximum of 8 hours. Approved for S/U grading only. Prerequisite: Satisfactory standing in the master's program.
RHET 100  **Rhetoric Tutorial**  credit: 1 hours.

Tutoring in writing skills to be scheduled by individual tutors. Open only to students placed in and registered for RHET 101 or RHET 102. May be repeated to a maximum of 2 hours. Approved for S/U grading only. Prerequisite: Concurrent registration in RHET 101 or RHET 102.

Must enroll concurrently in RHET 101, and RHET 102.

**RHET 101  College Writing I**  credit: 3 hours.

Instruction in structuring argumentative essays: concentrates on creating problem statements, making points, and providing evidence in academic essays. This course is the first term of a two-term sequence (RHET 101/100 - RHET 102/100) that fulfills the campus Composition I general education requirement. Credit is not given for both RHET 101 and RHET 103. Prerequisite: Concurrent registration in RHET 100; placement in RHET 101.

Must enroll concurrently in RHET 100.

This course satisfies the General Education Criteria for a:

UIUC: Freshman Composition I

**RHET 102  College Writing II**  credit: 3 hours.

Continued instruction in structuring argumentative essays: concentrates on evidence, claims, warrants, issues, discussion, and elements of style. Second term of a two-term sequence (RHET 101/100 - RHET 102/100) that fulfills the campus Composition I general education requirement. Credit is not given for both RHET 102 and either RHET 104 or RHET 105. Prerequisite: RHET 101; concurrent registration in RHET 100.

Must enroll concurrently in RHET 100.

This course satisfies the General Education Criteria for a:

UIUC: Freshman Composition I

**RHET 103  College Composition I**  credit: 3 hours.

Instruction in structuring argumentative essays: concentrates on creating problem statements, making points, and providing evidence in academic essays. This is the first term of a two-term sequence (RHET 103 - RHET 104) that satisfies the campus Composition I general education requirement. Credit is not given for both RHET 103 and RHET 101. Prerequisite: Placement in RHET 103.

This course satisfies the General Education Criteria for a:

UIUC: Freshman Composition I

**RHET 104  College Composition II**  credit: 3 hours.

Continued instruction in structuring argumentative essays: concentrates on evidence, claims, warrants, issues, discussion, and elements of style. This is the second term of a two-term sequence (RHET 103 - RHET 104) that satisfies the campus Composition I general education requirement. Credit is not given for both RHET 104 and either RHET 102 or RHET 105. Prerequisite: RHET 103.

This course satisfies the General Education Criteria for a:

UIUC: Freshman Composition I

**RHET 105  Principles of Composition**  credit: 4 hours.

Study of the methods of exposition, the problems of argument, the use of evidence, and style; practice in expository writing. This course fulfills the Campus Composition I general education requirement. Credit is not given for both RHET 105 and either RHET 108 or SPCM 111 and SPCM 112.

This course satisfies the General Education Criteria for a:

UIUC: Freshman Composition I

**RHET 108  Forms of Composition**  credit: 4 hours.
Study of the methods of exposition, the problems of argument, the use of evidence, and style; practice in expository writing. This course fulfills the Campus Composition I general education requirement. Students with credit in RHET 108 may not receive additional credit for RHET 105 or SPCM 111 and SPCM 112.

This course satisfies the General Education Criteria for a:
UIUC: Freshman Composition I

**RHET 199 Undergraduate Open Seminar** credit: 1 TO 5 hours.
May be repeated.

**RHET 233 Principles of Composition** credit: 3 hours.
Intermediate level. Practice in exposition, with emphasis on organization, paragraphing, and sentence structure. For the student whose career will require competence in writing clear, precise prose as an adjunct to another professional activity. Credit is not given for both RHET 233 and RHET 243. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

**RHET 243 Inter Expository Writing** credit: 3 hours.
Practice in expository types, with emphasis on style and critical analysis. Recommended for rhetoric majors. Credit is not given for RHET 243 and RHET 233. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition
Religious Studies

Religion
Head of Department: Robert McKim
Department Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-0473
www.relst.uiuc.edu

RLST 101  Bible as Literature  credit: 3 hours.
Themes and literary genres in the Bible, emphasizing content important in Western culture. Same as CWL 111 and ENGL 114.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

RLST 104  Asian Mythology  credit: 3 hours.
Introductory survey of the mythologies of India, China, and Japan. Same as ASST 104.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

RLST 106  Archaeology and the Bible  credit: 3 hours.
Examination of archaeological evidence, especially from Syria-Palestine, and discussion of its use in the interpretation of Biblical literature.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Advanced Composition

RLST 108  Religion & Society in West I  credit: 3 hours.
Introduction to classic writers and texts in Western religious and social thought from antiquity to the Enlightenment, with emphasis on their social and historical contexts. Same as ANTH 108, PHIL 108, and SOC 108.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

RLST 109  Religion & Society in West II  credit: 3 hours.
Introduction to classic writers and texts in Western religious and social thought from the Enlightenment to the present, with emphasis on their social and historical contexts. Same as ANTH 109, PHIL 109, and SOC 109.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

RLST 110  World Religions  credit: 3 hours.
Survey of the leading living religions, including Hinduism, Buddhism, Confucianism, Taoism, Judaism, Christianity, and Islam; examination of basic texts and of philosophic theological elaborations of each religion. Same as PHIL 110. This course can be used to fulfill either Western or Nonwestern general education categories, but not both.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

RLST 111  Elementary Greek I  credit: 4 hours.
Same as GRK 101. See GRK 101.

RLST 112  Elementary Greek II  credit: 4 hours.
Same as GRK 102. See GRK 102.

RLST 115  Language and Culture in India  credit: 3 hours.
Same as LING 115. See LING 115.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

RLST 116  Faith & Self in Global Context  credit: 3 hours.
Whether in fourth-century North African, tenth-century Japan, fourteenth-century Spain, or twentieth-century America, men and women have wrestled with the question of who they are and how they are to relate to the world. Through autobiographic writings, by reading the words of women and men attempting to make sense of the world and their place in it, we hope to focus attention on the personal dimensions of faith and of cross cultural contact at the same time that we provide an introduction to the worlds' major religions.

This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

RLST 120  A History of Judaism  credit: 3 hours.
Examines the social, political, economic, and intellectual history of the Jews from Abraham to the present-day, with particular attention to Jewish thought and society. Same as HIST 168.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Advanced Composition

RLST 121  Introduction to Christianity  credit: 3 hours.
Typological and historical approaches to major forms of Christianity: Eastern Orthodoxy, Catholicism, and Protestantism.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

RLST 122  History East Asian Religions  credit: 3 hours.
Introduction to East Asian religious traditions; emphasizes the ideas of Confucianism, Taoism, and Buddhism in China and their historical interactions. Same as EALC 122.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

RLST 127  Introduction to Catholicism  credit: 3 hours.
Introduction to the academic study of Catholicism in its historical, philosophical and religious dimensions with an emphasis on its historical diversity.

RLST 130  Jewish Customs and Ceremonies  credit: 3 hours.
The major festivals and life-cycle rituals of Judaism; focuses on sacred time, interaction of external and internal factors producing change and conservatism, relationship of ritual and theology, and the thematic development inherent in the rituals.

RLST 132  Zen  credit: 3 hours.
Introduces the history, teachings, and practice of Zen Buddhism in China and Japan. Same as EALC 132.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

RLST 140  Native Religious Traditions  credit: 3 hours.
Same as AIS 140. See AIS 140.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

RLST 160  Ancient Greek & Roman Religion  credit: 3 hours.
Same as CLCV 160. See CLCV 160.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

RLST 191  Freshman Honors Tutorial  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars and Associates. May be repeated one time. Prerequisite: Consent of departmental honors advisor.
RLST 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

RLST 200  **Classical & Koine Greek I**  credit: 4 hours.
Same as GRK 201. See GRK 201.

RLST 201  **Hebrew Bible in English**  credit: 3 hours.
Analyzes the critical issues in the interpretation of the literature of the Hebrew Bible/Old Testament; surveys the history and religion of Ancient Israel with special reference to Israel's setting in the ancient Near East. Prerequisite: Sophomore standing or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

RLST 202  **New Testament in English**  credit: 3 hours.
Analyzes the literature of the New Testament in its social and religious setting, with special reference to the ministry and teaching of Jesus, the emergence of the church as a sect within ancient Judaism, and the development of Christian institutions in the Graeco-Roman world. Prerequisite: Sophomore standing or consent of instructor.

RLST 203  **History of the Bible**  credit: 3 hours.
Broad historical survey of the formation and impact of Christian and Jewish Bibles through the centuries. Designed to give students an academic setting for investigating the complex (and ongoing) history of the Bible. Two guiding questions will be: How have historical developments informed different versions of the Bible: How have versions of the Bible informed cultural and political developments? Same as HIST 291.

RLST 204  **Classical & Koine Greek II**  credit: 4 hours.
Same as GRK 202. See GRK 202.

RLST 205  **Intensive Biblical Hebrew**  credit: 5 hours.
Same as HEBR 205. See HEBR 205.

RLST 213  **Intro to Islam - ACP**  credit: 4 hours.
Course is identical to RLST 214 except for the additional writing component. See RLST 214. Credit is not given for both RLST 213 and RLST 214. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect
UIUC: Advanced Composition

RLST 214  **Introduction to Islam**  credit: 3 hours.
History of Islamic thought from the time of Muhammad to the present, including the prophethood of Muhammad, the Qur’an, theology and law, mysticism and philosophy, sectarian movements, modernism and legal reform, and contemporary resurgence. Credit is not given for both RLST 213 and RLST 214.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

RLST 220  **Jewish Storytelling**  credit: 3 hours.
Same as CWL 221, ENGL 223, and YDSH 220. See YDSH 220.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

RLST 221  **American Judaism**  credit: 3 hours.
Forms of Judaism in America: Reform, Conservative, Reconstructionist, Orthodox, and Hasidic Judaism; the American rabbi; Zionism in America; American Jewish communal life; national Jewish organizations; the American synagogue; and the secular Jew. Prerequisite: Completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

RLST 223  **Qur'an Structure and Exegesis**  credit: 3 hours.
Introduction to the Qur'an (Koran), the holy scripture of Islam, examining its major doctrines, thematic development, literary style, and its relationship to pre-Qur'anic, especially Biblical, traditions. Special attention is given to various methods Muslims have used to interpret the Qur'an. Same as CWL 223. Prerequisite: RLST 213 or RLST 214.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

RLST 224 Chinese Thght Confucius to Mao credit: 3 hours.
Same as EALC 222, and HIST 222. See HIST 222.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

RLST 227 US Catholic Experience credit: 3 hours.
Studies the unique and sometimes problematic roles played by U.S. Catholics in the history and contemporary experience of U.S. culture emphasizing the problem of difference and acceptance that has characterized the Catholic Church in the United States.

RLST 229 Religion and Society credit: 3 hours.
Same as SOC 229. See SOC 229.

RLST 230 Philosophy of Religion Intro credit: 3 hours.
Same as PHIL 230. See PHIL 230.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

RLST 232 Ancient Greek Sanctuaries credit: 3 hours.
Same as ARTH 218, and CLCV 232. See CLCV 232.

RLST 235 History of Religion in America credit: 3 hours.
Examines the religious history of the lands that have become the United States and the people who have become known as Americans through texts written by and about people of all races and creeds. From the precontact era through the twentieth century, this course emphasizes the diversity of American religion, the discord caused by and present in American religion, and the many instances of dialogue that have been a part of America's religious history. Same as HIST 289.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

RLST 236 Religion, Violence & America credit: 3 hours.
Examination of the interactions among religion, violence, and American culture from the colonial period to the twenty-first century. Using a wide range of primary and secondary texts, students will study the perspectives of the perpetrators and victims of religiously motivated and/or religiously justified violence, both in domestic and international affairs. Same as HIST 290.

This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

RLST 242 Holocaust Religious Response credit: 3 hours.
The theoretical foundation for ideas of national and racial superiority which attended the holocaust and responses to this phenomenon by major Jewish and Christian thinkers, including Rubenstein, Buber, Fackenheim, Berkowits, Reuther, and Wiesel.

RLST 251 Viking Mythology credit: 3 hours.
Same as CWL 251, MDVL 251, and SCAN 251. See SCAN 251.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

RLST 258 Muslims in America credit: 3 hours.
Same as AAS 258 and LLS 258. See AAS 258.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

RLST 260 Mystic and Saints in Islam credit: 3 hours.
Examines mystical concepts and practices in Islam through the ages, through the lives and writings of important mystics and Sufi holy men and women, as well as the integration of mysticism and the Sufi Orders into Muslim society and Islamic orthodoxy. No knowledge of Islam or foreign language is required.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

**RLST 266  Christian Social Movements**  credit: 3 hours.
Examines the emergence and development of social Christianity. Surveying a variety of Christian traditions, it analyzes their responses to the Industrial Revolution. It then examines how these frameworks respond and develop solutions to current social problems.

**RLST 268  Jewish History to 1700**  credit: 3 hours.
Same as HIST 268. See HIST 268.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

**RLST 269  Jewish History Since 1700**  credit: 3 hours.
Same as HIST 269. See HIST 269.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

**RLST 275  The World of Jewish Sepharad**  credit: 3 hours.
Same as ANTh 275 and HIST 267. See ANTH 275.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

**RLST 283  Jewish Sacred Literature**  credit: 3 hours.
Literary study of the major post-biblical sacred texts of Judaism; includes readings in translation from Mishnah, Tosefta, Talmudim, midrashim, piyyutim, and mystical treatises. Emphasizes nature, history, function, and development of literary patterns and forms and the relationships between form and content in these texts. Same as CWL 283, and ENGL 283.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**RLST 284  Modern Jewish Literature**  credit: 3 hours.
Same as CWL 284 and ENGL 284. See ENGL 284.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**RLST 286  Introduction to Hinduism**  credit: 3 hours.
Elements of Hindu thought and practice; selected topics presented in historical order and in the context of Indian cultural history (including the present).

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

**RLST 287  Introduction to Buddhism**  credit: 3 hours.
Thematic approach to the history of Buddhism from its origin in India to its spread throughout China and Japan; explores how the doctrinal and social development of Buddhism in East Asia is related to the process of cultural adaptation. Same as EALC 287.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

**RLST 291  Hinduism in the United States**  credit: 3 hours.
Same as AAS 291. See AAS 291.
RLST 320  Lit Responses to the Holocaust  credit: 3 hours.
Same as CWL 320, ENGL 359, and YDSH 320. See YDSH 320.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

RLST 341  Native People and Christianity  credit: 3 hours.
An interdisciplinary survey of the native religious experience, focusing on the native encounter with Christianity. Charts the cultural context for native religious history and explores native religious diversity in the contemporary period, particularly the relationship between tribal and Christian traditions in reservation and urban communities. Class discussions address the broader theoretical and practical questions raised by the intersections of religion, culture, and politics in a diverse and conflicted world, and are supplemented by audiovisual materials and guest speakers. Prerequisite: Sophomore standing or consent of instructor.

RLST 345  Medieval Civilization  credit: 3 hours.
Same as HIST 345, and MDVL 345. See HIST 345.

RLST 346  The Age of the Renaissance  credit: 3 hours.
Same as HIST 346 and MDVL 346. See HIST 346.

RLST 347  Protestant & Catholic Refs  credit: 3 hours.
Same as HIST 347. See HIST 347.

RLST 368  Religious & Messianic Mvmnts  credit: 3 hours.
Same as HIST 302. See HIST 302.

RLST 369  Spirituality and Experience  credit: 3 hours.
Same as ARTH 369, CWL 369, HIST 344, and MDVL 369. See ARTH 369.

RLST 385  The Ethics of War and Peace  credit: 3 hours.
Same as GLBL 385, and PHIL 385. See PHIL 385.

RLST 390  Independent Study  credit: 2 TO 6 hours.
Special topics not treated in regularly scheduled courses; designed primarily for upperclassmen. May be repeated. Prerequisite: Evidence of adequate preparation for such study; consent of staff member supervising the work.

RLST 403  Women in Muslim Societies  credit: 3 OR 4 hours.
Examination of gender ideologies and social realities affecting the lives of women in various Muslim countries. Same as ANTH 403, GLBL 403, GWS 403, and HIST 434. 3 undergraduate hours. 4 graduate hours. Prerequisite: A course in Islam or the Middle East, or consent of instructor.

RLST 408  Islam and Modern Society  credit: 3 OR 4 hours.
Examines the role of Islam in contemporary politics, the contemporary resurgence of Islam, and the articulation of Islamic approaches to the new economic order, nationalism, and the changing role of women. Same as PS 408. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

RLST 409  Transnational Islam, Europe-US  credit: 3 OR 4 hours.
Same as ANTH 402 and ASST 402. See ANTH 402.

RLST 410  Islam in Egypt  credit: 3 OR 4 hours.
A study abroad course in Egypt, to acquaint students with the rich diversity of Islamic religious life and interpretation in Egypt today. Students learn about Egyptian history and culture, visit Cairo’s major Islamic monuments, witness Sufi rituals and popular celebrations, visit Islamic charitable organizations, and meet a wide variety of Egyptians, including scholars, religious teachers, students, and social activists of various types and persuasions. 3 undergraduate hours. 4 graduate hours. Prerequisite: Previous coursework in Islam or the Middle East, or consent of instructor.

RLST 412  Readings in Sanskrit I  credit: 3 OR 4 hours.
Same as SNSK 403. See SNSK 403.

RLST 413  Readings in Sanskrit II  credit: 3 OR 4 hours.
Same as SNSK 404. See SNSK 404.

RLST 415  Intro Readings of the Talmud  credit: 3 hours.
Introduces students to the rhetoric, vocabulary, grammar, and argumentation of the Babylonian Talmud. The students will read, translate, and analyze portions of the Babylonian Talmud daily in class. May be repeated to a maximum of 6 hours. Prerequisite: Advanced knowledge of Hebrew, especially Hebrew grammar, and the consent of the instructor.

RLST 416  Readings in Rabbinic Midrash  credit: 3 hours.
Introduces students to the rhetoric, vocabulary, grammar, and argumentation of the Rabbinic Midrashic Collections, especially Mekhilta, Sifre Deuteronomy, and Bereshit Rabbah. The students will read, translate, and analyze portions of these collections daily in class. May be repeated to a maximum of 6 hours. Prerequisite: Advanced knowledge of Hebrew, especially Hebrew grammar, and the consent of the instructor.

RLST 420  Jewish Life-Writing  credit: 3 OR 4 hours.
Same as CWL 421, HIST 436, SLAV 420, and YDSH 420. See YDSH 420.

RLST 424  Philosophy of Religion  credit: 3 OR 4 hours.
Same as PHIL 424. See PHIL 424.

RLST 429  Language of Religion  credit: 3 OR 4 hours.
Introduction to the study of the language of religion; topics include: theoretical and empirical issues related to the field, methodology for the study of language of religion, analysis of religious texts, critical evaluation of the philosophical, theological, and linguistic perspectives on the nature and function of the language of religion, and analysis of diverse forms and styles of the language of religion. Same as LING 429. 3 undergraduate hours. 4 graduate hours.

RLST 434  History of Jews in Diaspora  credit: 3 OR 4 hours.
Same as HIST 433. See HIST 433.

RLST 435  Revivalism and Evangelicalism  credit: 3 OR 4 hours.
Examination of the history of revivalistic and evangelical Christianities in North America from the colonial period to the twenty-first century. A combination of primary texts and scholarly studies will focus on religious, social, and political legacies, and the current shape of evangelical Christianity in America. Same as HIST 486. 3 undergraduate hours. 4 graduate hours.

RLST 436  Religion in America: 1900-1941  credit: 3 OR 4 hours.
An exploration of the religious lives and thoughts of Americans in the first four decades of the twentieth century and the many overlapping issues confronting American society and American religion during that time. Focuses on four themes: debates over the meaning of modernity, understandings of the relationship between religion and society, the gendering of faith, and the relationship between religion and American identity. 3 undergraduate hours. 4 graduate hours. Prerequisite: RLST 235 or RLST 236.

RLST 440  Early Christian Thought  credit: 3 OR 4 hours.
Study of major developments in early Christian thought (first four centuries) through discussion of primary texts in translation. Same as MDVL 440. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: RLST 121 or RLST 202, or consent of instructor.

RLST 442  History of Early Judaism  credit: 3 hours.
The history of Judaism from Ezra to the rise of Islam: Hellenism and Judaism, varieties of Judaism, Palestinian Judaism and its documents, Babylonian Judaism, the rabbis, and popular Jewish culture. Same as HIST 432. Prerequisite: Credit in one course in religious studies at the 200-, 300-, or 400-level, or consent of instructor.

RLST 443  Ancient Near Eastern Cultures  credit: 3 hours.
Examines the literature and religious practice of the great civilizations of the Near East, particularly the Sumerian, Assyro-Babylonian, Egyptian, Canaanite and Hittite cultures. Prerequisite: RLST 201 or equivalent.

RLST 447  Modern Catholic Thought  credit: 3 OR 4 hours.
Traces the history of Catholicism in its interaction with the modern world from the sixteenth century to the present, concentrating on the uneasy relationships that Catholicism has sustained with the modern world. 3 undergraduate hours. 4 graduate hours. Prerequisite: RLST 127 or consent of instructor.

RLST 450  Theories of Religion  credit: 3 OR 4 hours.
A survey of important theories and methods in the study of religion since the Enlightenment in fields including history, philosophy, philology, anthropology, psychology, and sociology, including works by leading theorists such as Hume, Marx, Weber, Durkheim, James, Freud, Ricoeur, Jung and Eliade. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: For undergraduate students, RLST 110 and RLST 230, or consent of instructor. No prerequisite for graduate students.

RLST 458  Christians and Jews 1099-1789  credit: 3 OR 4 hours.
Examines the complex relations between Christians and Jews in Europe from the high Middle Ages through the Enlightenment. Among our topics are the religious and social roots of medieval persecutions of Jews; the history of Jewish banishments; construction of
myths to foment hostilities; Renaissance humanism (especially the Christian absorption of Jewish scholarship); the impact of the
Christian reform movements, both Protestant and Catholic, on the status of Jews; mercantilism and the re-admission of Jews; and the
emergence of a discourse of religious tolerance in the Enlightenment. Same as HIST 458. 3 undergraduate hours. 4 graduate hours.

RLST 463  Religion and Society  credit: 4 hours.
Same as ANTH 463. See ANTH 463.

RLST 464  Modern Japanese Drama  credit: 3 OR 4 hours.
Same as CWL 462, EALC 464, and THEA 487. See EALC 464.

RLST 468  Religions of Africa  credit: 3 OR 4 hours.
Same as ANTH 468. See ANTH 468.

RLST 478  US Intel & Cultr Hist to 1865  credit: 2 TO 4 hours.
Same as HIST 479. See HIST 479.

RLST 479  US Intel Cultr Hist from 1859  credit: 2 TO 4 hours.
Same as HIST 481. See HIST 481.

RLST 481  Muslim Ethics in Global Age  credit: 3 OR 4 hours.
Exploration of contemporary, often revisionist Muslim ideas on a broad range of ethical issues that face societies today, such as human
rights, democracy, gender equality, just war, pluralism, and bioethics. 3 undergraduate hours. 4 graduate hours. Prerequisite: Previous
coursework on Islam or the Middle East.

RLST 482  Muslim-Christian Interactions  credit: 3 OR 4 hours.
Explores the complexity of Muslim-Christian interactions since early Islam, including theological and philosophical exchanges, debates,
polemics, interfaith dialogue, perceptions of each other, Muslim minorities in the West, and Christian minorities in the Muslim world, and
the relationship of religion to culture. 3 undergraduate hours. 4 graduate hours.

RLST 484  Buddhist Meditation  credit: 3 hours.
Examines classical systems of Buddhist meditation and their relation to Buddhist psychology and world view. Same as EALC 484.
Prerequisite: RLST 287, or consent of instructor.

RLST 485  Drama in Premodern Japan  credit: 3 OR 4 hours.
Same as CWL 470, EALC 463, and THEA 486. See EALC 463.

RLST 488  History of Chinese Buddhism  credit: 3 OR 4 hours.
Same as EALC 488. See EALC 488.

RLST 493  Honors Senior Thesis  credit: 3 hours.
Two-term research project. 3 undergraduate hours. No graduate credit. Must be taken for two terms for a total of 6 undergraduate
hours. Prerequisite: Senior majors in religious studies who are eligible for graduating with distinction from the program.

RLST 494  Topics in Religious Thought  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours.

RLST 495  Topics in Asian Religions  credit: 3 OR 4 hours.
Topics in Hinduism, Buddhism, Taoism, and other Asian religious traditions. Same as EALC 495. 3 undergraduate hours. 4 graduate
hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours as topics vary. Prerequisite: Sophomore standing
or consent of instructor.

RLST 496  Topics in History of Judaism  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours.

RLST 498  Topics in Biblical Studies  credit: 3 OR 4 hours.
Detailed interpretation of selected books of the Bible. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6
undergraduate hours or 8 graduate hours as topics vary.

RLST 562  Religious Diversity  credit: 4 hours.
Intensive study of philosophical and theological responses to the phenomenon of religious diversity. Prerequisite: Graduate standing in
one of the relevant fields, or consent of instructor.

RLST 567  Mahayana Buddhism  credit: 4 hours.
An investigation of Buddhist core notions as conceived from the point of view of the three Major Mahayana traditions with an examination of the ways in which these Mahayana traditions are presented in modern and early modern scholarship. At stake is the fundamental hermeneutic issue of the ways in which the "moderns" look at pre-modern thought, that is, the questions of the historical situatedness of thought. Prerequisite: At least one previous course in Buddhism or consent of instructor.

RLST 590  Independent Study  credit: 2 TO 6 hours.

Special topics not treated in regularly scheduled courses; for graduates. May be repeated. 2 to 6 graduate hours. Prerequisite: Evidence of adequate preparation for such study and consent of staff member supervising the work.
Romance Linguistics

Spanish, Italian and Portuguese
Head of Department: Diane Musumeci
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3390
www.sip.uiuc.edu

RMLG 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

RMLG 435  Intro Romance Ling  credit: 3 OR 4 hours.
Same as FR 462, ITAL 435, LING 462, PORT 435, and SPAN 435. See SPAN 435.

RMLG 559  Sem Romance Ling  credit: 4 hours.
Same as FR 559, ITAL 559, LING 559, PORT 559, and SPAN 557. See SPAN 557.
Rural Sociology

Human and Community Development
Head of Department: Robert Hughes Jr
Department Office: 274 Bevier Hall, 905 South Goodwin Avenue, Urbana
Phone: 333-3790
www.aces.uiuc.edu/~hcd

RSOC 110 Intro to Rural Society credit: 3 hours.
Basic concepts for understanding and analyzing rural society; topics include changes in major rural institutions, impacts of technological change on rural people and communities, demographic patterns and trends, migration, rural minorities and subcultures, the city-country relationship, emerging controversies and conflicts in rural areas, and cross-cultural comparisons of rural life.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

RSOC 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
May be repeated.

RSOC 270 Population Issues credit: 3 hours.
Same as SOC 270. See SOC 270.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

RSOC 443 Social Change in Dev Areas credit: 3 hours.
Description and analysis of recent social and cultural changes occurring in new nations and developing economies; special attention given to problems of traditional social structure undergoing modernization; and social factors in economic growth, caste and class, nation-building, urbanization and population composition, education, family, and religion. Same as SOC 463. Prerequisite: SOC 100.

RSOC 444 Social Impact Assessment credit: 3 OR 4 hours.
Same as ENVS 444, LA 444, NRES 444, RST 444 and UP 444. See RST 444.

RSOC 447 Environmental Sociology credit: 3 OR 4 hours.
Same as ENVS 447 and SOC 447. See SOC 447.

RSOC 540 Public Involvement in Res Mgmt credit: 3 TO 4 hours.
Same as ENVS 540, LA 540, RST 540, NRES 540, and UP 540. See NRES 540.
Recreation, Sport, and Tourism

Recreation, Sport and Tourism
Head of Department: Cary D. McDonald
Department Office: 104 Huff Hall, 1206 South Fourth Street, Champaign
Phone: 333-4410
www.leisurestudies.uiuc.edu

RST 100  **Society and Leisure**  credit: 3 hours.
Central issues in defining leisure; historical, philosophical, sociological, psychological, and economic approaches to understanding leisure behavior, its meanings, social contexts, and personal and social resources.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

RST 101  **Orientation to Leisure Studies**  credit: 1 hours.
Introduction to Recreation, Sport and Tourism which provides an overview of the RST curriculum, areas of study, and opportunities available for a career in the field.

RST 110  **Leisure Service Delivery**  credit: 2 hours.
Introduces students to the concepts, principles, and practices related to the provision of leisure services; description of the various fields of professional practices and basic elements of leisure service systems such as budgeting, planning, staffing, and characteristics of client populations.

RST 120  **Foundations of Community Rec**  credit: 3 hours.
Examines philosophical foundations of various community organizations responsible for providing residents with leisure opportunities and services, and ramifications of philosophies on programming, marketing, financing, and recruiting.

RST 130  **Foundations of Sport Mgt**  credit: 3 hours.
Examines career opportunities within the sport industry and provides knowledge relevant to the management, marketing, legal, and financial operations of sport organizations. Incorporates applications in a variety of sport entities including intercollegiate athletics, campus recreation, event and facility management, professional sport, management and marketing agencies, and international sport.

RST 140  **Nature and Wilderness**  credit: 2 hours.
Origins of the nature and wilderness preservation movements; philosophy behind nature conservation and outdoor activities; role of parks, outdoor recreation, and nature-tourism in contemporary life.

RST 150  **Foundations of Tourism**  credit: 3 hours.
Survey of travel and tourism with emphasis upon tourist behavior, motivations, preferences, decision-making, attractions, transportation services, facilities and information sources. Examines travel and tourism as an element of leisure service delivery from an interdisciplinary perspective.

RST 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

RST 200  **Leadership in Leisure Services**  credit: 2 hours.
Leadership theories and practices as related to design and delivery of leisure programs. Processes of group development and interpersonal communication in leisure service organizations.

RST 216  **Leisure and Technology**  credit: 3 hours.
Focuses on the roles of technology in leisure and related industries and explores the impact of technology on leisure from both the consumer and producer perspectives. Reviews important technologies, discusses their use as transformative mechanisms, and considers their impact on leisure activities in society.

RST 217  **Public Recreation**  credit: 3 hours.
Course examines the public sector and its role in the provision of local park and recreation services. Students will explore its philosophical foundations, organizational structure, policy-making process, and the administrative tasks of public recreation providers.

RST 218  **Entrepreneurship**  credit: 3 hours.
In-depth study of the delivery of leisure services in the for-profit sector. Covers the scope and administrative functions of recreation enterprises, including an analysis of planning, controlling, and developing recreation enterprises.
RST 230  **Leisure Services and Diversity**  credit: 3 hours.
Course is designed to increase awareness and knowledge of the leisure needs of members of ethnic and racial minorities, the poor, women, the elderly, people of alternative lifestyles, and people with disabilities. It introduces students to concepts and factors that influence the delivery of leisure services to diverse populations. Same as KIN 230.

RST 242  **Nature and American Culture**  credit: 3 hours.
Appreciation and critique of cultural meanings associated with American natural landscapes. Traditional perspectives including colonial American, romantic, and science-based conservation are characterized, as well as revisionist themes aligned with gender, cultural pluralism, and societal meanings of parks and protected areas. Implications of diversity in cultural meanings toward nature are developed and provide the basis for assessing tenets of contemporary environmental policy and supporting concepts associated with community-based conservation. Same as HIST 282, LA 242, and NRES 242.

This course satisfies the General Education Criteria for a:
UIUC: Western Compartv Cult

RST 244  **Sci-Values of Envt Decisions**  credit: 3 hours.
Examines roles of science and values in environmental decision-making, discusses land ethics, the so-called "brownlash" movement, community-based conservation, and transformation from science-based to science-informed decision processes. Same as LA 244 and NRES 244.

RST 255  **Ethical Issues in Sport Mgmt.**  credit: 2 hours.
Explores ethical issues in sport related to government, sporting opportunities, journalism and media, education, coaching, and business. Students become familiar with concepts and principles of applied ethics and gain insight into the complexity of ethical issues in sport.

RST 300  **Leisure Programming**  credit: 3 hours.
Develops understanding of the process of leisure/recreation programming and the practical aspects of program design and delivery. Prerequisite: RST 100.

RST 314  **Introduction to Aging**  credit: 3 hours.
Same as CHLH 314, HDFS 314, PSYC 314, and REHB 314. See CHLH 314.

RST 316  **Leisure and Human Development**  credit: 3 hours.
Examines changes in expressive style and behavior over the life course, and the interaction of leisure with developmental processes. Prerequisite: RST 100 or consent of instructor.

RST 320  **Leisure Services Marketing**  credit: 3 hours.
Application of marketing concepts to the delivery of leisure services. Introduces consumer decision theory analysis. Provides an integrative study of the methods and models for developing and evaluating alternative marketing strategies.

RST 330  **Leisure and Consumer Culture**  credit: 3 hours.
Examination of contemporary patterns and meanings of leisure in a consumer society. Understanding of the impact of consumption on expressions of identity, gender, social class, race and ethnicity.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: Western Compartv Cult

RST 340  **Leisure & Facility Management**  credit: 3 hours.
Basic understanding of park operations, facility design, construction, and maintenance practices; staff allocations, job analysis, contract administration, organizational structures. Prerequisite: RST 100 and RST 110.

RST 341  **Community Recreation Planning**  credit: 3 hours.
Studies the outdoor recreational use of lands in the public domain and their planning, concepts, and processes related to planning resource based systems; multiple-use in planning; planning criteria for outdoor recreation facilities. Prerequisite: Junior standing; or consent of instructor.

RST 351  **Cultural Aspects of Tourism**  credit: 3 hours.
Development of the understanding of the relationships that exist between tourists, hosts and the cultural environments in which they interact. Studies the movements of peoples across cultural boundaries, as well as notions of cultural authenticity, modernity, image creation, social justice, diversity, and representation of social, racial and ethnic groups.

RST 354  **Legal Aspects of Sport**  credit: 3 OR 4 hours.
A study of legal principles and their impact on the sport industry; the course examines the application of different areas of law including tort, contract, constitutional, anti-trust, and intellectual property law to professional, amateur and recreational sport.

RST 370  **Research Methods & Analysis**  credit: 3 hours.
Educates students in principles of research design, data collection, measurement, methods of statistical analysis, techniques in summarizing data, and the interpretation and application of research findings to the field of Leisure Studies.

This course satisfies the General Education Criteria for:  
UIUC: Quant Reasoning II

RST 390  **Honors**  credit: 2 hours.
Same as CHLH 390 and KIN 390. See KIN 390.

RST 393  **Special Problems**  credit: 2 TO 3 hours.
Special projects in research and independent investigation in any phase of health, physical education, recreation, or related areas selected by the student. May be repeated to a maximum of 6 hours. Prerequisite: Junior or senior standing; grade-point average of 3.0; consent of academic advisor, instructor, and head of department.

RST 410  **Administration of Leisure Serv**  credit: 3 OR 4 hours.
Development of overall leisure management function. Analysis of administration and policies such as organizational structure, executive leadership, decision-making, financing, and public relations. Prerequisite: Undergraduates: Completion of campus Composition I general education requirement and upper level standing.

This course satisfies the General Education Criteria for:  
UIUC: Advanced Composition

RST 420  **HRM in Leisure Organizations**  credit: 3 hours.
Concepts, principles, and objectives of supervision; the nature of the supervisory relationship; supervisory functions and processes; identification and application of methods and techniques; organizational and operational patterns of supervision in recreation and park settings.

RST 429  **Contemporary Issues in Leisure**  credit: 4 hours.
Provides a capstone experience to encourage critical and creative thinking regarding knowledge students accrued from prior courses. The first eight weeks students will meet as a whole and focus on leisure concepts in general, and the second eight weeks students will focus on their specific concentration, (Sport Management, Tourism, or Community Recreation). Prerequisite: RST 120, or RST 130, or RST 150, and senior status.

RST 444  **Social Impact Assessment**  credit: 3 OR 4 hours.
Provides the student with a theoretical understanding and the methodology to conduct social impact assessment and social soundness analysis within the context of planned change as a component of environmental impact assessment and development projects within both First and Third World countries. 3 undergraduate hours. 3 or 4 graduate hours. Same as ENVS 444, LA 444, NRES 444, RSOC 444, and UP 444. Prerequisite: RSOC 110 or SOC 100 or equivalent introductory social science course. For Urban and Regional Planning students only: UP 101 and UP 347.

RST 457  **Tourism Development**  credit: 4 hours.
Examines tourism destination development process from both applied and conceptual perspectives. Emphasis placed on creating development strategies that evaluate destination potential and consider travel destination choice behavior. Field trip required. Prerequisite: RST 150 or consent of instructor.

RST 480  **Orientation to Practicum**  credit: 1 hours.
Prepares and places students in the Leisure Studies Practicum. Students must document completion of 300 hours of field work. Topics include placement requirements and policies, resumes, interviewing, letters of application, and the role and issues of professional practice. Prerequisite: Junior standing; RST 100 and RST 110.

RST 484  **Leisure Studies Practicum**  credit: 12 hours.
Students are assigned to University-approved field training stations in an internship capacity for a minimum of forty hours per week for sixteen weeks. Both the agency and the University provide supervision. Approved for S/U grading only. Prerequisite: Senior standing; RST 480 and RST 410.

RST 501  **Theories & Concepts of Leisure**  credit: 4 hours.
Basic philosophical, historical, and scientific foundations and developments in leisure and recreation; analyses of the significance of leisure in modern societies; critical review of major writings in the field with attention to particular special problem areas and current issues. Prerequisite: RST 100 or equivalent.
RST 502  Critical Issues Recreation Mgt  credit: 4 hours.
In-depth study of the public administrative functions in large complex organizational structures; development of an understanding of change and evolution in leisure service agencies as related to the internal and external environments; study of various management styles and situations in leisure service agencies. Prerequisite: Basic course in administration or organization of leisure service agencies.

RST 503  Adv Leisure Research Methods  credit: 4 hours.
Examines methods and techniques of conducting and evaluating leisure research; experimental and survey designs and procedures; data collection, reduction and analysis. Prerequisite: RST 100 or equivalent; RST 370 or equivalent; a course in introductory statistics.

RST 512  Human Resources in RST  credit: 4 hours.
Examines theoretical and technical principles of personnel managers in leisure service agencies; recruitment, training, selection, and evaluation of personnel with special emphasis on applied measurement concepts and legislation related to personnel administration in leisure services. Prerequisite: RST 410 or consent of instructor.

RST 515  Marketing in RST  credit: 4 hours.
Examines service quality issues and service strategies needed to attain competitive advantage across leisure industries. Using a customer-focused management framework, the course focuses on customer satisfaction and retention, linking service quality, customer lifetime value, profitability segmentation, services mapping, understanding customer expectations and developing service and customer-focused relationship marketing strategies.

RST 520  Critical Issues Sport Mgt  credit: 4 hours.
An analysis of the sport industry with special emphasis given to the role and function of the sport manager. Addresses advanced issues related to organizational theory, finance, marketing, sponsorship, contemporary management and leadership, decision making and strategic planning.

RST 530  Critical Issues Tourism Mgt  credit: 4 hours.
Exposes students to advanced theories, methods, practices and principles that govern tourism behavior. Survey the body of literature on tourism, examining ongoing debates regarding how individuals travel and the structures of institutions that shape travel.

RST 540  Public Involvement in Res Mgmt  credit: 3 TO 4 hours.
Same as ENVS 540, LA 540, NRES 540, RSOC 540, and UP 540. See NRES 540.

RST 545  Sociology of Leisure  credit: 4 hours.
Sociological theory and research methods as applied to the study of leisure; institutional and community contexts of leisure, leisure roles and socialization, built and natural environments, and the relationship of leisure to family, work, subcultures, and resources. Same as SOC 545. Prerequisite: RST 501 or SOC 586 or consent of instructor.

RST 550  Theory and Methods of Leisure  credit: 4 hours.
Surveys concepts, methods, and problems of leisure research that are common to community recreation, sport and tourism. Histories of theoretical and methodological development are discussed, appreciated and critiqued. Examines the development of ideas through literature, with discussion centered on explaining the evolution of a given concept. Prerequisite: RST 501.

RST 551  Contemporary Issues in Leisure  credit: 4 hours.
Provides students with a greater understanding and appreciation of the various disciplines that influence, and are related to, leisure. Examines how these disciplines might influence future research in leisure studies. Prerequisite: RST 550.

RST 555  Diversity in Leisure Behavior  credit: 4 hours.
Examines diversity as it relates broadly to leisure behavior and services, and quality of life issues. Examines leisure diversity in terms of sexual identity, age, social class, gender, race, ethnicity, as well as mental and physical ability.

RST 565  Psychology of Leisure  credit: 4 hours.
Applies psychological theory and research methods to the study of leisure behavior and experience including a consideration of basic motivation, individual differences, and social interaction and implications for developmental intervention and human services. Prerequisite: Graduate standing or consent of instructor.

RST 575  Leisure and Culture  credit: 4 hours.
Application of anthropological approaches and methods to the study of leisure and expressive behavior. Course topics include the evolutionary foundations for leisure and culture, adaptation, race, and class; the cross-cultural correlates of leisure and applied anthropology. Same as ANTH 575 and KIN 575. Prerequisite: RST 501 or equivalent and an introductory course in anthropology, or consent of instructor.

RST 584  Management Internship  credit: 2 TO 4 hours.
Work-study experience in the management aspects of leisure service delivery systems. Students are assigned to agencies in their special fields of study and are closely supervised by University faculty. Prerequisite: RST 484 or graduate standing.

RST 590  **Seminar**  credit: 0 hours.
Student presentation of thesis studies, informal discussions, and critical analysis of problems; informal lectures by invited speakers. May be repeated.

RST 593  **Special Problems**  credit: 2 TO 4 hours.
Independent research on special projects. Open only to students majoring in recreation, sport and tourism.

RST 594  **Special Topics in Leisure**  credit: 2 TO 4 hours.
Lecture courses in topics of current interest; specific subject matter will be announced in the Class Schedule. Prerequisite: Will be determined for each section offered and will be indicated in the Class Schedule.

RST 599  **Thesis Research**  credit: 0 TO 16 hours.
Preparation of thesis in leisure studies. May be repeated. Approved for S/U grading only.
RUSS 101  First-Year Russian I  credit: 4 hours.
Oral-aural practice and elements of grammar, reading, and writing. For students who have no credit in Russian.

RUSS 102  First-Year Russian II  credit: 4 hours.

RUSS 191  Freshman Honors Tutorial  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars. May be repeated one time. Prerequisite: Consent of departmental honors advisor.

RUSS 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

RUSS 201  Second-Year Russian I  credit: 4 hours.
Oral-aural practice, systematic functional grammar, reading, and writing. Prerequisite: RUSS 102 or equivalent.

RUSS 202  Second-Year Russian II  credit: 4 hours.
Systematic review of the structure of Russian covered in RUSS 101, RUSS 102, and RUSS 201 through class lectures, drills, and homework exercises. Prerequisite: RUSS 201.

RUSS 219  Russian Cinema Survey  credit: 3 hours.
Survey of major films, film makers, and trends from Tolstoi adaptations through the revolutionary Eisenstein to current satire. Weekly film screenings. No knowledge of Russian required.

RUSS 220  19thC Russian Lit Survey  credit: 3 hours.
Study of major Russian writers from Pushkin through Chekhov; no knowledge of Russian required. Same as CWL 227.

RUSS 225  Russian Lit Since 1917  credit: 3 hours.
Major works since 1917 by Mayakovsky, Babel, Olesha, Bulgakov, Sholokhov, and others; readings and discussion in English. Same as CWL 249.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

RUSS 261  Intro Russian-Jewish Culture  credit: 3 hours.
Introduction to the interaction of the intellectual, artistic, political, social, and religious life of the Jewish community in Russia through film, literature, art and historical record. Same as HIST 261.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

RUSS 290  Readings in Russian  credit: 1 TO 4 hours.
Individual topics or projects chosen in consultation with a Slavic Department representative. May be repeated to a maximum of 8 hours. Prerequisite: RUSS 202 or equivalent proficiency.

RUSS 301  Third Year Russian I  credit: 3 hours.
Grammar review; training in writing Russian; translation from English and free composition. Prerequisite: RUSS 202 or consent of instructor.

RUSS 302  Third Year Russian II  credit: 3 hours.
Practice in intermediate-level speaking, listening, reading, and writing, based upon advanced grammar and conversation topics and upon readings from current fiction and non-fiction. Students are expected to write essays and give oral reports based on in-class assignments and outside interests. Prerequisite: RUSS 301 or consent of department.

**RUSS 305 Business Russian**  
Credit: 3 hours.  
Basic tools and skills for conducting business in Russian, including introduction to Russian economy, banking, insurance, media, internet technology, advertising, law and culture, practicum in writing the c.v and business correspondence in Russian. Prerequisite: Successful completion of RUSS 301 or consent of instructor.

**RUSS 320 Russian Writers**  
Credit: 3 hours.  
Focused study of the work of a single Russian writer in translation. No Russian required. Same as CWL 321. Prerequisite: At least one other college literature course or consent of instructor. This course may be repeated to a maximum of 6 hours.

**RUSS 322 Dostoevsky**  
Credit: 3 hours.  
Introduction to the major work of Fyodor Mikhailovich Dostoevsky. No Russian required. Same as CWL 324. Prerequisite: At least one other college literature course or consent of instructor. This course may be repeated to a maximum of 6 hours.

**RUSS 323 Tolstoy**  
Credit: 3 hours.  
Introduction to the major works of Lev Tolstoy. No Russian required. May be repeated as topics vary. Same as CWL 323. Prerequisite: One other college literature course or consent of instructor. May be repeated to a maximum of 6 hours.

**RUSS 325 Chekhov**  
Credit: 3 hours.  
Introduction to the major works of playwright and author Anton Chekhov. Same as CWL 325 and THEA 362. Prerequisite: At least one other literature course or consent of instructor.

**RUSS 333 Russian for Heritage Learners**  
Credit: 4 hours.  
Selected topics in Russian Literature; reading pieces of Russian prose and poetry, current newspapers and Internet materials; stylistic and grammar analysis. Lecture-discussion of specific genre and cultural traditions. Prerequisite: Consent of instructor.

**RUSS 335 Nabokov**  
Credit: 3 hours.  
Nabokov’s Russian and American novels read in a comparative context. All works in English, no knowledge of Russian is required. Same as CWL 335. Prerequisite: At least one other college-level literature course or consent of instructor.

**RUSS 401 Fourth Year Russian I**  
Credit: 3 hours.  
Practice in advanced speaking, listening, reading, and writing, based upon reading selected from current fiction and non-fiction, and covering a wide variety of styles: literary, conversational, scientific, etc. Course taught in Russian. Students are expected to write essays and give oral reports based on what they read in class and on their outside interests. Prerequisite: Three years of college Russian or consent of instructor.

**RUSS 402 Fourth Year Russian II**  
Credit: 3 hours.  
Practice in advanced speaking, listening, reading, and writing, based upon reading selected from current fiction and non-fiction, and covering a wide variety of styles: literary, conversational, scientific, etc. Course taught in Russian. Students are expected to write essays and give oral reports based on what they read in class and on their outside interests. Prerequisite: RUSS 401 or consent of instructor.

**RUSS 407 Structure of Russian**  
Credit: 3 hours.  
The syntax and morphology of modern Russian. Prerequisite: Three years of Russian or consent of instructor.

**RUSS 408 Russ Phonetics & Pronunciation**  
Credit: 3 hours.  
Study of the Russian sound system; training in the improvement of pronunciation and intonation. Prerequisite: Three years of Russian or consent of instructor.

**RUSS 418 18th Century Literature**  
Credit: 3 OR 4 hours.  
Reading of texts; historical and literary background of the period. 3 undergraduate hours. 4 graduate hours.

**RUSS 424 Russian Modernism**  
Credit: 3 OR 4 hours.  
Representative works of the period 1880 to 1917, with emphasis on Chekhov, Gorky, and Blok; readings for non-majors and class discussions in English. Same as CWL 457. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing or consent of instructor.

**RUSS 438 Modern Russian Poetry**  
Credit: 3 OR 4 hours.  
Study of major Russian poets and their works from romanticism to the present. Historical background, textual analysis and connections with Western European poetry. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Consent of instructor.
RUSS 444  Problems in Romanticism  credit: 3 OR 4 hours.
Study of major authors of the romantic period, with the inclusion of several lesser authors, such as Mikhail Lermontov. Historical background, textual analysis, and connections with Western European romanticism. Same as CWL 444. 3 undergraduate hours. 3 or 4 graduate hours. Offered in alternate years. Prerequisite: Consent of instructor.

RUSS 445  Problems in Realism  credit: 3 OR 4 hours.
Study of the major texts of nineteenth century Russian realism, including works by Turgenev, Goncharov, Nekrasov, Dostoevsky, and Tolstoy. Historical background, relevant intellectual currents, textual analysis, and connections with Western European realist authors. Same as CWL 445. 3 undergraduate hours. 3 or 4 graduate hours. Offered in alternate years. Prerequisite: Consent of instructor.

RUSS 460  Russian Culture Studies  credit: 3 OR 4 hours.
Role of Russian literature in the social, political, and intellectual life of Russia from the 1840s to the present. Same as CWL 440. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing.

RUSS 461  Russia and the Other  credit: 3 hours.
Interdisciplinary and comparative topics including, but not limited to: Russia and the West, Russia and the East, the Cold War, and post-Soviet cultural studies. This course may be repeated up to a maximum of 6 hours. Prerequisite: Russian course at the 200 or 300 level or consent of instructor.

RUSS 465  Russian-Jewish Culture  credit: 3 OR 4 hours.
Study of Russian-Jewish cultural, social, and political life through literature and film. No Russian required. 3 undergraduate hours. 4 graduate hours. Prerequisite: One literature course in the Slavic department at the 200 or 300 level, or consent of instructor.

RUSS 466  Russian Women's Writing  credit: 3 OR 4 hours.
Study of fiction and non-fiction writing by Russian women, including discussion of historical context and feminist theory. 3 undergraduate hours. 4 graduate hours. Prerequisite: One literature course in the Slavic department at the 200 or 300 level, or consent of instructor.

RUSS 470  Russian Advanced Studies  credit: 3 hours.
Advanced study of a specific theme or problem in Russian literary and cultural studies, with some reading in Russian, and some discussion of critical theory. 3 undergraduate hours. Prerequisite: At least one course in Slavic Department at the 400 level or consent of instructor.

RUSS 471  Intro Second Lang Learn Tchg  credit: 4 hours.
Same as CHIN 471, FR 471, GER 469, HUM 471, JAPN 471, LAT 471, and SPAN 471. See SPAN 471.

RUSS 474  Russian Literary Translation  credit: 3 OR 4 hours.
Theory and practice of literary translation in Russia from the eighteenth century to the present; "literal" versus "creative" translation; and practical work in translation into English of various Russian literary texts. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: RUSS 302 or equivalent.

RUSS 475  Intro to Comm Lang Tchg  credit: 4 hours.
Same as CHIN 475, FR 475, GER 475, JAPN 475, LAT 475, and SPAN 475. See SPAN 475.

RUSS 478  Topics Secondary Lang Tchg  credit: 4 hours.
Same as CHIN 478, FR 478, GER 478, JAPN 478, LAT 478, and SPAN 478. See SPAN 478.

RUSS 493  Honors Senior Thesis  credit: 2 hours.
Intended primarily for candidates for honors in Russian but open to other seniors. 2 undergraduate hours. No graduate credit. May be repeated. Prerequisite: Senior standing.

RUSS 501  Russian for Grad Students I  credit: 4 hours.
Provides training in academic Russian for graduate students in social sciences and humanities. Designed for advanced learners of Russian who are interested in developing more specialized language skills. The content of the course will be tailored to the needs of the specific group. May be repeated to a maximum of 8 hours. Prerequisite: RUSS 402 or consent of instructor.

RUSS 502  Russian for Grad Students II  credit: 4 hours.
Continuation of Russian 501. Provides training in academic Russian for graduate students in social sciences and humanities. Designed for advanced learners of Russian who are interested in developing more specialized language skills. The content of the course will be tailored to the needs of the specific group. May be repeated to a maximum of 8 hours. Prerequisite: RUSS 501 or consent of instructor.

RUSS 506  Russian Morphology  credit: 4 hours.
Survey of the various parts of speech of modern standard literary Russian with special emphasis on the nominal and verbal systems. Prerequisite: RUSS 407 or equivalent.

RUSS 517 11th-17thC Russ Lit & Lang  credit: 4 hours.
Historical grammar, origin, and development of the literary language. Prerequisite: SLAV 480 or SLAV 505 or equivalent.

RUSS 520 Russian Writers  credit: 4 hours.
Study of a Russian author's works in the original Russian, historical and philosophical contexts, current critical approaches. May be repeated to a maximum of 8 hours.

RUSS 522 Dostoevsky  credit: 4 hours.
Study of Dostoevsky's works in the original Russian, historical and philosophical contexts, current critical approaches. May be repeated to a maximum of 8 hours.

RUSS 535 Nabokov  credit: 4 hours.
Study of Nabokov's Russian and American novels in the original Russian and English, read in a comparative and theoretical context. Same as CWL 535. Prerequisite: Knowledge of Russian or consent of instructor.

RUSS 563 College Teaching Foreign Langs  credit: 2 OR 4 hours.
Same as EIL 563, FR 563, GER 563, ITAL 563, PORT 563, and SPAN 563. See FR 563.
SAME 133  **Intro to the World of Islam**  credit: 3 hours.

Introduction to the world of Islam. Islamic thought and traditional institutions; historical expansion and evolution of the Islamic world in pre-modern and modern times; state, society and cultures in different world regions; gender issues; artistic expression; family life; language and identity; literary expression; issues in economic development; human rights; Christian-Muslim relations; debates over Sharia vs. secular law. Same as HIST 133. This course can be used to fulfill either Western or Nonwestern general education categories, but not both.

This course satisfies the General Education Criteria for a:
- UIUC: Non-Western Cultures
- UIUC: Hist&Philosoph Perspect
- UIUC: Western Compartv Cult
SCAN 101  **Beginning Scandinavian I**  credit: 4 hours.
Introduction to basic skills-reading, writing, speaking, and aural comprehension-in a Scandinavian language (usually Swedish).

SCAN 102  **Beginning Scandinavian II**  credit: 4 hours.
Introduction to basic skills-reading, writing, speaking, and aural comprehension-in a Scandinavian language (usually Swedish). Prerequisite: SCAN 101 or consent of instructor.

SCAN 103  **Intermediate Scandinavian I**  credit: 4 hours.
Development of communicative skills-reading, writing, speaking and aural comprehension-through the study of authentic texts. Class conducted entirely in the target language (usually Swedish). Prerequisite: SCAN 102 or equivalent or consent of instructor.

SCAN 104  **Intermediate Scandinavian II**  credit: 4 hours.
Further development of communicative skills-reading, writing, speaking and aural comprehension-through the study of authentic texts. Class conducted entirely in the target language (usually Swedish), with an emphasis on learning about contemporary Sweden, including its role in the European Union. Prerequisite: SCAN 103 or equivalent or consent of instructor.

SCAN 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

SCAN 215  **Madness, Myth, and Murder**  credit: 3 hours.
Focuses on the achievements of major Scandinavian writers of prose fiction, from 1850 to today. Explores topics of madness, myth, and murder in literature. All reading, discussion, and writing in English. Same as CWL 215.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

SCAN 225  **Vikings & Volvos: Scan Culture**  credit: 3 hours.
Introduction to Scandinavian culture, literature, history, and film from the Viking era until today. All readings in English.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

SCAN 251  **Viking Mythology**  credit: 3 hours.
Studies pre-Christian beliefs of the Germanic peoples as reflected primarily in medieval Icelandic prose and poetry (in translation). Same as CWL 251, MDVL 251, and RLST 251.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

SCAN 252  **Viking Sagas in Translation**  credit: 3 hours.
Studies Old Norse-Icelandic literature: kings’ sagas, family sagas, mythical-heroic sagas, and romances. Texts and lectures in English. Same as CWL 252 and MDVL 252.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

SCAN 375  **Scandinavian Sexualities**  credit: 3 hours.
Investigates the myth and reality of “Scandinavian Sexualities” as presented in texts, primarily fiction, from the early nineteenth century to today. Starting with Romanticism's understanding of feminine nature, the course moves on to topics of morality debates, independence movements, prostitution, sexual liberation, homosexuality, and social gender equality. Same as CWL 375 and GWS 375. Prerequisite: One college-level literature, arts, or film course or one course in women's studies, or consent of instructor.
SCAN 463  **Ibsen in Translation**  credit: 3 OR 4 hours.

Ibsen's major plays: Brand, Peer Gynt, and the entire prose cycle from Pillars of Society to When We Dead Awaken. Same as CWL 463 and THEA 483. 3 undergraduate hours. 4 graduate hours. Prerequisite: One college-level literature or theatre course, or consent of instructor.

SCAN 464  **Strindberg in Translation**  credit: 3 OR 4 hours.

Major dramas illustrating Strindberg's evolution from Naturalism to Expressionism and one cycle of historical plays; some attention to prose, both autobiographical and non-autobiographical. Same as CWL 464 and THEA 484. 3 undergraduate hours. 4 graduate hours. Prerequisite: One college-level literature or theatre course, or consent of instructor.

SCAN 490  **The Films of Ingmar Bergman**  credit: 3 hours.

Focuses on Bergman's major films of the late 1950s and 1960s; involves reading screenplays and extensive criticism in addition to viewing the films; and includes important artistic influences on Bergman as well as his own significance as a major twentieth-century artist. Knowledge of Swedish not required. Same as CINE 490.

SCAN 492  **New Scandinavian Cinema**  credit: 3 hours.

Represents the breadth and critical importance of contemporary Scandinavian film culture and cinema practices. Significant themes, movements, and production features will be addressed, including transnational and minority filmmaking and the international export of Scandinavian film. All materials in English. Same as CINE 492. Prerequisite: One college-level film or literature course, or consent of instructor.

SCAN 493  **Honors Senior Thesis**  credit: 2 TO 4 hours.

May be repeated to a maximum of 4 hours. 2 to 4 undergraduate hours. No graduate credit. Prerequisite: Senior standing; consent of instructor.

SCAN 494  **Topics in Scan Languages**  credit: 1 TO 4 hours.

Advanced Scandinavian languages instruction. May be repeated in separate terms to a maximum of 9 undergraduate or 9 graduate hours if topics vary. Prerequisite: SCAN 104 or equivalent as approved by instructor.

SCAN 496  **Special Topics in Scan Studies**  credit: 1 TO 4 hours.

Individual study in selected topics, such as individual authors, literary movements, periods, genres, or themes, and Scandinavian culture. May be repeated. Prerequisite: Consent of instructor.

SCAN 505  **Old Norse-Icelandic I**  credit: 4 hours.

Grammar and selected readings. Same as MDVL 505. Offered in alternate years.

SCAN 506  **Old Norse-Icelandic II**  credit: 4 hours.

Readings; selections from the Elder Edda and the sagas. Same as MDVL 506. Offered in alternate years. Prerequisite: SCAN 505.
Serbo-Croatian

Slavic Languages and Literature
Head of Department: Harriet Murav
Department Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-0680
www.slavic.uiuc.edu/

SCR 101  **Basic Serbian or Croatian I**  credit: 4 hours.
Oral and written work on pronunciation, grammar, and vocabulary. For students with no previous study of Serbian or Croatian.

SCR 102  **Basic Serbian or Croatian II**  credit: 4 hours.
Continuation of SCR 101. Prerequisite: SCR 101 or equivalent proficiency.

SCR 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

SCR 201  **2nd Year Serbian & Croatian I**  credit: 4 hours.
Completion of grammar; written and oral exercises aimed at active command of the language. Prerequisite: SCR 102 or equivalent proficiency.

SCR 202  **2nd Year Serbian & Croatian II**  credit: 4 hours.
Selected readings in Serbian or Croatian literature and culture. Prerequisite: SCR 201 or equivalent proficiency.

SCR 301  **Third-Year Serbian/Croatian I**  credit: 3 hours.
Analysis of the sound system and grammar of the contemporary Serbian or Croatian language. Prerequisite: Knowledge of another Slavic language or consent of instructor.

SCR 302  **Third-Year Serbian/Croatian II**  credit: 3 hours.
Reading and analysis of selected texts. Prerequisite: SCR 301 or consent of instructor.
Speech and Hearing Science

Speech and Hearing Science
Head of Department: Adrienne Perlman
Department Office: 901 South Sixth Street, Champaign
Phone: 333-2230
www.shs.uiuc.edu

SHS 120 Child, Comm, & Lang Ability credit: 3 hours.
Provides an introduction to the study of the human communication and language capacity and includes an overview of three areas of inquiry: language science, language development in children, and language disability in children.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

SHS 121 American Sign Language I credit: 4 hours.
This is an introductory course in American Sign Language (ASL). No prior experience with the language is necessary. Students will learn vocabulary, elementary-level grammatical structures, and elements of U.S. Deaf Culture in order to engage in entry-level conversations in ASL. Basic social and communication skills associated with the use of ASL will be emphasized. This course is part of a sequence of courses that will fulfill the foreign language requirement for UIUC undergraduate students. Same as LING 121. Approved for both letter and S/U grading.

SHS 170 Hum Comm: Sys, Proc & Dis credit: 3 hours.
Examines broad perspectives of theories and information regarding normal and abnormal communication: how speech and language develop, how people hear, how they produce speech and what can go wrong; addresses the impact of speech and hearing science on society, culture, and modern technologies.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

SHS 171 Evolution of Human Comm credit: 3 hours.
Provides an introduction to the study of how human communication evolved, including evolutionary physiologic bases, animal and human communication systems, language changes over time, and implications for speech, language, and hearing disorders. Same as ANTH 171.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

SHS 191 Freshmen Seminar credit: 0 TO 9 hours.
Special experimental seminar or independent study course intended to cover topics not treated by regular course offerings; open to undergraduates at any level. Requests for activation of this course may be made by students or by faculty and should be directed to the head of the academic department concerned. Although credit toward graduation is normally granted, credit toward satisfying specific college or departmental requirements is contingent upon approval by the appropriate college or departmental committee. Approved for S/U grading only. May be repeated.

SHS 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated if sections vary.

SHS 200 General Phonetics credit: 3 hours.
Basic principles of phonetic study; includes observation and representation of pronunciation, ear training, and practice in transcription.

SHS 221 American Sign Language II credit: 4 hours.
This intermediate course in American Sign Language (ASL) is part of a sequence to fulfill the foreign language requirement. Students must have successfully completed SHS 121 or should be able to demonstrate advanced beginner ASL skills. Students will continue to learn vocabulary items and intermediate-level grammatical structures in order to improve conversation skills. As compared to SHS 121, a greater focus is placed on ASL constructions involving the complex use of space (e.g., verb inflections, so-called "classifiers", and constructed action). Same as LING 221. Approved for both letter and S/U grading. Prerequisite: SHS 121 or equivalent language skills.

SHS 222 Lang&Culture Deaf Communities credit: 3 hours.
Students will learn about culture and how it is manifested in various subgroups of society - with a particular focus on the culture and language of Deaf people in the United States. Themes include: the linguistics of American Sign Language, aspects of social unity for
Deaf people, common experiences of Deaf individuals, the educational system and Deaf students, and current issues that affect the Deaf community. Same as EPSY 222.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

SHS 230 Manual Communication credit: 2 hours.
Study of methods of manual communication with hearing impaired individuals; analysis of the language of signs and finger spelling in relation to origins, development, and structure; and extensive practice in manual communication. Prerequisite: Consent of instructor

SHS 231 Lang Diff Dis: American Persp credit: 3 hours.
Same as AFRO 231. See AFRO 231.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

SHS 240 Intro Sound & Hearing Science credit: 3 hours.
Acoustics, anatomy, and physiology of the auditory system; psychophysical methods; and a consideration of auditory theories and mechanics.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

SHS 252 American Deaf Culture & Educ credit: 3 hours.
Same as EPSY 252 and SPED 252. See EPSY 252.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

SHS 270 Comm Disability in the Media credit: 4 hours.
Introduction to the study of human communication disability across the lifespan as depicted in the media and includes an overview of three areas of inquiry: behavioral/psychosocial impact of communication disability, ethical decisions in rehabilitation interventions, and disability rights.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: Advanced Composition

SHS 271 Communication and Aging credit: 3 hours.
Course introduces social and physical issues of communication and aging, with particular emphasis on intergenerational interactions and on the physical disabilities of aging (e.g., hearing loss, Parkinson's disease, strokes, dementia). Discourse analysis techniques are used to integrate the social and physical aspects of aging and communication that are discussed in class.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

SHS 300 Anat & Physiol Spch Mechanism credit: 4 hours.
Introduction to the anatomic and physiologic characteristics of the normal speech mechanism. Same as LING 300.

SHS 301 General Speech Science credit: 4 hours.
Consideration of the physiology of the speaking act, and the acoustical and perceptual aspects of speech. Same as LING 303.

SHS 320 Development of Spoken Language credit: 3 hours.
Study of the correlates of language development from the prelinguistic period to adulthood.

SHS 321 American Sign Language III credit: 4 hours.
This advanced-intermediate course in American Sign Language (ASL) is part of a sequence to fulfill the foreign language requirement. Students must have successfully completed SHS 221 or should be able to demonstrate intermediate ASL conversation skills. Students will learn technical vocabulary items and complex elements of ASL narratives. In this course, students will focus on the fluid use of ASL across various registers and situations. Special emphasis will be placed on receptive fluency of complex constructions in ASL. Same as LING 321. Approved for both letter and S/U grading. Prerequisite: SHS 221 or equivalent language skills.

SHS 330 Intro Phonological Disorders credit: 3 hours.
Study of the symptoms, causes, and treatment of articulation disorders. Prerequisite: Consent of instructor.
SHS 331  **Language Disorders in Children**  credit: 3 hours.
Definition, etiology, and description of various types of language disorders in children; assessment and intervention of these clinical cases. Prerequisite: Consent of instructor.

SHS 332  **Assess Spch Lang Dis in Child**  credit: 3 hours.
Introduction to principles of diagnosis; discussion of administration, scoring, and interpretation of tests utilized during speech and language evaluation. Prerequisite: SHS 320 and SHS 330, or consent of instructor.

SHS 390  **Individual Study**  credit: 2 TO 4 hours.
Individual investigation of special problems. May be repeated to a maximum of 6 hours. Prerequisite: Ten hours of speech and hearing science, and written approval by the faculty members who will supervise the student's work.

SHS 395  **Honors Individual Study**  credit: 2 hours.
Individual study leading either to a thesis or to departmental honors. May be repeated to a maximum of 4 hours. Prerequisite: Senior standing; a cumulative grade point of 3.5 or consent of the head of the department.

SHS 410  **Stuttering: Theory & Practice**  credit: 2 TO 4 hours.
Study of the theoretical and research literature concerning the causes, diagnosis, and treatment of stuttering and an analysis of clinical procedures in stuttering therapy. Prerequisite: Consent of instructor.

SHS 411  **Intro to Voice Disorders**  credit: 2 TO 4 hours.
Study of the symptoms, causes, and treatment of voice disorders. Prerequisite: SHS 330 or consent of instructor.

SHS 427  **Language and the Brain**  credit: 3 OR 4 hours.
Same as LING 427 and PSYC 427. See PSYC 427.

SHS 430  **Devel & Disorders Phonol Artic**  credit: 3 OR 4 hours.
Survey of basic knowledge concerning normal and deviant phonological development, and principles for applying this knowledge to the assessment and remediation of phonological disorders. 3 undergraduate hours. 4 graduate hours. Prerequisite: For undergraduate credit, students must have senior level status in the SHS Program or consent of instructor. Additional work is involved for 3 hours. For graduate credit, students must have graduate level status in the SHS Program or consent of instructor. Additional work involved for 4 hours.

SHS 431  **Lang Disorders Preschool Child**  credit: 3 OR 4 hours.
Advanced study of early language milestones, processes, and theories; examination of the nature and character of disordered language acquisition in preschool children, and evaluation of current theory and intervention research in the area. 3 undergraduate hours. 4 graduate hours. Prerequisite: For undergraduate credit, students must have senior level status in the SHS program or consent of instructor. For graduate credit, students must have graduate level status in the SHS Program or consent of instructor. Additional work involved for 4 hours credit.

SHS 450  **Intro Audiol & Hear Disorders**  credit: 4 hours.
Review of the history of audiology as a profession; study of symptoms, causes, and treatment of hearing losses; and principles and application of basic audiometry. Prerequisite: Consent of Instructor.

SHS 451  **Aural Rehab Children to Adults**  credit: 2 TO 4 hours.
Principles and methods of clinical and classroom retraining of the hard-of-hearing; includes lip reading, auditory training, speech disorders and conservation, and counseling. Prerequisite: Consent of instructor.

SHS 470  **Neural Bases Spch Lang**  credit: 4 hours.
Advanced study of neuroanatomy and neurophysiology with emphasis on current research pertaining to nervous system structures and functions important for speech and language. Critical analyses of current theories of the function of neural mechanisms utilized in speech and language. Prerequisite: SHS 300 and SHS 301, or equivalent, or consent of instructor.

SHS 473  **Augmentative & Alt Comm**  credit: 2 TO 4 hours.
Introduces students to the field of augmentative and alternative communication (AAC), to the range of assistive technologies, and to diagnostic and treatment approaches used by speech-language pathologists. Focuses on the communicative needs of adults and children with acquired communication disorders in a variety of settings (e.g., hospital, school, home, work). Prerequisite: For undergraduate credit, 2 or 3 hours, students must have senior level status in the SHS Program, or consent of instructor. Additional work is involved for 3 hours. For graduate credit, 2 to 4 hours, students must have graduate level status in the SHS Program, or consent of instructor. Additional work involved for 4 hours.

SHS 500  **Exper Phon I Spch Physiol**  credit: 4 hours.
Theoretical consideration of speech as motor behavior, special reference to physiological investigations of normal respiration, phonation, and supralaryngeal articulation; and survey of the experimental literature in articulatory phonetics. Same as LING 575. Prerequisite: Consent of instructor.

**SHS 501  Exper Phon II Spch Acous Perc**  credit: 4 hours.
Theoretical consideration of speech as an acoustical phenomenon; special reference to acoustical investigations of the laryngeal source and radiated speech signal; and survey of the experimental literature in acoustic phonetics and speech perception. Same as LING 576. Prerequisite: Consent of instructor.

**SHS 503  Speech and Hearing Acoustics**  credit: 4 hours.
Same as ECE 538 and LING 521. See ECE 538.

**SHS 510  Advanced Seminar in Stuttering**  credit: 4 hours.
Advanced study of stuttering disorders; topics vary, but emphasis is placed on research, measurement, evaluation, and methods. Prerequisite: SHS 410 or consent of instructor.

**SHS 511  Head/Neck Ca & Neuro Voice Dis**  credit: 2 TO 4 hours.
Advanced study and critical analysis of the literature pertaining to anatomic, physiologic, acoustic, and psychological bases of voice pathology and laryngectomy. Includes methods of diagnosis and treatment. Prerequisite: SHS 300, SHS 301, SHS 411 or equivalent or consent of instructor.

**SHS 512  Orofacial Anomalies**  credit: 2 TO 4 hours.
Evaluation of current theories and intervention research associated with cleft palate and orofacial anomalies. Advanced study and critical analysis of speech, dental, and surgical treatment procedures. Prerequisite: SHS 300, SHS 301 or equivalent or consent of instructor.

**SHS 513  Normal & Disordered Swallowing**  credit: 4 hours.
Study of the anatomy, physiology, and pathophysiology of the oral and pharyngeal stages of swallowing and critical review of the research literature pertaining to methods for diagnosis and treatment of dysphagia. Prerequisite: SHS 300 or equivalent and SHS 470, or consent of instructor.

**SHS 514  Motor Speech Disorders**  credit: 4 hours.
Study of the etiology and symptomatology of pediatric and adult speech problems resulting from neurological impairment, and critical review of the research literature pertaining to methods for assessment and treatment of these disorders. Prerequisite: SHS 300 or equivalent and SHS 470, or consent of instructor.

**SHS 520  Language Science**  credit: 4 hours.
Study of recent research and theory in neurolinguistics, psycholinguistics, and sociolinguistics. Intensive examination of data collection and analysis procedures in language acquisition, and interpretation of research results relative to different age groups. Implications for clinical practice and clinical research in language disorders are addressed. Prerequisite: SHS 320 or equivalent, or consent of instructor.

**SHS 530  Devel & Disorders Phonol Artic**  credit: 3 OR 4 hours.
Survey of basic knowledge concerning normal and deviant phonological development, and principles for applying this knowledge to the assessment and remediation of phonological disorders. 3 undergraduate hours. 4 graduate hours. Prerequisite: For undergraduate credit, students must have senior level status in the SHS Program or consent of instructor. For graduate credit, students must have graduate level status in the SHS Program or consent of instructor. Addition work involved for 4 hours credit.

**SHS 532  Lang Disorders Schl-Age Child**  credit: 2 TO 4 hours.
Advanced study of the nature of language impairments and language/learning disabilities found in the school-age population, and ramifications for academic success and social development; critical review of theoretical models and empirical evidence of language learning in older children; evaluation of research in the diagnosis and treatment of language impairments in older children. Prerequisite: SHS 320 or equivalent, or consent of instructor.

**SHS 533  Advanced Language Diagnostics**  credit: 2 TO 4 hours.
Advanced study of the diagnosis of language disorders in children from infancy through adolescence; particular emphasis on critical evaluation of current methods in assessment, the development of problem-solving skills, and the application of computer technology in language analysis Prerequisite: SHS 332 and SHS 520 or equivalent, or consent of instructor.

**SHS 534  Aphasia and Related Disorders**  credit: 2 TO 4 hours.
Advanced study of the communication disorders resulting from neurological impairments in adults: critical analysis of the research literature, examination of current theories regarding aphasia and related disorders; evaluation of existing paradigms of diagnosis and intervention. Prerequisite: SHS 470 or consent of instructor.
SHS 540  **Psychoacoustics**  credit: 4 hours.
Advanced study of physical nature of sound and its measurement; theory and practice of psychophysics, including the various aspects of psychoacoustics (sensitivity, masking, loudness, pitch, binaural hearing, speech perception) and the nonlinear nature of the auditory system. Prerequisite: SHS 240 or equivalent.

SHS 541  **Clinical Auditory Anat & Phys**  credit: 4 hours.
The objective of the course is for students to gain an understanding of the structure and function of the peripheral and central auditory system from a clinically oriented perspective. Clinically relevant topics on the pathophysiology of the auditory system will be presented. Prerequisite: SHS 240, SHS 450 or equivalent, or consent of instructor.

SHS 550  **Assess Audition & Aud Disorder**  credit: 4 hours.
Study of technical and clinical aspects of audiological assessment and auditory disorders; critical analysis of clinical and experimental literature; laboratory experience in audiological assessment techniques. Prerequisite: SHS 240, SHS 450, or equivalent, or consent of instructor.

SHS 551  **Electrophys Indic Aud Balance**  credit: 4 hours.
Study of technical and clinical aspects of electrophysiologic measures of audition and balance; critical analysis of clinical and experimental literature; laboratory experience in electrophysiologic techniques. Prerequisite: SHS 240, SHS 450 or equivalent or consent of instructor.

SHS 552  **Diag Hear Impair Infants Child**  credit: 4 hours.
Study of the major etiologies underlying hearing impairments encountered in the pediatric population, program models for infants and young children at risk for hearing impairment, behavioral and physiologic issues in assessment and evaluation of residual hearing, and selection of hearing aids and other sensory prosthetic devices. Prerequisite: SHS 550.

SHS 553  **Hearing Aids and Amplification**  credit: 4 hours.
Study of technical and clinical aspects of personal hearing aids and amplification devices; survey of clinical and experimental literature; laboratory experience in electroacoustic and real-ear measurement, earmold impressions and modification procedures, and solving fitting problems. Prerequisite: SHS 550.

SHS 554  **Advanced Audiological Assess**  credit: 4 hours.
Seminar on current research in advanced audiology, with emphasis on experimental and clinical protocols involving electrophysiologic and behavioral measures in areas including newborn auditory screening using evoked potentials, intraoperative and intensive care unit monitoring, brain-mapping, event-related potentials, central auditory assessment, and computerized assessment of balance function. Prerequisite: SHS 551 or equivalent, or consent of instructor.

SHS 555  **Comm Lang Probs Hear Impaired**  credit: 4 hours.
Advanced course in the problems and procedures involved in the acquisition of language and communication by persons with severe hearing impairment, particularly those with profound prelingual deafness; emphasis on research and measurement in the development of speech, speechreading, residual hearing, reading, written language, and manual communication, including finger spelling and the language of signs; and stress on the applications of recent approaches in linguistics and psycholinguistics to language development. Prerequisite: Consent of instructor.

SHS 556  **Sens Prosth Devices Hear Loss**  credit: 4 hours.
Seminar on current research in signal processing approaches and experimental protocols for the development and fitting of hearing aids, tactile aids, cochlear implants, and assistive listening devices. Prerequisite: SHS 550 or consent of instructor.

SHS 557  **Adv Clin Prac Aud Assess Rehab**  credit: 1 TO 8 hours.
Supervised assessment and management of patients. Includes audiological evaluation techniques; treatment counseling; hearing aid selection, evaluation, and dispensing; and aural rehabilitation therapy. External placement in a variety of sites is available as well as in the departmental Audiology Clinic. May be repeated with approval. Prerequisite: Graduate standing, plus SHS 240, SHS 450, SHS 451, or equivalent coursework and consent of instructor.

SHS 570  **Quant Reasoning Spch Hear Sci**  credit: 2 OR 4 hours.
Introduction to experimental designs and methods of statistical analysis in speech and hearing research. Prerequisite: Consent of instructor.

SHS 571  **Clinical Sociolinguistics**  credit: 4 hours.
Clinical application of sociolinguistic concepts for communicatively impaired populations. Focuses on language difference, and utilizes technological strategies needed for assessment and intervention with linguistically diverse populations. Includes computer analysis of talk data from language disordered and linguistically different speakers. Prerequisite: Consent of instructor.

SHS 572  **Counseling in Comm Disorders**  credit: 4 hours.
Focuses on counseling principles, theories, and methods useful to the speech-language pathologist and audiologist when working with communication disordered individuals and their families. Issues related to ethics, values, grief, culture, family systems, the impact of disability, referral sources and techniques for interviewing and counseling are discussed. Prerequisite: Consent of instructor.

SHS 575  School Spch-Lang Clin Methods  credit: 2 hours.
Study of methods and materials used in the schools by the speech and language clinician. Approved for S/U grading only. Prerequisite: Consent of instructor.

SHS 576  School Intrnshp Spch-Lang Path  credit: 4 TO 8 hours.
The student is assigned to a school-based speech-language pathologist for a practical learning experience in P-12 schools full-time for 8-16 weeks. The student is expected to apply knowledge learned in the academic and clinical portions of their program to the entire school caseload by the end of this experience. May be repeated to a maximum of 8 graduate hours. Approved for both letter and S/U grading. Prerequisite: Forty graduate hours of coursework including a minimum of 6 graduate hours of clinical practicum in SHS 475 C, D, or E, or consent of instructor.

SHS 577  Adv Clin Prac Spch-Lang Path  credit: 1 TO 4 hours.
Supervised management of clients demonstrating a variety of communicative disorders. Participation in diagnosis of problems and planning of treatment. External placement in a variety of outside sites. May be repeated with approval. Prerequisite: SHS 200 or equivalent and consent of instructor.

SHS 580  Seminar Cochlear Implants  credit: 4 hours.
Focuses on current cochlear implant technologies, principles of evidence-based practice of cochlear implant assessment and intervention by audiologists and speech-language pathologists, and empirical outcomes for children and adults. Students complete a comprehensive case study project to demonstrate critical analysis of the literature and application to clinical practice. Prerequisite: Graduate standing in the Department of Speech and Hearing Science.

SHS 592  Prosem Spch & Hear Sci  credit: 0 hours.
Required seminar for all graduate students; involves reporting of ongoing research of faculty, visiting researchers, and students. Approved for S/U grading only.

SHS 593  Special Problems  credit: 2 TO 8 hours.
Investigative projects in speech and hearing not including theses. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

SHS 599  Thesis Research  credit: 0 TO 16 hours.
Individual research in the various areas of speech and hearing science. May be repeated. Approved for S/U grading only.
SLAV 117  Russ & E Euro Science Fiction  credit: 3 hours.
Survey of the science fiction writing of Russia and the countries of Eastern Europe since 1750, with particular emphasis on the post-
World War II period. The role of the Science Fiction tradition in the respective national cultures. The influence on Russian and East
European Science Fiction of Anglo-American Science Fiction. All readings are in English. Same as CWL 117.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

SLAV 120  Slavic Folklore  credit: 3 hours.
Introduction to Slavic folklore, focusing on beliefs and folktales in Slavic tradition from a comparative perspective, with an emphasis on
methods of analysis and the role of gender.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

SLAV 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

SLAV 277  Slavic Literature Survey  credit: 3 hours.
Examines masterpieces of Czech, Polish, and Yugoslav literatures from medieval times to the present in English translation.
Representative works are by Capek, Kundera, Mickiewicz, Milosz, Andric and others. Attention given to the European context and
national traditions. Same as CWL 277. Prerequisite: One course in Slavic literature.

SLAV 418  Language & Minorities in Europe  credit: 3 OR 4 hours.
Same as FR 418, GER 418, LING 418, and PS 418. See FR 418.

SLAV 419  Russian & East European Film  credit: 3 OR 4 hours.
Study and analysis of major film makers, genres, trends, and theories, including the 1920's Soviet avant garde and the Polish and
Czech "New Wave" since 1953; lectures, discussions, screenings, term paper. No reading knowledge of Russian required, except
for majors in Slavic Languages and Literatures. Same as CINE 419, and MS 419. 3 undergraduate hours. 3 or 4 graduate hours.
Prerequisite: RUSS 219; or a college level course REES or in CINE; or consent of instructor.

SLAV 420  Jewish Life-Writing  credit: 3 OR 4 hours.
Same as CWL 421, HIST 436, RLST 420, and YDSH 420. See YDSH 420.

SLAV 452  Slavic Cultural Studies  credit: 3 OR 4 hours.
Selected topics in the literatures of Russia and Eastern Europe. Topics covered will range from in-depth studies of specific authors,
time periods, and thematic discussions of specific genre and literary traditions. Readings in English unless specified. Same as CWL
453. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours in same
term; or 9 undergraduate hours or 12 graduate hours in separate terms. Prerequisite: Two years of literature, preferably Russian or
East European; or consent of instructor.

SLAV 477  Post-Communist Fiction  credit: 3 OR 4 hours.
Survey of the central and east European novel in the postcommunist period. Explores how fiction has responded to and creatively
figured the period of the so-called "transition" to capitalism and the continuities and discontinuities in literary traditions in these
societies, as well as the relevance of theories of postmodernism and postmodern literary analysis to these literatures. Same as CWL
477 and REES 477. 3 undergraduate hours. 4 graduate hours. Prerequisite: Two courses in Slavic literature including one at the 300-
level or consent of the instructor.

SLAV 480  Intro to Slavic Linguistics  credit: 3 OR 4 hours.
The development of Common Slavic from Indo-European and its relationship to contemporary Slavic languages. Same as LING 480. 3
undergraduate hours. 3 or 4 graduate hours. Prerequisite: Knowledge of a Slavic language.
SLAV 482  **Computer Foreign Lang Tchg**  credit: 4 hours.  
Same as CLCV 482, EIL 482, FR 482, GER 482, HUM 482, ITAL 482, LING 486, PORT 482, and SPAN 482. See HUM 482.

SLAV 505  **Old Church Slavonic**  credit: 4 hours.  
Analysis of grammar and reading of texts. Prerequisite: Knowledge of a Slavic language.

SLAV 525  **Problems in Slavic Literature**  credit: 4 hours.  
Selected subjects in Russian and Slavic prose, poetry, drama, and literary criticism. Topics vary. May be repeated to a maximum of 12 hours.

SLAV 576  **Methods in Slavic Grad Study**  credit: 4 hours.  
Comparative, interdisciplinary methods and theoretical issues crucial to studies in Slavic literature, history, and culture. Theoretical bookshelf followed by specific case studies from Slavic. Same as CWL 576. May be repeated to a maximum of 8 hours as topics vary.

SLAV 591  **Individual Topics**  credit: 1 TO 8 hours.  
Prerequisite: Graduate standing with a major or minor in Russian; consent of department.

SLAV 599  **Thesis Research**  credit: 0 TO 16 hours.  
May be repeated. Approved for S/U grading only.
Second Language Studies

Second Language Acquisition and Teacher Education (SLATE)
Director: Rakesh Bhatt
SLATE Office: 4080 FLB, 707 S Mathews, Urbana
slate.lang.uiuc.edu

SLS 435  Neuroling of Bilingualism  credit: 3 OR 4 hours.
Same as EIL 435 and LING 435. See LING 435.

SLS 460  Principles of Language Testing  credit: 3 OR 4 hours.
Same as EIL 460, EPSY 487, FR 460, GER 460, ITAL 460, PORT 460, and SPAN 460. See EIL 460.

SLS 489  Theoretical Foundations of SLA  credit: 3 OR 4 hours.
Same as EIL 489, FR 481, GER 489, ITAL 489, LING 489, PORT 489, and SPAN 489. See EIL 489.

SLS 580  Classroom Lang Acquisition  credit: 4 hours.
Same as EIL 580, FR 580, GER 580, ITAL 580, PORT 580, and SPAN 580. See SPAN 580.

SLS 584  Theories in SLA  credit: 4 hours.
Same as CI 584, EALC 584, EIL 584, EPSY 563, FR 584, GER 584, ITAL 584, LING 584, PORT 584, SPAN 584. See SPAN 584.

SLS 588  Sem Second Lang Learn  credit: 4 hours.
Same as EALC 588, EIL 590, FR 588, GER 588, ITAL 588, LING 588, PORT 588, and SPAN 588. See SPAN 588.
Sanskrit

Linguistics
Head of Department: Elabbas Benmamoun
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3563
wwwLINGUISTICS.UIUC.EDU

SNSK 199  Undergraduate Open Seminar credit: 1 TO 5 hours.
May be repeated.

SNSK 201  Elementary Sanskrit I credit: 4 hours.
Introduction to Sanskrit, treating in full the grammar of the language as preparation for reading.

SNSK 202  Elementary Sanskrit II credit: 4 hours.
Continuation of SNSK 201. Prerequisite: SNSK 201.

SNSK 403  Readings in Sanskrit I credit: 3 OR 4 hours.
Introduction to the reading of Sanskrit texts. Same as RLST 412. 3 undergraduate hours. 4 graduate hours. Prerequisite: SNSK 202.

SNSK 404  Readings in Sanskrit II credit: 3 OR 4 hours.
Readings in Sanskrit texts. Topics may vary according to students' needs; they may include religious texts, classical literature, or a general survey of texts. Same as RLST 413. 3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Prerequisite: SNSK 403 and consent of instructor.
SOC 100  **Introduction to Sociology**  credit: 4 hours.
Examination of how societies grow and change; reciprocal effects of economic, political, community, familial, and scientific institutions on each other and on individual life changes; and social conflict, problems of bureaucratic growth and planned and unplanned social change.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

SOC 108  **Religion & Society in West I**  credit: 3 hours.
Same as ANTH 108, PHIL 108, and RLST 108. See RLST 108.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

SOC 109  **Religion & Society in West II**  credit: 3 hours.
Same as ANTH 109, PHIL 109, and RLST 109. See RLST 109.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

SOC 122  **Africa in World Perspective**  credit: 3 hours.
Examination of Africa in the context of the world-economy, with particular attention placed upon enduring cultural and material relationships with Europe and North America.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

SOC 124  **Asian American Cultures**  credit: 3 hours.
Same as AAS 184 and ANTH 184. See ANTH 184.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

SOC 160  **Global Ineq and Social Change**  credit: 3 hours.
Introduces sociological concepts of poverty, inequality, and social change within a global context. Themes explored include basic food security, poverty and hunger; population and resource distribution; foreign aid and development institutions; and social policies and movements for change. Course approach is historical and transnational, and typically includes case studies from Africa, Asia, Latin America, and the United States. This course can be used to fulfill either Western or Nonwestern general education categories, but not both.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences
UIUC: Western Compartv Cult

SOC 162  **Intro to Intl Health Policy**  credit: 3 hours.
Introduces students to international health policy. Students will learn about data sources, basic analytical techniques, and theoretical frameworks for understanding international health policy. From a sociological perspective, students will explore why health issues are essential components to discussion of globalization, immigration, and migration. Students also will learn how health policy and foreign policy decisions in the developed world influence health policy and health care delivery in the developing world.

This course satisfies the General Education Criteria for a:
SOC 179  **Social Organization**  credit: 3 hours.
Beginning with an examination of various examples of organizing, from street gangs to industrial corporations and modern universities,
this course will discuss common patterns in organizational phenomena. Basic conceptual frameworks will be provided in the context of
contemporary and local problems, illustrating the core issues.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

SOC 196  **Issues in Sociology**  credit: 3 hours.
Origin of problems; consequences of ameliorative strategies. Typical topics include crime, mental illness, drug use, suicide, sexual
behavior, violence, and intergroup conflict. May be repeated as topics vary.

SOC 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

SOC 200  **Intro to Sociological Theory**  credit: 3 hours.
Analysis of such classical theorists as Marx, Weber, Durkheim, and Mead and contemporary theorists. Prerequisite: Sophomore
standing.

SOC 201  **Intro to Social Psychology**  credit: 3 hours.
The social context of individual and interpersonal behavior. Observation, experimental, and survey studies of: socialization; language
acquisition and use; sources and changes of self concept; social interaction; emotions; coordination of interpersonal behavior; individual
and interpersonal aggression, violence, and control; and adoption or rejection of innovations through social networks. Credit is not given
for both SOC 201 and PSYC 201. Prerequisite: Sophomore standing.
This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

SOC 220  **Gender Studies Soc Sci**  credit: 3 hours.
Same as GWS 260 and HDFS 260. See GWS 260.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

SOC 221  **Mexican & Latin Am Migration**  credit: 3 hours.
Same as LLS 220. See LLS 220.

SOC 222  **Introduction to Modern Africa**  credit: 3 hours.
Same as AFST 222, ANTH 222, and PS 242. See AFST 222.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures

SOC 223  **Black Women Contemp US Society**  credit: 3 hours.
Same as AFRO 226 and GWS 226. See AFRO 226.

SOC 224  **Asian Am Historical Sociology**  credit: 3 hours.
Explores concepts of colonization, international labor migration, race, nation, assimilation, and class formation through socio-historical
examinations of diverse groups in Hawai'i presently categorized as Asian Americans. Same as AAS 224. Prerequisite: SOC 100 or a
course in Asian American Studies is recommended.
This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

SOC 225  **Race and Ethnicity**  credit: 3 hours.
Sociological and social-psychological analysis of minority groups; illustrative material drawn from representative racial, ethnic, and
status groups. Same as AFRO 225. Prerequisite: SOC 100.

SOC 226  **Political Sociology**  credit: 3 hours.
Study of power relations within and between the state, bureaucracy, community, social classes, and elites in the United States and
other countries.

SOC 227  **Latina/Latinos in Contemp US**  credit: 3 hours.
Examines the incorporation of the major Latina/Latino subgroups into United States society, surveys the major theoretical approaches that have been used in the social sciences to explain majority-Latino relations, and provides an empirical overview of how major social institutions affect the daily lives of Latina/Latinos. Same as LLS 227. Prerequisite: LLS 100 or SOC 100, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

**SOC 229  Religion and Society  credit: 3 hours.**
The social construction and maintenance of religious belief and action; the problem of theodicy; religious anomie and alienation; secularization, modernization, and religious pluralism. Same as RLST 229.

**SOC 249  Sport & Modern Society  credit: 3 hours.**
Same as KIN 249. See KIN 249.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**SOC 250  The Construction of Science  credit: 3 hours.**
What scientists actually do; readings, discussions, and essay projects to develop an understanding of both the technical and social aspects of scientific practice, what is distinctive about science as well as illuminating the interrelation of science with other elements of our culture; includes a cultural analysis of technology. Prerequisite: For students in the Campus Honors Program; others may enroll with the consent of instructor and the Director of the Honors Program.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

**SOC 261  Gender Transnatl Perspective  credit: 3 hours.**
Examines how gender inequality is structured on a transnational level. Emphasis will be placed on the interactive relationship among various countries, and how globalization promotes racial, ethnic, sexual, and national hierarchies among women, in both newly and advanced industrialized countries. Same as GWS 261. Prerequisite: SOC 100, GWS 260, or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**SOC 267  Pan Africanism  credit: 3 hours.**
Same as AFRO 243, AFST 243, and PS 243. See PS 243.

This course satisfies the General Education Criteria for a:
UIUC Non-Western Cultures

**SOC 269  Food, Culture, and Society  credit: 3 hours.**
Same as ANTH 209. See ANTH 209.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**SOC 270  Population Issues  credit: 3 hours.**
Examines the current world population situation; the historical and current patterns of birth, death, migration, marriage, contraception, and abortion; and the world food and energy resources, crowding, and problems of overpopulation. Same as RSOC 270.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**SOC 273  Social Persp on the Family  credit: 3 hours.**
Examines the societal forces shaping aspects of stable and changing family relations in the U. S. and other countries; focuses on social-structural factors affecting marriage, divorce, co-habitation, child-bearing, the division of work and authority, and other features of life. Prerequisite: SOC 100.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

**SOC 274  Intro to Medical Sociology  credit: 3 hours.**
Sociology of health and illness behavior and the social structure of systems which deliver health care services; includes social constraints on illness, the illness role, medical organizations and professions, and the application of the illness model to deviant forms of behavior. Prerequisite: SOC 100.
SOC 275  **Criminology**  credit: 3 hours.
Nature and extent of crime; past and present theories of crime causation; criminal behavior in the United States and abroad, and its relation to personal, structural and cultural conditions; the nature of the criminal justice system and the influences of the exercise of discretion among actors in the criminal justice system. Prerequisite: SOC 100 or equivalent.

SOC 280  **Intro to Social Statistics**  credit: 4 hours.
First course in social statistics for students without mathematics beyond the high school level; topics include the role of statistics in social science inquiry, measures of central tendency and dispersion, simple correlation techniques, contingency analysis, and introduction to statistical inference; includes the statistical analysis of social science data using personal computers. Same as GEOG 280. Students may not receive credit for SOC 280 if they have already received credit for a college level introductory statistics course.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

SOC 300  **Attitude Theory and Change**  credit: 3 hours.
Same as MS 352 and PSYC 352. See PSYC 352.

SOC 320  **Intro to Queer Studies**  credit: 3 hours.
Same as GWS 370. See GWS 370.

SOC 321  **Gender & Latina/o Migration**  credit: 3 hours.
Same as LLS 320 and GWS 320. See LLS 320.

SOC 322  **Gender, Relationships & Society**  credit: 3 hours.
Same as GWS 340 and HDFS 340. See HDFS 340.

SOC 325  **Black Men and Masculinities**  credit: 3 hours.
Same as AFRO 342. See AFRO 342.

SOC 328  **Asian Americans & Inequalities**  credit: 3 hours.
An examination of various forms of social inequality between Asian Americans and other groups as well as among Asian Americans, including those based on race, gender, class, citizenship and sexuality. Same as AAS 328. Prerequisite: SOC 100 and/or AAS 100 are recommended.

SOC 350  **Technology and Society**  credit: 3 hours.
Examines the social and cultural origins of modern technology and technological innovation; the effects of technology and its change on society. Topics include the impact of technology on beliefs and values, accommodation and resistance to change, and technology and the Third World.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

SOC 351  **Social Aspects of Media**  credit: 3 hours.
Same as MS 351. See MS 351.

SOC 364  **Impacts of Globalization**  credit: 3 hours.
Introduces sociological theory and research on globalization, in debate with the literature on modernization, world-systems, and development/underdevelopment. Explores recent economic, political, and cultural change at macro-sociological level. Themes include: global governance and world society, global diffusion of American culture, global capitalism, and new forms of social resistance. Prerequisite: SOC 100 or consent of instructor.

SOC 365  **Contemporary Korean Society**  credit: 3 hours.
Same as EALC 365. See EALC 365.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

SOC 366  **Postsocialism Eastern Europe**  credit: 3 hours.
Examines the sociological realities of state socialism and postsocialism in Eastern Europe and the former Soviet Union. Prerequisite: SOC 100 or HIST 142, or PS 100, or any REES course.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: Western Compartv Cult

SOC 367  **Globalization Dynamics Debates**  credit: 3 hours.
Study of the multidimensional character of globalization. Discussion of key processes of globalization and areas of consensus and controversy in the literature, including major current controversies such as are we headed for a global monoculture; what is the relationship between globalization and neoliberal capitalism; which trend is more significant, globalization or empire? Discussions on scenarios and policy options of global futures.

SOC 368  **Euro Thght & Soc Since 1789**  credit: 3 hours.
Same as HIST 361. See HIST 361.

SOC 373  **Social Stratification**  credit: 3 hours.
Inequities in power, prestige, income, privilege, and lifestyles in the United States and other countries; class and status as determinants of group interests, ideologies, and interaction; and effects of social change and mobility. Prerequisite: SOC 100.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

SOC 375  **Community**  credit: 3 hours.
Sociological analyses of community, focussing on the social composition, dynamics, uses, value systems, and other cultural features and collective action processes of various community types. The modern and continuing transformation of communities, including disintegration, social construction, and intentional formation, as well as persistence. Students do a small-scale community study. An intensive writing course. Prerequisite: Completion of campus Composition I general education requirement; SOC 100.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

SOC 380  **Social Research Methods**  credit: 4 hours.
Introduction to the foundations of social research and to the major types of research methods employed in sociology. Provides exposure to the major tools and terminology of social research, including the use of computers in sociology. Topics include: research design, finding and using sociology literature, measurement, sampling, survey research, field methods, use of available data, quantitative data analysis and presentation, and computer resources for research. Prerequisite: SOC 100 and SOC 280.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

SOC 382  **Lab Meth in Soc Psych**  credit: 4 hours.
Same as PSYC 332. See PSYC 332.

SOC 390  **Individual Study**  credit: 1 TO 6 hours.
Individual study or research project. May be repeated. Prerequisite: Six hours of sociology; written consent of instructor on form available in 340 Lincoln Hall.

SOC 392  **Chicanas&Latinas: Self&Society**  credit: 3 hours.
Same as GWS 392 and LLS 392. See LLS 392.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

SOC 396  **Special Topics in Sociology**  credit: 3 hours.
May be repeated if topics vary. Prerequisite: SOC 100 and consent of instructor.

SOC 400  **Internships**  credit: 0 TO 3 hours.
Selected internship opportunities in which student and faculty member develop a program of study and research related to internship. Consult departmental undergraduate advisor. May be repeated to a maximum of 6 hours. 0 to 3 undergraduate hours. Approved for both letter and S/U grading. Prerequisite: Junior or senior standing; SOC 100, and six additional hours in Sociology or acceptance of faculty member and Director of Undergraduate Studies.

SOC 420  **Sociology of Education**  credit: 2 hours.
Same as EPS 420. See EPS 420.

SOC 421  **Racial and Ethnic Families**  credit: 2 hours.
Same as AFRO 421, EPS 421, and HDFS 424. See EPS 421.

SOC 422  **European Working Class History**  credit: 2 TO 4 hours.
Same as HIST 450 and LIR 450. See HIST 450.

SOC 423  Gender Stratification  credit: 3 OR 4 hours.
Integrates sociological and feminist theories of stratification by first critiquing mainstream stratification literature and discussing the inadequacies of subsequent approaches, then comparing and contrasting various feminist perspectives on the links between work, family, and the state. Students will identify potential sources of gender bias within specific social institutions. 3 undergraduate hours. 4 graduate hours.

SOC 426  Race, Ed Pol, and Soc Science  credit: 3 OR 4 hours.
Examination of the origins and development of sociology as a discipline, as related to the sociology of education, and the reproduction of social and racial inequality. The course focuses on four issues: the production of racial inequality in social scientific knowledge, the role that social science plays in reproducing societal patterns of race, class, and gender inequality, the development of sociology and education in the United States and Africa, and the development of American social science and the reproduction of global inequality. Same as EPS 422. 3 undergraduate hours. 4 graduate hours. Prerequisite: SOC 100 or consent of instructor.

SOC 427  Latin Amer Social Pol Inst  credit: 2 OR 4 hours.
Class structures, family, kinship, religious, economic, and political institutions; trends in urbanization, ecological organization, and population. 3 undergraduate hours. 2 or 4 graduate hours.

SOC 447  Environmental Sociology  credit: 3 OR 4 hours.
Examines the origins and modern consequences of environmental alteration and pollution and resource limitations on human populations in the context of various social change theories. Explores the environmental movement, population explosion, the "limits to growth debate," and the impacts of environmental change on food production, land, and water quality. Same as ENVS 447 and RSOC 447. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: SOC 100, RSOC 110, or equivalent; and SOC 380 or equivalent; or consent of instructor.

SOC 456  Soc of Scientific Knowledge  credit: 3 OR 4 hours.
Sociological analysis of the production, evaluation, the impact of social interests on the development of scientific knowledge, Kuhn's analysis of science, the social shaping of technology, the rationality debate. 3 undergraduate hours. 4 graduate hours. Prerequisite: SOC 200 or SOC 350, or consent of instructor.

SOC 457  Sociology of Technology  credit: 3 OR 4 hours.
Explores important contemporary perspectives on the nature of technoscience (science-based technology), its origins and patterns of development, and the distinctive social forms within which it is embedded. 3 undergraduate hours. 4 graduate hours. Prerequisite: SOC 200 or SOC 350, or consent of instructor.

SOC 462  Global Racial Stratification  credit: 3 OR 4 hours.
Examines the social construction of racial consciousness and communities as a global process. Moves from the creation of a Black/White global divide with slavery and colonialism to contemporary stratification, identity, and movements. 3 undergraduate hours. 4 graduate hours. Prerequisite: SOC 225 or consent of instructor.

SOC 463  Social Change in Dev Areas  credit: 3 hours.
Same as RSOC 443. See RSOC 443.

SOC 464  Comm in Env Social Movements  credit: 3 hours.
Same as AGCM 430, ENVS 430, and NRES 430. See AGCM 430.

SOC 466  New Modernities South  credit: 3 OR 4 hours.
Examination of how nonwestern societies, such as Japan, China, India, the Islamic world, Africa and Latin America, analyze their modernity. The study of modernity and the idea of multiple modernities by combining and contrasting western and nonwestern views of modernity, postmodernity and capitalism. 3 undergraduate hours. 4 graduate hours. Prerequisite: Introductory course in social science or SOC 100 or consent of instructor.

SOC 467  Power and Empowerment  credit: 3 OR 4 hours.
Focus on different forms and understandings of power and empowerment over time. As practices and understandings of power change, perspectives on and strategies for empowerment change likewise. Since empowerment is central to current social thinking a critical understanding of empowerment is crucial. The approach is historical, comparative and transnational. By examining theories of collective action the course provides analytical foundation and depth to understanding social change. 3 undergraduate hours. 4 graduate hours. Prerequisite: SOC 100.

SOC 470  Social Movements  credit: 2 TO 4 hours.
Origins and development of groups in promoting and resisting change, resource mobilization, strategies and tactics, individual and social consequences. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: SOC 100 or six hours of anthropology, social geography, political science, or sociology.

SOC 471  **Crowds and Collective Action**  credit: 3 OR 4 hours.
Contemporary theory and research on the life course of temporary gatherings, including religious, sport, political, and selected other social gatherings. Assembling and dispersing processes, and recurring forms of collective action within the intervening gatherings. Planning, mobilization, coordination, and social control of complex gatherings. Consequences of gatherings for participants and society. 3 undergraduate hours. 4 graduate hours. Prerequisite: SOC 380 or equivalent, SOC 377; or consent of instructor.

SOC 474  **Population Trends and Patterns**  credit: 3 OR 4 hours.
Introduction to contemporary demographic patterns and their historical development; transition theory and other models of demographic change; components of population growth and distribution; and trends and differentials in mortality and fertility. 3 undergraduate hours. 4 graduate hours. Prerequisite: SOC 270 and SOC 380, or consent of instructor.

SOC 475  **Human Rights**  credit: 2 TO 4 hours.
Examines the idea of human rights: human rights in liberal democracies, especially in the United States; in pre-industrial societies; in totalitarian states. Studies human rights and cultural evolution; justification of human rights. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: SOC 100 or consent of instructor.

SOC 476  **Organization of Health Care**  credit: 2 TO 4 hours.
Same as CHLH 456. See CHLH 456.

SOC 477  **Sociology of Law**  credit: 2 TO 4 hours.
Social origins and consequences of law and legal process, emphasizing problems of legal change and structure and function of legal sanctions. Law and law-like phenomena in primitive and modern societies. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: SOC 100 or six hours of anthropology, social geography, political science, or sociology.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

SOC 478  **Geography of Health Care**  credit: 3 OR 4 hours.
Same as GEOG 438. See GEOG 438.

SOC 479  **Sociology of Sport**  credit: 3 OR 4 hours.
Same as KIN 449. See KIN 449.

SOC 480  **Methods of Field Research**  credit: 2 TO 4 hours.
Instruction, training, and supervised practice in methods of field research as a basic tool of sociology; emphasis on the role of the field researcher as participant, observer, and interviewer in various kinds of research settings, and on approaches to and applications of field data. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: SOC 380 or consent of instructor.

SOC 481  **Survey Research**  credit: 3 OR 4 hours.
Principles and applications of social science survey research methods; class project designing and conducting a sample survey; training and experience in analysis of survey data; sampling, questionnaire construction, interviewing and data reduction, and file management; and direct use of the computer in survey data analysis. 3 undergraduate hours. 4 graduate hours. Prerequisite: SOC 380 or consent of instructor.

SOC 482  **Ethnography of Local Cultures**  credit: 4 hours.
Same as ANTH 464 and EPSY 465. See EPSY 465.

SOC 485  **Intermediate Social Statistics**  credit: 3 OR 4 hours.
Intermediate course in the theory and application of statistical methods to social science data. Coverage includes overviews of measurement issues, the logic of hypothesis testing and estimation, the general linear model, one-way analysis of variance, correlation and regression. The core of the course is multiple regression analysis and its extensions. Topics include dummy variable analysis, statistical interaction, model assumptions and violations, non-linear and logistic regression, and an introduction to path analysis. Emphasis on the application of statistical computing packages (e.g. SPSS) and the substantive interpretation of results. 3 undergraduate hours. 4 graduate hours. Students may not receive credit for both this course and another course with a primary focus on applied multiple regression analysis such as ECON 203, STAT 420, or PSYC 406. Graduate students must incorporate research literature involving statistical analysis from their discipline into their assignments and class discussions. Prerequisite: SOC 280 or equivalent.

SOC 488  **Demographic Methods**  credit: 3 OR 4 hours.
Introduction to statistical and mathematical procedures in population analysis; the gathering, processing, and evaluating of registration and census data; the life table model; and procedures of mortality and fertility analysis and population projections. 3 undergraduate hours. 4 graduate hours. Prerequisite: SOC 380 and either SOC 274 or SOC 270, or consent of instructor.

This course satisfies the General Education Criteria for:
UIUC: Quant Reasoning II

SOC 490  Advanced Independent Study  credit: 3 hours.
3 undergraduate hours. May be repeated. Prerequisite: Open only to seniors in the sociology major who have an overall GPA of 3.3 or higher and therefore may be eligible for departmental distinction; obtain written consent of instructor on form available in 340 Lincoln Hall.

SOC 495  Senior Honors Seminar  credit: 3 hours.
Intensive scrutiny of current literature on one selected topic. Critical reading and discussion followed by writing essays and research proposals. Subject will shift yearly. There may be community work as an aspect of this course; consult the Class Schedule for details. 3 undergraduate hours. No graduate credit. May be repeated to a maximum of 6 hours. Prerequisite: For sociology majors only. Student must have at least 3.5 grade-point average in sociology courses and consent of instructor.

SOC 496  Advanced Special Topics  credit: 3 hours.
May be repeated if topics vary. 3 undergraduate hours. No graduate credit. Prerequisite: SOC 100 or six hours of anthropology, social geography, political science, or sociology.

SOC 500  Classical Sociological Theory  credit: 4 hours.
Analysis of major classical sociological theorists of the nineteenth and early twentieth centuries, stressing the social, historical, and philosophic foundations of sociological theory; primary emphasis on Marx, Durkheim, and Weber. Prerequisite: SOC 200 or equivalent.

SOC 501  Contemp Sociological Theory  credit: 4 hours.
Major theorists and schools of thought since World War I with emphasis on the contemporary period; includes functionalism, exchange theory, conflict theory, symbolic interaction, and phenomenology. Prerequisite: SOC 500 or equivalent.

SOC 505  Seminars in Sociology  credit: 1 hours.
Provides Sociology graduate students the opportunity to attend and discuss presentations in department and campus seminars. Approved for S/U grading only. May be repeated to a maximum of 4 hours in separate terms. Prerequisite: Graduate standing in Sociology and consent of the Director of Graduate Studies.

SOC 510  Professionalization Seminar  credit: 2 hours.
Introduction to the graduate program in Sociology and to graduate study in the discipline of Sociology. Approved for S/U grading only. May be repeated in separate terms to a maximum of 4 hours. Prerequisite: Graduate standing in Sociology and consent of the Director of Graduate Studies.

SOC 520  Fem Research Soc Sci  credit: 4 hours.
Same as GWS 570. See GWS 570.

SOC 521  Sociology of Race and Racism  credit: 4 hours.
Examination of the social construction of race and racism, in various cultural contexts and historical moments and in relation to various groups and research problems.

SOC 545  Sociology of Leisure  credit: 4 hours.
Same as RST 545. See RST 545.

SOC 560  Globalization Dynamics Debates  credit: 4 hours.
An advanced study of the multidimensional character of globalization. Discussion of key processes of globalization and areas of consensus and controversy in the literature and examination of the premises of major approaches to globalization in social science and fundamental analytical questions and policy dilemmas that globalization presents. Discussions on scenarios and policy options of global futures.

SOC 561  Development Theories  credit: 4 hours.
Discussion of major trends in development thinking and policy, and development theories from the classics in political economy through modernization theory, dependency, alternative development, neoliberalism, human development and post-development. Addresses ongoing challenges and debates such as globalization and democratization, and trends in social science, such as discourse analysis. Enables participants to assess development theories in a historical context and from the viewpoint of sociology of development knowledge.

SOC 562  Sem in Transnational Studies  credit: 4 hours.
Intensive study of a selected area in transnational sociology, e.g., diasporas, global political economy, global environmental studies, transnational racial stratification, etc. May be repeated in the same or separate terms to a maximum of 8 hours as topics vary. Prerequisite: Consent of instructor.

**SOC 563  Seminar in Economic Sociology**  credit: 3 hours.
Critical review of a range of theoretical and substantive issues at the frontiers of contemporary thinking about economic sociology through a close reading of primary works. In particular, it focuses on the key idea of "embeddedness," which refers to the connections between economic behavior and social structures and processes, and develops it by exploring various ways they connect with each other. Prerequisite: SOC 485 or equivalent.

**SOC 570  Sem in Sci, Tech, Info and Med**  credit: 4 hours.
Major issues and perspectives in social studies of science and technology, including information technology and medicine. Same as HIST 506.

**SOC 571  Demography and Human Ecology**  credit: 4 hours.
Classic and contemporary issues and perspectives in demography and human ecology, emphasizing the relationship between demographic phenomena and social life and on the ecological approach to social organization; demographic change, analytic methods in demography, fertility, mortality, and migration; new research developments. Prerequisite: Consent of instructor.

**SOC 572  Community In American Society**  credit: 4 hours.
Same as HCD 533 and UP 533. See HCD 533.

**SOC 573  Social Psychology**  credit: 4 hours.
Development of social psychology; contemporary theoretical and methodological perspectives; selected areas of research. Prerequisite: Consent of instructor.

**SOC 574  Community Studies Theory**  credit: 4 hours.
Same as HCD 531 and UP 517. See HCD 531.

**SOC 575  Founds of Organizational Behav**  credit: 4 hours.
Same as BADM 510, PS 514, and PSYC 553. See BADM 510.

**SOC 576  Survey Methods in Mkt Res**  credit: 4 hours.
Same as BADM 531. See BADM 531.

**SOC 577  Sampling Hum Popul and Soc Org**  credit: 4 hours.
Same as BADM 535 and PSYC 585. See BADM 535.

**SOC 578  Ethnography Urban Communities**  credit: 4 hours.
Same as AFRO 552 and HCD 543. See AFRO 552.

**SOC 579  Categorical Data in Ed/Psyc**  credit: 4 hours.
Same as EPSY 589 and PSYC 589. See EPSY 589.

**SOC 580  Advanced Interpretive Methods**  credit: 4 hours.
Analysis of social interaction based on the social psychology of C. H. Cooley, G. H. Mead, and W. I. Thomas; presentation of problems of theory, concepts, and method. Same as MDIA 580. Prerequisite: 4 hours graduate credit in sociology.

**SOC 581  Survey Research Methods I**  credit: 4 hours.
Advanced course in the design of social surveys and collection of social survey data; covers stages from questionnaire construction to preparing data for statistical analysis; issues in survey design involving cross-national, longitudinal and multi-group research. Prerequisite: SOC 485 or equivalent.

**SOC 582  Survey Research Methods II**  credit: 4 hours.
Laboratory course in survey research methods to provide students with advanced training and experience in problem formulation and computerized data analysis using statistical packages, e.g., SPSS; under staff guidance, a student will select a topic and write a professional-level paper. Three to ten hours of laboratory time per week.

**SOC 583  Qualitative Research Methods**  credit: 4 hours.
Introduction to field and qualitative methods in social science research, in terms of both the practical issues of conducting this type of research and the conceptual debates in the field. Methods include interviewing, participant observation, unobtrusive observation, historical/archival methods, and global ethnography.
SOC 584  **Multivar Anlys in Psych and Ed**  credit: 4 hours.
Same as EPSY 584 and PSYC 594. See PSYC 594.

SOC 586  **Adv Social Statistics I**  credit: 4 hours.
Examines social science applications of the general linear model and its extensions; topics include: model specification; ordinary and generalized least squares; multicollinearity; selection of predictors; interaction of variables and non-linear regression; panel and time-series data; measurement error; path analysis; recursive and non-recursive structural equation models. Applies statistical computing packages (e.g., SPSS) to social science data. Students may not receive credit for both SOC 586 and PSYC 406. Prerequisite: SOC 485 or equivalent.

SOC 587  **Adv Social Statistics II**  credit: 4 hours.
Examines social science applications of discrete and continuous multivariate analysis; topics include: analysis of categorical data (loglinear modelling, probit analysis, etc.); geometric interpretation of matrices; factor analysis and index construction; canonical analysis; discriminant analysis; unobserved variables and structural equation models; issues in model specification and estimation. Applies statistical computing programs such as ECTA and LISREL to social science data. Students may not receive credit for both SOC 587 and PSYC 407. Prerequisite: SOC 586 or equivalent.

SOC 588  **Covar Struct and Factor Models**  credit: 4 hours.
Same as EPSY 588, PSYC 588, and STAT 588. See PSYC 588.

SOC 589  **Psych Scaling Multidimen Meth**  credit: 4 hours.
Same as PSYC 509. See PSYC 509.

SOC 590  **Individual Topics in Sociology**  credit: 1 TO 8 hours.
Supervised individual investigation or study of a topic not covered by regular courses; topic selected by the student and the proposed plan of study must be approved by the adviser and the staff member who supervises the work. May be repeated. Approved for both letter and S/U grading.

SOC 596  **Recent Developments in Soc**  credit: 4 hours.
Intensive study of selected topics based on contemporary works of major importance in the development of sociological theory. May be repeated if topics vary.

SOC 597  **Readings in Sociology**  credit: 2 TO 12 hours.
Individual guidance in intensive readings in the literature of one or more subdivisions of the field of sociology, selected in consultation with the student's advisor, in preparation for the specialization examination. Approved for S/U grading only. May be repeated in separate terms to a maximum of 12 hours. Prerequisite: Graduate standing in Sociology and consent of advisor.

SOC 598  **Thesis Proposal**  credit: 2 TO 12 hours.
Individual guidance in designing a doctoral research project and writing a thesis proposal. Focuses on developing a cogent theoretical framework, articulating significance of the project, identifying appropriate research methods, and considering ethical issues. Approved for S/U grading only. May be repeated in the same or separate terms to a maximum of 12 hours. Prerequisite: Graduate standing in Sociology and consent of advisor.

SOC 599  **Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only. Prerequisite: SOC 598.
SOCW 199  **Undergraduate Open Seminar**  credit: 1 TO 4 hours.
May be repeated. Approved for both letter and S/U grading.

SOCW 200  **Introduction to Social Work**  credit: 3 hours.
Broad survey of the field of social work; introduction to social services, social welfare organizations, major social problems and target population groups, and the methods used in working with individuals, groups, and communities; includes the range of personnel and skills in social work agencies, and the means of education and training for social work professionals.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences

SOCW 397  **Asian Families in America**  credit: 3 hours.
Offers a comparative analysis of Asian families as they cope and adapt to American society. Examines: 1) how families from four major Asian-American groups (Chinese, Indian, Japanese and Korean) function in American society; 2) how these families compare to families in their country of origin; and 3) how these families are similar to or different from the 'typical American' family. Includes visits to Asian cultural institutions and with Asian families. Same as AAS 397 and HDFS 321.

This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

SOCW 400  **Generalist SW Practice Methods**  credit: 4 hours.
Foundation methods course that is a prerequisite for all advanced methods courses. Overview of generalist social work practice and intervention with individuals, groups, organizations and communities; introduction to core concepts, value base and ethical principles of the profession. Emphasis is given to the bio-ecological framework, person-in-environment and systems theory. Skills in developing beginning professional relationships are addressed via a skills lab component. Students begin the process of professional self-awareness to begin to identify how the personal values and beliefs they hold impact upon their interactions. Prerequisite: Admission to MSW program.

SOCW 410  **Social Welfare Pol and Svcs**  credit: 4 hours.
Examination of social welfare within a historical context, addressing the economic, political, social and ideological influences that have shaped the social welfare system and programs. Critical study of the income maintenance system in the United States as a response to the problems of inequality of opportunity and income, poverty, and income security; consideration of alternative approaches with discussion of the social worker's role in the system.

SOCW 412  **Hispanics in the U.S.**  credit: 3 OR 4 hours.
Hispanics constitute a growing population in the United States. The size and heterogeneity of Hispanics raises complex issues in crafting public policy and in designing and delivering social services. This course offers an extensive portrait of Hispanics in the United States. Students will explore questions and demographic characteristics, language and religious practices, education, criminal justice, neighborhood and economic restructuring, immigration, social service systems, and community action in the context of creating an effective public policy agenda. Same as LLS 412.

SOCW 415  **Social Services for the Aged**  credit: 4 hours.
Focus on the aging process, special needs of older adults, and the role of social work in addressing these needs. All levels of social work intervention are considered, including direct work with older persons and their families, service delivery systems in local communities, and state and national policies. Special consideration is given to older women and older persons of color. Prerequisite: Admission to MSW program or consent of instructor.

SOCW 418  **Independent Study**  credit: 4 hours.
Independent study of a topic of special interest in the field of social work. Prerequisite: Consent of instructor.

SOCW 420  **Subst Use in Social Context**  credit: 4 hours.
Introduces students to the problem of substance abuse and its impact on society. Examines the physiological, psychological, social, and cultural aspects of substance abuse. At the individual and familial levels, the course examines the causes, development,
prevention, and treatment of substance abuse. At the societal level, the course examines public policy efforts to regular and control substance use from both historical and contemporary perspective. Implications for social and economic justice are also examined. Approved for both letter and S/U grading. Prerequisite: Admission to MSW program or consent of instructor.

**SOCW 427 Social Work Research Methods** credit: 4 hours.
Basic principles of social science research and importance for social work practice: overview of research principles including the stages of a research project, design of research; quantitative and qualitative methodologies, design of questionnaires, methods of data collection and preparation of reports. Introduction to various research designs such as the survey, program evaluation, single subject design, quasi-experiments, and experimental design. Enrollment preference given to students in the MSW program.

**SOCW 451 HBSE I: Human Development** credit: 4 hours.
Examination of the major theories that inform social work's understanding of human behavior in a variety of social contexts. A bi-ecological systems framework, together with a developmental approach in understanding the ways in which individuals, families, groups, organizations, institutions, and communities interact, is presented. Issues of gender, race, ethnicity, socioeconomic status, disability and sexual orientation are introduced so students can gain understanding of how these components affect and influence development across the lifespan. Enrollment preference given to students in the MSW program.

**SOCW 457 Health Planning** credit: 3 hours.
Same as CHLH 457. See CHLH 457.

**SOCW 500 SW Practice with Indiv and Fam** credit: 4 hours.
Systematically and critically examines the theory, procedures, and techniques of selected practice models within four main approaches to social work: cognitive-behavioral, systemic (family and ecological systems; crisis intervention), task-centered, and radical-structural (structural; feminist). Uses selected criteria to analyze and assess those models, examines outcome research, and identifies current practice issues. Prerequisite: SOCW 400.

**SOCW 501 SW Practice with Groups** credit: 4 hours.
Social work practice theory in social group work through comparative study of various practice approaches and research about those approaches, including the use of group work method in contemporary social work practice, practice principles, and the use of group process as applied in the student's area of specialization. Looks at group work for children, adolescents, and adults considering developmental and environmental issues; also includes investigation of practice strategies and models of group therapy and task group leadership across diverse populations. Prerequisite: SOCW 400.

**SOCW 504 Substance Abuse Trt in S W** credit: 4 hours.
Introduces selected counseling approaches for substance use disorders. Begins with an overview of the causes of substance use disorders, assessment, diagnosis, and treatment planning. Focuses on treatment theories and techniques applied to counseling substance abusers. Selected theories include 12 Step approaches, cognitive and behavioral theories, family systems theory, harm reduction, and motivational interviewing. Special attention is devoted to apply substance abuse treatment models with diverse populations. Prerequisite: SOCW 500 (may be taken concurrently).

**SOCW 505 Behav and Cogn Methods for SW** credit: 4 hours.
Students are introduced to brief behavioral and cognitive methods for treating a wide range of human problems, crises, and mental disorders. Content includes: (1) conceptualizing and assessing client problems; (2) identifying appropriate treatment goals; (3) developing comprehensive and differential treatment plans; (4) conducting brief interventions; and (5) evaluating client outcomes using research, consultation, and supervision.

**SOCW 506 SW Practice with Child/Adol** credit: 4 hours.
Examination and critical evaluation of selected methods/approaches of intervention; research on their effectiveness and application to specific problems of children and adolescents that come to the attention of social workers and other helping professionals; attention given to remediation and prevention. The course provides opportunities for students to develop skills through participation in a service learning project. Prerequisite: SOCW 400.

**SOCW 507 School Social Work Practice** credit: 4 hours.
Examination of the design and delivery of school social work interventions with special emphasis given to students with physical/mental disabilities and vulnerable populations. Course content provides a foundation for the development of a comprehensive and in-depth understanding of an ecological systems approach to social work practice based upon a foundation of professional values and ethics. Prerequisite: SOCW 400.

**SOCW 508 Family Therapy Seminar** credit: 4 hours.
Advanced seminar providing in-depth exposure to the principles, values, ethics, issues and practice of family therapy in social work. Focuses on family therapy process, the practitioner role, issues in assessment, intervention and evaluation; how discrimination and oppression impact intervention strategies; skills that advance social and economic justice; presentation of cases; use of supervision...
and consultation, and family therapy with diverse populations. Combines lecture/discussion with taped observations of noted family therapists and participation in a family therapy practicum. Prerequisite: SOCW 500.

**SOCW 509  Adv Clin Assess & Interviewing**  credit: 4 hours.
Advanced practice class designed to enhance students' understanding of clinical assessment and interviewing methods. Includes methods for therapeutically intervening with clients who are highly distressed, angry or agitated, resistant or involuntarily mandated for treatment, experiencing severe symptoms, or who have unique and complex problems. Clinical interviewing skills taught in this class will build upon knowledge and skills acquired in previous direct practice classes. Prerequisite: SOCW 552 (may be taken concurrently) and SOCW 500.

**SOCW 513  Delivery of Health Care**  credit: 4 hours.
Delivery of health care in the United States is examined from a multidisciplinary perspective including social, cultural, political, economic, ethical and legal issues. Health care services are described in relation to various definitions of health, health status and access to care. Current problems and issues in health care including government responsibility and source of authority, policy development and analysis, proposals for reforms, and financing and cost containment are discussed and analyzed. Prerequisite: Admission to MSW program or consent of instructor.

**SOCW 514  Mental Health Pol and Svcs**  credit: 4 hours.
Examination of comprehensive community mental health services as they evolve from definitions of the problems and changes in federal and state social policy; the concept of normalization and its criteria for program evaluation; and changing roles of mental health professionals, paraprofessionals, and consumers in policy making and service delivery. Presents the history of mental health policy and services in the U.S.; current policies and activities of the mental health delivery system are critically analyzed. Prerequisite: SOCW 410.

**SOCW 516  Child, Youth and Family Svcs**  credit: 4 hours.
Examines a range of direct service and public policy issues that social workers encounter when working with vulnerable children, adolescents, and families. Focuses particular attention on the families involved with child protection. Addresses the following questions: What factors help explain the etiology of violence and neglect in the family home? Once vulnerable families are identified and become involved with social service agencies, what interventions are most effective with regard to decreasing risks and strengthening protective factors? How can social service systems best prepare vulnerable adolescent for the transition to adulthood? Prerequisite: SOCW 410.

**SOCW 519  Public School Policy/Services**  credit: 4 hours.
Presents content on children with physical and mental disabilities, educational policies related to vulnerable populations, and federal and state legislation, with particular emphasis given to the Individuals with Disabilities Act (IDEA). The following topics are highlighted: eligibility requirements, general characteristics of the disabling conditions, education as a continuum from early childhood to adulthood, school finance, and current educational issues. Content is presented pertaining to meeting the needs of exceptional children, students with other special needs, and their families in public schools and the community. Prerequisite: SOCW 410.

**SOCW 520  Social Welfare Planning**  credit: 4 hours.
Introduces students to the theory and practice of social welfare planning. The course is designed to help students apply concepts and methods to their specific social work fields of interest. Content includes a review of policy analysis, needs assessment, establishing goals and objectives, program design, budgeting, management information systems, and program evaluation. Prerequisite: Admission to MSW program or consent of instructor.

**SOCW 521  Leadership and Social Change**  credit: 4 hours.
Introduces MSW students to a broad range of strategies for creating social change. Several overarching concepts that are useful in undertaking a wide range of social change efforts are introduced. These concepts are applied to different change strategies. This includes attention to the role of leadership in social change, as the quality of leadership is critical to the success of most social change efforts. The importance of policy or social entrepreneurs in creating social change will also be examined. These entrepreneurs play critical roles by both identifying and implementing new ideas and by diffusing them on a wider scale after initial experimentation. Finally, social workers often tend to be uninformed about sound business practices as they engage in social change efforts, yet knowledge of basic business concepts can be critical to the success or failure of a social venture. Therefore, the course addresses issues such as opportunity recognition and risk assessment, sustainability and scalability of projects, and attention to both fiscal management and outcome accountability. Prerequisite: SOCW 400 or by consent of instructor for non Social Work majors.

**SOCW 522  SW Practice with Communities**  credit: 4 hours.
Examines principles and methods that characterize identifiable approaches used in community organization practice at neighborhood, community, state, and other levels. This course is an in-depth study of how citizens can organize. Questions discussed include: What institutions aid communities in their organizing and self-improvement efforts? What circumstances encourage the erosion of civil society, civic involvement, and community institutions? What role should the social worker and the human service or social service agency play in organizing communities? Prerequisite: SOCW 400.

**SOCW 525  Supervision/Staff Development**  credit: 4 hours.
Course focuses on the acquisition of the essential knowledge and skills needed to work with people to achieve desired client outcomes. Includes management and organizational theories, and research and theory regarding the practice of supervision. Addresses understanding of the agency context and purposes, interpersonal insights and skills, the importance of procedural and technical expertise, communication skills, mastery of the functions of management and leadership ability. Examines supervisory process in terms of interpersonal sensitivity and interaction skills including influence techniques. Prerequisite: Admission to MSW program or consent of instructor.

**SOCW 526  Social Welfare Administration**  credit: 4 hours.
Focus on the design, administration and management of social programs from a social work perspective. Content includes: principles and process of administration and management, history of social welfare administration and how this relates to the design of current programs, review of administration Organizational and leadership theories, policy formulation, agency structure, staff organization, budgeting and evaluation of management practice. Prerequisite: Admission to MSW program or consent of instructor.

**SOCW 531  Practice in Org Settings**  credit: 4 hours.
Integration of classroom theories and concepts of social work practice with experience in field practicum settings. Critical analysis of social work practice in the various specialization arenas. Attention given to agency’s target population and clients, environment and organization structure, functions, task definitions, monitoring and planning mechanisms and methods of service delivery. Section for school social work students contains content related to meeting the needs of exceptional children in the public school and their families. Prerequisite: Concurrent registration in SOCW 568.

**SOCW 532  Practice Evaluation**  credit: 4 hours.
Examines program evaluation and quality management in the social work setting. Focuses on evaluation of social work practice within service delivery organizations. Students learn to define practice problems; operationalize goals and objectives; develop hypotheses; describe and analyze interventions; critique organizational practices; utilize outcome evaluation measurements in relation to policy and practices, and review and summarize literature. Students are expected to describe, analyze, and evaluate core elements of an agency’s delivery system. Prerequisite: SOCW 531; concurrent registration in SOCW 569.

**SOCW 541  Research Seminar**  credit: 4 hours.
Advanced research course that develops skills for evaluating social work practice and/or social service programs through the use of group research designs, survey research methods, qualitative research methods, program evaluation models, and related research techniques. The course assumes students have had previous exposure to both research methods and statistical analyses through the completion of a statistics course and SOCW 427 or an equivalent research course. This course has two types of seminar, one focusing on experimental and survey design, another focusing on program evaluation. Prerequisite: SOCW 427 or equivalent.

**SOCW 551  HBSE II: Women's Issues**  credit: 4 hours.
Extends concepts and theories introduced in SOCW 451 with a focus on women including how cultural belief systems related to gender are instantiated through the differential treatment of females and males in our educational, mental health, social welfare and health care systems; and the consequences of such practices throughout the lifespan. Includes consideration of policies and practices that support women emphasizing issues of special concern to women of color, lesbians, older women, impoverished women and disabled women. Same as GWS 551. Prerequisite: SOCW 451.

**SOCW 552  HBSE II: Mental Disorders**  credit: 4 hours.
Interrelationship of biological, emotional, learning and social aspects of mental disorders, and implications for the patient/client, family, and community. Focus on diagnostic assessment and biopsychosocial treatment methods including psychosocial treatment methods, medications, and social work interventions. Students also learn to recognize the potential for bias that can result when assessments are applied across cultural, ethnic, racial, socioeconomic, gender and other groups. Prerequisite: SOCW 451.

**SOCW 553  HBSE II: Health and Rehab**  credit: 4 hours.
Examines the impact of illness and disability on individuals, their families, and the larger community. The physical, psychological, sociological, educational, vocational. And financial aspects of the most common health conditions are discussed. Emphasis is placed on conceptualizing an effective model of social work practice in medical and rehabilitative settings. Prerequisite: Admission to MSW program or consent of instructor.

**SOCW 554  Social Ent in Diverse Society**  credit: 4 hours.
Examines issues raised by race, ethnicity, and class in the context of a diverse American society so that students may critically analyze the complexity these bring to the creation and implementation of public policy, service delivery, as well as governance and politics. Emphasizes both the processes of critical analysis and principles of social entrepreneurship as important vehicles to bring about sustainable change. Effective social policies and interventions in a diverse society are characterized by a demonstrable reduction of social tensions at the community level as well as increased access to social goods such as adequate housing, safe communities, efficient transportation, affordable health care, quality education, and other public goods and services. Same as HCD 541 and LLS 554. Prerequisite: SOCW 451 or consent of instructor for non Social Work majors.

**SOCW 561  Special Studies in Soc Work I**  credit: 2 TO 8 hours.
Independent or group study in areas of special interest; application of social work principles to special problems or settings. May be repeated in the same or subsequent terms as topics vary. Prerequisite: Consent of instructor.

SOCW 562  **Special Studies in Soc Work II**  credit: 2 TO 8 hours.
Independent or group study in areas of special interest; application of social work principles to special problems or settings. Prerequisite: Consent of instructor.

SOCW 568  **Field Instruction I**  credit: 4 OR 8 hours.
Field Instruction I is the first term of a two-term consecutive (minimum 31-week) field placement. The field practicum is educationally directed and supervised by an approved agency-based field instructor and provides an opportunity to integrate classroom theories, concepts and principles into practice experiences for the development of social work practice skills. Approved for S/U grading only. Prerequisite: Consent of instructor.

SOCW 569  **Field Instruction II**  credit: 8 hours.
Field Instruction II is the second term of a two-term consecutive (minimum 31-week) field placement. Field Instruction II provides a supervised in-depth practice experience in a specialization area of child welfare, community mental health, health care, or school social work. The goal of this practicum is to prepare students for self-directed professional social work practice. Students continue to apply theories and concepts from course work to develop advanced level skills in direct practice with clients and client systems and/or policy, planning and administration. Approved for S/U grading only. Prerequisite: SOCW 568

SOCW 579  **Social Work Practice Theories**  credit: 4 hours.
Presents theories for social work interventions with individuals, families, groups, and communities and organizations; critically analyzes different theoretical frameworks for such interventions; and examines the conceptual links between theory, process, outcome, and evaluations. This course is intended for students in the Ph.D. program in Social Work.

SOCW 580  **Advanced Child Welfare**  credit: 4 hours.
Examines laws, scientific concepts, ethical dilemmas, and new practice directions with respect to protecting children, preserving families, regulating foster care, achieving family permanency, and assisting foster youth in transitioning to independence. Review of legislative, court, and administrative frameworks for promoting these outcomes at the city, state, and federal levels. The course analyzes and critiques historical and contemporary social science, public policy, community organization, and legal advocacy perspectives on child protection and child welfare. Contemporary topics and issues are discussed and debated. Prerequisite: SOCW 516 or consent of instructor.

SOCW 584  **National Soc Welfare Policy I**  credit: 4 hours.
Examines approaches for analyzing social policy development, implementation and advocacy in the United States; and development of skills to become effective policy practitioners. Involves ability to formulate viable policy options as well as skills in advocating for adoption of desired policies. Content includes knowledge about the political processes associated with policy development, the technologies needed to develop policies, communication skills need for policy advocacy, and knowledge in a specialized area. Course builds on policy material presented in SOCW 410.

SOCW 585  **National Soc Welfare Policy II**  credit: 4 hours.
This course is intended for students in the Ph.D. program in Social Work. This seminar focuses on policy research, implementation, and evaluation. Students apply policy analysis skills developed in SOCW 584 by conducting a policy research project on a policy issue of their choice. In addition to the policy research project, seminars include discussions of theoretical and empirical issues related to policy implementation and evaluation. Discussions will address both program administration issues and intergovernmental relations. Prerequisite: SOCW 584 or consent of instructor.

SOCW 589  **Social Work and the Law**  credit: 4 hours.
Examines procedures and issues of special relevance to social work practice; includes legal provisions related to poverty, family development and crises, racial and ethnic minorities, institutionalized persons, crime and delinquency, legal authority of social agencies, and regulation of the profession. Prerequisite: Admission to the MSW program or consent of instructor.

SOCW 593  **Design of Social Work Research**  credit: 4 hours.
Examines procedures and issues of special relevance to social work practice; includes legal provisions related to poverty, family development and crises, racial and ethnic minorities, institutionalized persons, crime and delinquency, legal authority of social agencies, and regulation of the profession. Prerequisite: Admission to the MSW program or consent of instructor.

SOCW 594  **Individual Research**  credit: 4 hours.
Course is designed to enhance the research skills of Doctoral students in social work through research collaboration with a faculty member. May be repeated to a maximum of 8 hours. Prerequisite: SOCW 593.

SOCW 595  **Quantitative Research Designs**  credit: 4 hours.
Provides a doctoral level overview of quantitative designs and conceptual issues in social work research. It presents a framework for structuring the statistical analysis and systematic evaluation of the efficacy and effectiveness of social interventions in achieving desired outcomes for diverse populations. Although the purpose is not to emphasize statistical training, the course will reinforce the learning of basic concepts, mathematical foundations, and assumptions underlying advanced applications of statistical description and causal inference. Prerequisite: Admission to the Ph.D. program.

SOCW 599  **Dissertation Research**  credit: 0 TO 16 hours.
Research and writing of doctoral thesis in social work. May be repeated. Approved for S/U grading only.
Spanish

Spanish, Italian and Portuguese
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SPAN 101  **Elementary Spanish I**  credit: 4 hours.
For students who have no university credit in Spanish.

SPAN 102  **Elementary Spanish II**  credit: 4 hours.
Continuation of SPAN 101. Prerequisite: SPAN 101 at the University of Illinois at Urbana-Champaign. All other second semester Spanish students should enroll in SPAN 122.

SPAN 103  **Intermediate Spanish**  credit: 4 hours.
Continued development of reading, writing and conversational skills. Followed by SPAN 140, SPAN 141 or SPAN 142, this course fulfills the Liberal Arts and Sciences foreign language requirement. Credit is not given for both SPAN 103 and SPAN 125. Prerequisite: SPAN 102 or SPAN 122, or equivalent placement score.

SPAN 122  **Elementary Spanish**  credit: 4 hours.
Second-term Spanish course for all students who did not take SPAN 101 at this University. Prerequisite: SPAN 101 elsewhere or assignment by placement exam.

SPAN 125  **Span for Heritage Speakers I**  credit: 4 hours.
Introduction to Spanish orthography, syntax and vocabulary for students of Hispanic background who have had little or no formal training in the Spanish language. SPAN 125 and SPAN 143, together, fulfill the LAS foreign language requirement. Prerequisite: Consent of instructor.

SPAN 140  **El mundo hispano-americano**  credit: 4 hours.
Introduction to 'Las Americas hispanas' (Mexico, Central and South America, and the Caribbean), their geography, cultures and language varieties. Taught entirely in Spanish, this course seeks to develop students' use of Spanish in an academic context. Recommended for students who plan to major or minor in Spanish. Students may receive a total of 4 hours of credit for SPAN 140, SPAN 141, SPAN 142, and SPAN 143. Prerequisite: SPAN 103 or equivalent.

SPAN 141  **Intro to Spanish Grammar**  credit: 4 hours.
Introduction to the major structures of Spanish, from a linguistic perspective. Taught entirely in Spanish, this course seeks to develop students' formal knowledge of Spanish grammar. Recommended for students who plan to minor or major in Spanish. Students may receive a total of 4 hours of credit for SPAN 140, SPAN 141, SPAN 142, and SPAN 143. Prerequisite: SPAN 103 or equivalent.

SPAN 142  **Spanish in the Professions**  credit: 4 hours.
Introduction to Spanish in business, law/law enforcement, medical, education & social service fields, with a focus on the importance of bilingualism in the U.S., strategies for lifelong learning, and culture considerations. The development of functional use of Spanish within the professional context is the major focus of the course. Recommended for students who want to take SPAN 202. Students who plan to major or minor in Spanish should take SPAN 140 or SPAN 141. Students may receive a total of 4 hours of credit for SPAN 140, SPAN 141, SPAN 142, and SPAN 143. Prerequisite: SPAN 103 or equivalent.

SPAN 143  **Span for Heritage Speakers II**  credit: 4 hours.
Review at the intermediate level of Spanish orthography, syntax, and vocabulary for students of Hispanic background who have little or no formal training in the Spanish language, and an introduction to the study of U.S. Hispanic minority literature. This course fulfills the Liberal Arts and Sciences foreign language requirement. Students may receive a total of 4 hours of credit for SPAN 140, SPAN 141, SPAN 142, and SPAN 143. Prerequisite: SPAN 103 or consent of instructor.

SPAN 191  **Freshman Honors Tutorial**  credit: 1 TO 3 hours.
Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars and associates. May be repeated to a maximum of 3 hours. Prerequisite: Consent of departmental honors adviser in Spanish.

SPAN 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated. Approved for both letter and S/U grading.

SPAN 200  **Readings in Hispanic Texts**  credit: 3 hours.
Readings and discussion in Spanish of a variety of texts by leading Hispanic and Hispanic-American writers covering genres and themes; designed to emphasize reading, discussion, and enjoyment rather than literary criticism. Open to non-Spanish majors. Credit may be received by Advanced Placement "Language" or "Literature" examination. Prerequisite: SPAN 140 or SPAN 141 or equivalent.

**SPAN 202**  **Spanish for Business**  credit: 3 hours.
Introduction to vocabulary of Hispanic commerce; composition of business letters and similar texts. Prerequisite: SPAN 142 or consent of instructor.

**SPAN 204**  **Practical Review of Spanish**  credit: 3 hours.
Review of major challenges in Spanish grammar, including the verb system (major tenses and moods, morphology, and aspect), areas of contrast with English, and some lexical/semantic issues. Prerequisite: SPAN 140 or SPAN 141 or equivalent.

**SPAN 208**  **Oral Spanish**  credit: 3 hours.
Practice in speaking Spanish; to be taken concurrently with or subsequent to SPAN 204; meets four hours per week. Prerequisite: SPAN 140 or SPAN 141 or equivalent.

**SPAN 228**  **Spanish Composition**  credit: 3 hours.
Basic composition course; problems of written Spanish and principles of Spanish stylistic patterns; weekly written exercises. Prerequisite: Credit or concurrent enrollment in SPAN 204.

**SPAN 230**  **Introduction to Translation**  credit: 2 hours.
Theory and practice of written translations of non-technical texts from English to Spanish and Spanish to English; brief study of concepts and objectives of translation; analysis of examples and exercises; term project in translation selected in consultation with instructor. Prerequisite: SPAN 204.

**SPAN 232**  **Spanish in the Community**  credit: 3 hours.
Through community-based learning, this course introduces students to Spanish-speaking communities in the Champaign-Urbana area, focuses on issues of particular interest to the local Hispanic community, helps develop contextualized oral proficiency and facilitates student civic engagement. Active student reflection is structured throughout the course. Meets two hours a week in class and two hours a week in community-based service work. In their interactions with community members and organizations students both learn from and contribute to the community. Prerequisite: SPAN 208 with at least a B or consent of instructor.

**SPAN 240**  **The Chicano Experience**  credit: 3 hours.
Surveys literary work, film, essay, autobiography, historical narratives, and art in order to gain insight into the multi-faceted nature of Chicano/Chicana identity and experience. Lecture and readings are in English. Same as LLS 240.

**SPAN 242**  **US Latina & Latino Culture**  credit: 3 hours.
Survey of literature by and about people of Mexican, Puerto Rican, and Cuban descent in the United States. Taught in English. Same as LLS 242.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

**SPAN 244**  **Hispanic Literature & Culture**  credit: 3 hours.
Topics in major areas of Hispanic literature and culture; topics vary. Will count towards major only to satisfy culture requirement. Taught in English. Same as CWL 244. May be repeated to a maximum of 6 hours.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

**SPAN 246**  **Gender&Sexuality Latina/o Lit**  credit: 3 hours.
Examination of questions of gender, sexuality, and identity in contemporary Latina/Latino culture through a discussion of novels, performance pieces, essays and films. Spanish majors must complete writing assignments in Spanish. Same as LLS 246. Prerequisite: 200-level course in LLS literature or culture, or SPAN 200.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

**SPAN 250**  **Intro to Literary Analysis**  credit: 3 hours.
An introduction to literary analysis and interpretation. Emphasis will be placed upon close reading and critical analysis of texts representing different genres and periods in Spain and Spanish America. Prerequisite: SPAN 200, SPAN 204, and SPAN 228.

**SPAN 252**  **Intro to Hispanic Linguistics**  credit: 3 hours.
Introduction to Spanish phonology, syntax, sociolinguistics, dialectology, and history of the language; includes an overview and opportunity to examine an issue in each area in detail. Prerequisite: SPAN 200, SPAN 204, and SPAN 228.

SPAN 254  Intro to Cultural Analysis  credit: 3 hours.
Introduction to the analysis of culture as concept, practice and representation, including consideration of the debates that the idea of culture has provoked in different contexts. Provides analytical and methodological tools to discuss a full range of cultural forms. Special emphasis on issues of culture and representation, as well as on the notice of cultural difference(s). The theoretical and critical texts studies will represent diverse geographical and cultural locations. Examples and discussion will emphasize cultural issues in the context of Spain, Latin America and U.S. Latinas/os. Prerequisite: SPAN 200, SPAN 204, and SPAN 228.

SPAN 295  Topics Lit and Culture Studies  credit: 3 hours.
Selected topics in Spanish, Latin American and/or Latina/o literature and cultural studies. Specific topics may vary depending on the instructor. Course taught in Spanish. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: SPAN 200, SPAN 204, and SPAN 228.

SPAN 303  The Sounds of Spanish  credit: 3 hours.
Practical, introductory course to Spanish phonetics, stressing practice in pronunciation. May be offered as intensive eight-week course. Prerequisite: SPAN 252.

SPAN 305  The Structure of Spanish  credit: 3 hours.
Intensive study and analysis of Spanish grammar including tense, aspect, and mood; morphological problems; syntactic variation; style in oral and written expression; brief discussion of dialectal variation. Prerequisite: SPAN 252.

SPAN 307  Bilingualism  credit: 3 hours.
Introduction to the fundamental issues in the study of bilingualism as an individual and social phenomenon, with special emphasis on Spanish bilingual communities in the United States, Spain and Latin America. The course is taught in Spanish. Prerequisite: SPAN 252.

SPAN 309  Varieties of Spoken Spanish  credit: 3 hours.
Relationship between language, individual and society in the context of the spread of Spanish in the world, concentrating on Spanish varieties spoken in Spain and Latin America, including the United States, but will also give an overview of Spanish in Africa (Equatorial Guinea, Morocco), and other parts of the world (Israel, Turkey, the Philippines). Prerequisite: SPAN 252.

SPAN 310  Spanish Literatures I  credit: 3 hours.
A critical analysis of selected texts and authors representative of the Medieval and Early Modern periods in the context of Iberian cultures. Particular emphasis on the relationship between cultural practices and the construction of national identities prior to 1700, as well as on the plurality of cultures that shaped what is now Spain. Prerequisite: SPAN 250.

SPAN 312  Spanish Literatures II  credit: 3 hours.
Critical study of key texts representing the modern and contemporary periods. Special attention paid to broader literary and cultural contexts. Prerequisite: SPAN 250.

SPAN 314  Latin American Literatures I  credit: 3 hours.
Study of major writers and representative works of Spanish American literature from Pre-Columbian times until 1875. Prerequisite: SPAN 250.

SPAN 316  Latin American Literatures II  credit: 3 hours.
Critical analysis of selected texts and periods representative of Latin American literary production from 1800 to present, with special attention paid to broader literary and cultural contexts. Specific sections may emphasize critical topics such as gender, ideology, literary form, nationalism, race, sexuality. Prerequisite: SPAN 250

SPAN 318  Spanish Cultural Studies I  credit: 3 hours.
A critical analysis of historical events, institutions, artistic production, symbols and values representative of Spanish (Iberian) cultures. Particular emphasis on the relationship between specific cultural practices and/or values and the construction of national identities prior to 1700. May be repeated in separate terms to a maximum of 6 hours. Course may only be repeated if topic changes. Prerequisite: SPAN 254.

SPAN 320  Spanish Cultural Studies II  credit: 3 hours.
Critical analysis of selected historical events, artistic production, debates, symbols and values representative of Spanish (Iberian) cultures in the modern and contemporary periods. Particular emphasis on the relationship between cultural practices and national identities, as well as on contextualized analysis of different types of cultural phenomena. May be repeated in separate terms to a maximum of 6 hours. Course may only be repeated if topic changes. Prerequisite: SPAN 254.

SPAN 324  Cultural Studies Americas I  credit: 3 hours.
Examination of the complexities, ramifications and ambiguities of the cultural encounters, processes and expressions which took place in Latin America between different racial and ethnic groups from Pre-Columbian times to the 1800. Particular emphasis will be placed on the critical analysis of major cultural events, periods and issues that influenced the formation of identities in these territories. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: SPAN 254.

**SPAN 326 Cultural Studies Americas II** credit: 3 hours.

Panoramic view of Latin American cultures since the end of the colonial period (roughly 1820) to the present. Examination of the major debates, authors and cultural issues that shaped those cultures or that were shaped by them. Specific themes may vary by semester, and may include the following: slavery, colonialism and neocolonialism, revolution, mestizaje, gender, the state, and modernization. Analysis will include diverse cultural phenomena, as well as consideration of cultural perspectives and practices. May be repeated in separate terms to a maximum of 6 hours. Course may be repeated only if topic varies. Prerequisite: SPAN 254.

**SPAN 332 Spanish and Entrepreneurship** credit: 3 hours.

Entrepreneurship means more than starting a business. This course emphasizes social entrepreneurship, in which the basic process of entrepreneurship-opportunity recognition, resource gathering and value creation is used to address social issues, not to create profits. Students do community-based learning in non-profits serving the local Spanish-speaking community, thereby building their language skills, acquiring cultural knowledge and gaining hands-on experience with social entrepreneurship (theory and practice). Each week class meets two hours in class and two hours in community-based service work. Prerequisite: SPAN 232 with minimum grade of B or consent of instructor.

**SPAN 395 Adv Topics Lit & Culture St** credit: 3 hours.

Selected topics in Spanish, Latin American and/or Latina/o literatures and cultural studies. Specific topics may vary. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: One 300-level course in Spanish/Latin American literature and one 300-level course in Spanish/Latin American Cultural Studies.

**SPAN 399 Study Abroad** credit: 0 TO 18 hours.

Lectures, discussions, seminars, and practical work in Spanish language, literature, history, culture, and civilization in Spain and Latin America. May be repeated to a maximum of 36 hours. Approved for both letter and S/U grading. Prerequisite: SPAN 140, SPAN 141, SPAN 142 or SPAN 143 or equivalent.

**SPAN 430 Spanish Phonology** credit: 3 OR 4 hours.

Systematic introduction to the sound structures of Spanish, concentrating on recent contributions of theoretical linguistics to the understanding of the phonology of Spanish in its standard and selected dialectal varieties. 3 undergraduate hours. 4 graduate hours. Prerequisite: SPAN 303.

**SPAN 431 Spanish Morphology** credit: 3 OR 4 hours.

Introductory course to basic concepts of morphological structure and word formation from a functional perspective. The course centers around the specific morphological characteristics of Spanish, considering historical and dialectal variation. Taught in Spanish. 3 undergraduate hours. 4 graduate hours. Prerequisite: SPAN 305 or equivalent; or consent of instructor.

**SPAN 432 Spanish Syntax** credit: 3 OR 4 hours.

Systematic introduction to the foundations of Spanish syntax based on standard and more recent treatments of Spanish and syntactic theory. 3 undergraduate hours. 4 graduate hours. Prerequisite: SPAN 305 or consent of instructor.

**SPAN 433 Spanish Sociolinguistics** credit: 3 OR 4 hours.

Introduction to the sociolinguistic variation (social, historical, and dialectal) of Spanish-speaking communities, and to the basic theoretical and methodological concepts of sociolinguistic research. Taught in Spanish. 3 undergraduate hours. 4 graduate hours. Prerequisite: SPAN 307 or SPAN 309; or consent of instructor.

**SPAN 434 History Spanish Lang** credit: 3 OR 4 hours.

Study of the historical evolution of the Spanish language, from its origins in Latin to its spread and development in Spain and Latin America, considering also the influence of other languages on Spanish. Both internal history (changes in phonology, morphology, syntax and lexicon) and external history are examined. Taught in Spanish. 3 undergraduate hours. 4 graduate hours. Prerequisite: SPAN 252 or equivalent introduction to Spanish or General Linguistics.

**SPAN 435 Intro Romance Ling** credit: 3 OR 4 hours.

Comparative and historical analysis of the Romance languages. Same as FR 462, ITAL 435, LING 462, PORT 435, and RMLG 435. 3 undergraduate hours. 4 graduate hours. Prerequisite: Four semesters of a Romance language or Latin, or equivalent; LING 100, SPAN 252, FR 416, or equivalent.

**SPAN 442 US Latina Lit and Iconography** credit: 3 OR 4 hours.

Same as LLS 442 and GWS 445. See LLS 442.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Notes</th>
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<tbody>
<tr>
<td>SPAN 460</td>
<td>Principles of Language Testing</td>
<td>3 OR 4</td>
<td>Same as EIL 460, EPSY 487, FR 460, GER 460, ITAL 460, PORT 460, and SLS 460. See EIL 460.</td>
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<tr>
<td>SPAN 461</td>
<td>Medieval Spanish Studies</td>
<td>3 OR 4</td>
<td>An introduction to major works and writers before 1500 with special attention to their political and cultural contexts. 3 undergraduate hours. 4 graduate hours. May be repeated as topics vary, to a maximum of 6 undergraduate hours or 8 graduate hours. Prerequisite: SPAN 310 and SPAN 318.</td>
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<tr>
<td>SPAN 462</td>
<td>Early Modern Spanish Studies</td>
<td>3 OR 4</td>
<td>Study of the major authors and texts of the early modern period (Renaissance and Baroque) with particular attention to the cultural and political contexts of sixteenth and seventeenth century Spain. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours if topic varies. Prerequisite: SPAN 310 and SPAN 318.</td>
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<tr>
<td>SPAN 463</td>
<td>18-19thC Spanish Studies</td>
<td>3 OR 4</td>
<td>Selected literary and non-literary texts published in Spain during the 18th and 19th centuries. Focus on analysis of literary and other manifestations of major cultural movements and artistic currents and preoccupations. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours as topic varies. Prerequisite: SPAN 310 and SPAN 318.</td>
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<tr>
<td>SPAN 464</td>
<td>Spanish Studies 1898-1960</td>
<td>3 OR 4</td>
<td>Selected literary and non-literary texts published in Spain between 1898-1960. Focus on analysis of literary and other manifestations of major cultural movements and artistic currents and preoccupations. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours as topic varies. Prerequisite: SPAN 310 and SPAN 318.</td>
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<tr>
<td>SPAN 465</td>
<td>20th-21stC Spanish Studies</td>
<td>3 OR 4</td>
<td>Examines the cultural production of 20th and 21st century Spain, with emphasis on major works, critical movements and debates. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours if topic varies. Prerequisite: SPAN 310 and SPAN 318.</td>
</tr>
<tr>
<td>SPAN 466</td>
<td>Colonial Span Amer Studies</td>
<td>3 OR 4</td>
<td>In-depth study of colonial Spanish American discursive and cultural production from Pre-Hispanic times to the eighteenth century. Emphasis is placed upon the intellectual and cultural climate from which these texts emerged. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours if topic varies. Prerequisite: SPAN 310 and SPAN 318.</td>
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<tr>
<td>SPAN 467</td>
<td>19thC Sp American Studies</td>
<td>3 OR 4</td>
<td>Provides a panoramic view of literary and cultural production in Spanish America between 1810 and 1900. Special attention paid to the emergence of &quot;national literatures&quot; within specific historical and political contexts. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours if topic varies. Prerequisite: SPAN 310 and SPAN 318.</td>
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<tr>
<td>SPAN 468</td>
<td>20th-21stC Span Am Studies</td>
<td>3 OR 4</td>
<td>Examines major works, critical movements and/or theoretical issues in the 20th and 21st century Spanish American literary and cultural studies. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours if topic varies. Prerequisite: SPAN 310 and SPAN 318.</td>
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<tr>
<td>SPAN 469</td>
<td>Colonial Latina/o Studies</td>
<td>3 OR 4</td>
<td>An introduction to texts produced during the colonial period (1492-1821) and pertaining to the Spanish Caribbean and to what was then known as the Spanish Northern frontier. Examination of the primary texts that delineated the first images of the Caribbean, the borderland territories and their inhabitants, with emphasis on the roles played by race, ethnicity, gender, violence, and the colonial power in that delineation. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours or 8 graduate hours if topics vary. Prerequisite: SPAN 310 and SPAN 318.</td>
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<tr>
<td>SPAN 471</td>
<td>Intro Second Lang Learn Tchg</td>
<td>4</td>
<td>Introduction to models of communication and communicative competence, contemporary approaches to language teaching, current research in second language acquisition, and issues and perspectives on languages testing. Includes twenty-four early field experiences in local schools. Same as CHIN 471, FR 471, GER 469, HUM 471, JAPN 471, LAT 471, and RUSS 471. 4 undergraduate hours. Prerequisite: Sophomore standing and enrollment in a teacher education curriculum, or consent of instructor. Early field experiences require Illinois State criminal background check and annual bloodborne pathogen training (see Council on Teacher Education for questions).</td>
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<tr>
<td>SPAN 475</td>
<td>Intro to Comm Lang Tchg</td>
<td>4</td>
<td>Course focuses on the development of appropriate language teaching materials based on theory and research in classroom language learning. Emphasis is on skill development and testing as well as lesson planning. Includes twenty-eight early field experiences in the</td>
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form of microteachings and observations in local schools. Same as CHIN 475, FR 475, GER 475, JAPN 475, LAT 475, and RUSS 475. 4 undergraduate hours. Prerequisite: SPAN 471 and enrollment in a teacher education curriculum, or consent of instructor.

SPAN 477  Span Grammar Comm Lang Tchg  credit: 3 hours.
Survey of major Spanish syntactic and morphological patterns with particular emphasis on the acquisition of Spanish grammar by non-native speakers. Students will develop a sensitivity for appropriate teaching of Spanish grammar. 3 undergraduate hours. Required for teacher education. Prerequisite: SPAN 471 or consent of instructor.

SPAN 478  Topics Secondary Lang Tchg  credit: 4 hours.
Course provides an overview of some day-to-day issues in contemporary language teaching in the secondary context. Topics include discipline and classroom management, organization, lesson planning, standards, technology, among others. Course meets for the first eight weeks of the spring term and requires an eight-hour block of time one day per week for on-site work in a secondary classroom setting for a total of forty-eight early field experience hours. Same as CHIN 478, FR 478, GER 478, JAPN 478, LAT 478, and RUSS 478. 4 undergraduate hours. Prerequisite: Enrollment in a teacher education program and completion of SPAN 471 and SPAN 475.

SPAN 482  Computer Foreign Lang Tchg  credit: 4 hours.
Same as CLCV 482, EIL 482, FR 482, GER 482, HUM 482, ITAL 482, LING 486, PORT 482, and SLAV 482. See HUM 482.

SPAN 489  Theoretical Foundations of SLA  credit: 3 OR 4 hours.
Same as EIL 489, FR 481, GER 489, ITAL 489, LING 489, PORT 489, and SLS 489. See EIL 489.

SPAN 490  Advanced Readings in Spanish  credit: 0 TO 3 hours.
Directed reading course intended to develop an advanced student's interest in a special area of Hispanic linguistics or literature (author, genre, period, group of works, etc.). Topics to be chosen in consultation with an advisor. Only topics not covered in regular offerings will be considered. May be repeated if topics vary. 1 to 3 undergraduate hours. No graduate credit. Prerequisite: SPAN 302 for linguistics topics; and any two of SPAN 450, SPAN 452, SPAN 454, or SPAN 456 for literature topics.

SPAN 491  Topics for Honors Students  credit: 1 TO 3 hours.
For candidates for honors in Spanish; intensive study of topics in Hispanic literature or linguistics. May be repeated to a maximum of 6 hours. 1 to 3 undergraduate hours. No graduate credit. Prerequisite: Consent of instructor and of departmental honors advisor.

SPAN 500  Begin Span Grad Students  credit: 4 hours.
Basic grammar and vocabulary; reading practice. Credit may not be used toward a graduate degree.

SPAN 501  Intermed Span Grad Students  credit: 4 hours.
Continuation of SPAN 500; special readings in the critical literature of several disciplines. Credit may not be used toward a graduate degree. Prerequisite: SPAN 500 or consent of instructor.

SPAN 516  Sem Golden Age Literature  credit: 4 hours.
May be repeated to a maximum of 8 hours if topics vary. Prerequisite: SPAN 462 or equivalent.

SPAN 528  Sem 20thC Spanish Lit  credit: 4 hours.
Investigation of literary problems presented by the Spanish novel, drama, poetry and/or essay since 1900. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: SPAN 465 or equivalent.

SPAN 535  Sem Spanish-American Lit  credit: 4 hours.
Special problems in methodology and research; includes other prose fiction. Same as CWL 562. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: A related 400-level course in Spanish American Studies or consent of instructor.

SPAN 540  Sem History of Ideas  credit: 4 hours.
Major topics in Hispanic intellectual history; sample topics include El ensayo como genero instrumental de las ideas: El peso de la identidad cultural, Corrientes ideologicas coloniales, and Idealismo y realismo. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: A related 400- or 500-level course in Spanish or Spanish American Studies or consent of instructor.

SPAN 557  Sem Romance Ling  credit: 4 hours.
Selected topics in comparative Romance linguistics. Same as FR 559, ITAL 559, LING 559, PORT 559, and RMLG 559. May be repeated if topics vary. Prerequisite: SPAN 435 and consent of instructor.

SPAN 558  Sem Spanish Synchronic Ling  credit: 4 hours.
Selected topics of Spanish phonology, syntax and sociolinguistics in the light of present-day linguistic theory. May be repeated to a maximum of 16 hours if topics vary. Prerequisite: Graduate standing in Spanish or consent of instructor.

SPAN 559  Sem Spanish Diachronic Ling  credit: 4 hours.
Selected topics on the development of Spanish and its dialects in the light of present-day historical methods. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

SPAN 563  **College Teaching Foreign Langs**  credit: 2 OR 4 hours.
Same as EIL 563, FR 563, GER 563, ITAL 563, PORT 563, and RUSS 563. See FR 563.

SPAN 571  **Proseminar For Lang Tchg**  credit: 4 hours.
In-depth exploration of fundamental concepts in foreign language teaching; designed for departmental Teaching Assistants: topics include classroom discourse, teaching approaches, reading, listening, writing, and principles of language testing. Same as ITAL 571, and PORT 571. Prerequisite: Teaching assistantship in the Department of SPAN, ITAL, and PORT or consent of instructor.

SPAN 572  **Theory and Literary Criticism**  credit: 4 hours.
Presentation of major critical theories for the analysis of literary and cultural texts since the mid-20th century. Hispanic, Italian, Luso-Brazilian, and U.S. Latina/o critical theory will be studied. Students will demonstrate their understanding of these theories by critically engaging texts written in Spanish, Italian, Portuguese, or the foreign language of their specialization. Same as ITAL 572, and PORT 572. Prerequisite: Graduate standing in the Department of Spanish, Italian and Portuguese consent of instructor.

SPAN 578  **Sem Second Lang Learn**  credit: 4 hours.
Treats specific topics in second language learning that are of current research and/or theoretical interest. Topics vary from term to term. Same as EALC 588, EIL 590, FR 588, GER 588, ITAL 588, LING 588, PORT 588, and SLS 588. May be repeated to a maximum of 16 hours if topics vary. Prerequisite: SPAN 580 or equivalent or consent of instructor.

SPAN 599  **Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
SPED 117  The Culture of Disability  credit: 3 hours.

The purpose of this course is to provide an introduction to the culture of disability across the lifespan. The impact of disabilities on an individual across the lifespan will be explored, and the unique culture that is created by having a disability will be addressed. The historical basis for the disability movement and special education will be addressed, including legislation and litigation that has had a significant impact on the field. Students also will learn about the characteristics of individuals with diverse abilities as well as current trends in educational services.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

SPED 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.

May be repeated.

SPED 205  Introduction to Special Needs  credit: 1 hours.

Topics include the history of services for students with special needs, the legal bases for special education, the characteristics of students with special needs, the referral process for students who may be eligible for special services, and the nature of learning disabilities.

SPED 252  American Deaf Culture & Educ  credit: 3 hours.

Same as EPSY 252 and SHS 252. See EPSY 252.

This course satisfies the General Education Criteria for a:
UIUC: US Minority Culture(s)

SPED 312  Intro to Ed Technology  credit: 3 hours.

This course provides preservice teachers with the foundation for growth in technology integration through professional preparation, student teaching, and licensure. Major areas covered include the use of productivity tools, effective integration of the internet, and enhancing instruction through the use of multimedia. Additional topics include learning theories, professional development, evaluation, and technology use across multiple disciplines. Special equipment needed includes a USB-Flash Drive and SCD-R disks.

SPED 317  Characteristics & Eligibility  credit: 3 hours.

The purpose of this course is to provide an introduction to issues associated with the identification and characteristics of students with disabilities, eligibility for special education, and placement to meet students' educational needs. Prerequisite: SPED 117 and admission into the teacher education program in special education.

SPED 322  Intro to Mental Retardation  credit: 3 hours.

Study of the history and current status of the social, emotional, physical, and learning characteristics and problems of persons with mental retardation; identification and diagnosis; available services and provisions; and educational programs and lifelong processes of adaptation for these individuals and their families. Same as PSYC 322, REHB 322. Prerequisite: PSYC 100 or SPED 117; or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Behavioral Sciences

SPED 391  Thesis  credit: 2 hours.

Prerequisite: Senior standing.

SPED 395  Independent Study  credit: 2 hours.

Study of problems not considered in other courses; designed for students who excel in self-direction and intellectual curiosity. Prerequisite: Upperclassman; upper five percent of class in grade-point average; demonstrated writing competence, research potential, scholarly attitude, and interest as attested to by instructors; consent of adviser and staff member who supervises the work.

SPED 405  Gen Educator's Role in SPED  credit: 2 OR 3 hours.
Examination of issues in educating students with special needs: service delivery models, roles of teachers and related service providers, student assessment, curriculum individualization, instructional strategies, management of problem behaviors, and program evaluation. Secondary education, foreign language, and agriculture teacher education programs must take the course for 2 hours credit with concurrent registration in SPED 205. Elementary education majors must take the course for 3 hours credit. The 3 hour course will include content on characteristics of students with disabilities, and eligibility and referral to special education. Prerequisite: SPED 117 for 3 hour course; concurrent registration in SPED 205 for the 2 hour course or consent of instructor.

**SPED 413 New Media & Learner Differences** credit: 4 hours.
An investigation of the dimensions of learner diversity: material (class, locale), corporeal (age, race, sex and sexuality, and physical and mental characteristics) and symbolic (culture, language, gender, family, affinity and persona). Examines social-cultural theories of difference, as well as considering alternative responses to these differences in educational settings - ranging from broad, institutional responses to specific pedagogical responses within classes of students. No undergraduate credit. 4 graduate hours. Prerequisite: Acceptance into the Master of Education with an emphasis on New Learning and New Literacies program.

**SPED 414 Assessment in ECSE** credit: 3 hours.
Practice in designing and applying assessment devices and procedures and in using them to make educational decisions for children with special needs, birth through kindergarten age. Prerequisite: Credit or concurrent registration in SPED 524 or consent of instructor.

**SPED 416 Perspectives on Gifted Edu** credit: 3 OR 4 hours.
Consideration of persons in society exhibiting gifted behavior; who they are, their physical, psychological, social, and educational characteristics, and society's needs and provisions for them. The major portion of the course is devoted to the consideration and evaluation of instructional and administrative adjustments that should be made for the gifted in the educational structure. 3 undergraduate hours. 3 or 4 graduate hours.

**SPED 424 Formal Assessment in SPED** credit: 2 hours.
Course focuses on the theoretical and practical considerations in the psychological and educational assessment of individuals with disabilities. An emphasis will be placed on understanding the technical and practical aspects of current formal assessment procedures and their application to the education of children and youth with disabilities. Prerequisite: Admission to the Department of Special Education or consent of instructor.

**SPED 426 Collaboration and Teaming** credit: 4 hours.
Course is designed to provide participants with the information needed for effective collaboration and interactive teaming. Participants will learn effective models of collaboration and consultation, team member roles and responsibilities, collaborative practices for participating on teams, and strategies for securing appropriate resources for students with special needs. Emphasis is placed on skills necessary for working collaboratively with parents, teachers, and other service providers. Students cannot receive credit for both this course and SPED 538. SPED 538 will continue to be offered for graduate students. Prerequisite: Requires concurrent enrollment in SPED 524 or EDPR 420, or consent of instructor.

**SPED 431 Assistive Tech & Phys Disab** credit: 2 hours.
Course focuses on specialized health care needs, policies, and procedures for working with students with disabilities. An overview is provided of methods for accommodating students including task or environmental modifications, assistive technology, and adaptive equipment options. Prerequisite: Admission to the Department of Special Education or consent of instructor.

**SPED 432 Multiple Disabilities** credit: 3 hours.
Focuses upon the physical and educational characteristics of individuals with multiple disabilities, particularly those with physical disabilities and other health and sensory impairments; covers educational curricula, teaching methods, and other educational considerations such as working with parents, medical personnel, and support staff, and educational adaptations. Prerequisite: Admission to the Department of Special Education or consent of instructor.

**SPED 435 Behavior Analysis in SPED** credit: 3 hours.
Remediation of behavior problems of exceptional students and adults using applied behavior analysis techniques; includes defining, observing, recording, charting, and evaluating behavior change and application of behavioral procedures to remediate behavior problems in the classroom. Prerequisite: Admission to the Department of Special Education or consent of instructor.

**SPED 436 Systematic Instruction in SPED** credit: 4 hours.
Elements of data-based instruction emphasizing educational planning for individuals with special needs; includes task and developmental analysis, writing instructional programs, and individualization of instruction. Covers infancy to young adults; mild to severe disabilities. Prerequisite: Credit or concurrent registration in SPED 435, or consent of instructor.

**SPED 437 Curriculum for Severe Disab** credit: 4 hours.
Curriculum design, development, and adaptation for students with moderate and severe disabilities; includes the following basic curriculum areas: domestic/home living, self-care, socialization, community living, leisure and recreation, and functional academics;
a focus is on providing instruction in these areas in inclusive educational settings; and an emphasis throughout the course is on the evaluation of curriculum and program effectiveness. Prerequisite: SPED 436.

SPED 438  **Collaborating with Families**  credit: 3 OR 4 hours.
The impact of children with special needs on their families; models for the study of family systems are applied to understanding families of children with special needs; emphasis on planning family-focused interventions and exploring strategies for working with parents in a variety of settings. Prerequisite: Practicum experience or consent of instructor.

SPED 440  **Instructional Strategies I**  credit: 4 hours.
Course is designed to provide participants with information on effective instructional practices for working with students with disabilities. Participants are provided with information on generic strategies and principles of learning, instructional formats and strategies for informal assessment. Throughout this course emphasis is placed on methods and strategies for instructing individuals and groups of students. Important consideration is given to legal and ethical issues and an understanding of diverse needs in instructional design and delivery. Prerequisite: SPED 317 and SPED 517 or consent of instructor.

SPED 441  **Instructional Strategies II**  credit: 4 hours.
Course focuses on providing participants with fundamental elements of instruction for working with students with disabilities in general and special education classrooms. Participants will learn strategies for organizing the classroom and designing and implementing instruction. Emphasis is placed on implementing and evaluating strategies that are effective for working with increasingly diverse students with varying levels of instructional needs across the curriculum. Prerequisite: SPED 440 and concurrent enrollment in SPED 524 or EDPR 250, or consent of instructor.

SPED 444  **Career Dev & Indiv with Disab**  credit: 1 hours.
Course focuses on career development and employment of individuals with disabilities. Emphasis will be placed on determining job options, job development, self-determination and person-centered planning. Prerequisite: Admission to the Department of Special Education, or consent of instructor.

SPED 446  **Curriculum Development I**  credit: 4 hours.
Course provides an introduction to principles and practices in curriculum design for students with disabilities. Topics include models of curriculum development, procedures for identifying curriculum priorities across content areas, and relationships between curriculum and instructional settings. Emphasis is on development of inclusive educational programs that are outcome-driven and on evaluation of program effectiveness. Prerequisite: Admission to the Department of Special Education, or consent of instructor.

SPED 447  **Curriculum Development II**  credit: 4 hours.
Application of principles and practices of curriculum design for students with disabilities to academic skill areas including English language arts, mathematics, science, and social science. Curriculum development in the areas of social skills, study skills, and self-management is also addressed. Emphasis is on strategies used to determine educational priorities and construction of curriculum with appropriate scope and sequence for students with disabilities. Prerequisite: SPED 446 and admission to the Department of Special Education, or consent of instructor.

SPED 448  **Curriculum Development III**  credit: 4 hours.
Review and application of curriculum development and adaptation principles and strategies to life skill domain areas. Curriculum areas addressed include domestic/home-living, leisure and recreation, community living, and vocational programs and job preparation. Emphasis on designing instruction to address life skill curriculum needs in inclusive educational programs and on critically evaluating curriculum and program effectiveness. Prerequisite: SPED 446 and admission to the Department of Special Education, or consent of instructor.

SPED 450  **Introduction to ECSE**  credit: 2 hours.
Overview of the history, trends, and issues of the field of Early Childhood Special Education (ECSE) with particular attention to federal and state policy, service system models, and professional roles and ethics. Emphasis is on current research, theory, and practice. Prerequisite: Junior standing.

SPED 459  **Curriculum and Meth in SPED**  credit: 2 OR 4 hours.
Intensive exploration of curriculum development in specialized areas of education. Requests for initiation of course sections are made by faculty or students. Approved for both letter and S/U grading. May be repeated.

SPED 460  **Communication and Phys Disab**  credit: 4 hours.
Focuses upon issues and intervention strategies that can impact the communication skills of persons with moderate or severe intellectual and/or physical disabilities. Specific assessment and intervention strategies are discussed as they relate to both verbal and augmentative communication.

SPED 461  **Augmentative Communication**  credit: 2 hours.
Course focuses on issues and strategies for teaching communication to persons with significant intellectual or physical disabilities. Specific assessment and intervention strategies are discussed as they relate to alternative and augmentative communication. Prerequisite: SHS 220 or equivalent, concurrent enrollment or prior completion of SPED 440, and admission to the Department of Special Education, or consent of instructor.

SPED 465  **Curriculum and Methods in ECSE**  credit: 3 hours.
Introduction to the field of early childhood special education, including its history and major issues; instructional methods used in teaching and facilitating development in young children with disabilities are covered in depth. Prerequisite: Concurrent registration in SPED 524 or consent of instructor.

SPED 470  **Learning Environments I**  credit: 3 hours.
Course is designed to provide participants with an introduction to theories and interventions related to school climate and classroom management. Course will focus on using positive behavioral supports to create an effective classroom and school climate. Prerequisite: Admission to the Department of Special Education, or consent of instructor.

SPED 471  **Learning Environments II**  credit: 3 hours.
Course is designed to provide participants with specific information on intervention and evaluation strategies related to designing and managing effective learning environments and to becoming a discriminating consumer of the professional literature related to behavior interventions. Prerequisite: SPED 470, and admission to the Department of Special Education, or consent of instructor.

SPED 510  **Legal Aspects of Disabilities**  credit: 4 hours.
Study of the legal rights of individuals with disabilities and their families, with emphasis on educational aspects; inter-relationship of constitutional, statute, administrative and case law at the federal, state and local levels. Case study simulations and mock due process hearings are included.

SPED 513  **Intro to Diversity & Equity**  credit: 4 hours.
This course, geared to education non-majors, offers an introduction to ways of thinking about educational theories, concepts, and practices as they relate to philosophical discussions surrounding social justice, especially as pertaining to race, class, gender and disability. Broadens students' reflective understanding of the development of educational institutions and practices and, through an emphasis on class discussion, promotes a critical and analytical approach to thinking about the evaluating these institutions and practices. Same as EPS 576. Prerequisite: Acceptance into the Master of Education with an emphasis on Diversity and Equity in Education.

SPED 514  **Equity Issues in Spec Educatio**  credit: 4 hours.
A graduate-level overview of issues in equity and access for students with disabilities. Historical and legal foundations are reviewed, but the course focus is issues related to characteristics of individuals with disabilities, challenges in instructional service delivery, including of students with special needs in the general curriculum, and transition of students with disabilities to independent living. Participants reflect on issues in light of their own experiences. Prerequisite: Acceptance into the Master of Education with an emphasis on Diversity and Equity in Education Program or instructor approval.

SPED 517  **Disability Issues in SPED**  credit: 4 hours.
Overview of special education at the graduate level. Focus is placed on issues related to: assessment, identification, and characteristics across all disability areas. The greatest emphasis is placed on strategies for including students with disabilities in the general curriculum. Historical and legal perspectives that provide the foundation for special education are discussed.

SPED 520  **Psycho-Social Aspects**  credit: 4 hours.
Same as REHB 520. See REHB 520.

SPED 521  **Admin & Supervision in SPED**  credit: 4 hours.
Examination of administrative and supervisory practices in educating children with disabilities and gifted children in public and private schools; application of administrative theory to special education programs. Designed for graduate students in education administration or special education preparing to direct special education programs. Prerequisite: SPED 517; EOL 595; or consent of instructor.

SPED 524  **Supervised Pract in SPED**  credit: 1 TO 8 hours.
Supervised practice in one or more settings in which students with mild to severe disabilities are served; practicum settings may include day, residential, special, and regular schools which serve students with disabilities. Approved for S/U grading only. Course may be repeated in same or subsequent terms to a maximum of 8 hours. Prerequisite: Admission to the graduate program in special education; consent of supervising faculty member.

SPED 526  **Collaborative Leaders in SPED**  credit: 4 hours.
Course provides special educators and other professionals with skills and strategies to assume a leader/change agent role in their schools. Participants focus on effective leadership, collaborative practices, and innovative programs in special education that create unique learning environments, ultimately impacting all stakeholders (student with and without disabilities, teachers, families).
readings, lectures, and activities address how leaders in the field affect change in special education through grant writing, professional development, and the implementation and evaluation of innovative programs and practices. Prerequisite: SPED 426 or SPED 538 or equivalent.

SPED 538  **Interdisciplinary Teaming**  credit: 4 hours.
Study of roles and functions of teams in early intervention and special education service delivery; considers models of team process within and between service settings; explores dynamics of interaction on teams, including approaches to decision-making, communication, and conflict resolution; examines professional roles and tasks of team members in the intervention process.

SPED 545  **Transition and Voc Planning**  credit: 3 hours.
Provides an orientation to transition planning and vocational training as integrated components of secondary-level education curriculum. Topics include transition planning practices and participants, vocational assessment methods, supported employment concepts and issues, and vocational training strategies and programs. Same as REHB 545.

SPED 550  **Methods of Educational Inquiry**  credit: 4 hours.
Same as CI 550 and EPSY 573. See CI 550.

SPED 556  **Prob and Trends in SPED**  credit: 4 TO 8 hours.
Introduction to significant problems, points of view, and trends in the field concerned; explores significant research related to organization, content, and techniques in the field in question. Students are encouraged to design/propose/conduct special studies in approved areas.

SPED 565  **Atypical Development: B to 6**  credit: 2 OR 4 hours.
Examines characteristics of children with major biological risk conditions and disabilities, birth - six, with a focus on the impact of these conditions on development; briefly examines interventions used by a variety of professionals in addressing specific developmental needs of children with a variety of disabilities. Prerequisite: EPSY 236 or equivalent.

SPED 566  **Leadership in ECSE**  credit: 4 hours.
Program issues and research on the efficacy of various program models for young children with special needs from infancy to six; implications for program organization variables such as space, personnel roles, and curriculum. Prerequisite: SPED 465 and concurrent enrollment in SPED 524, or consent of instructor.

SPED 583  **Single Subject Research Design**  credit: 4 hours.
Study of the analysis of behavior in one or a few subjects using advanced time series designs; includes making accurate and reliable assessment of objective behaviors and designing experiments that feature interpretable comparisons among interventions and credible generalizability to subjects, settings, and time periods other than those specifically studied. Classic and current exemplars of these designs are studied and critiqued in depth. Same as EPSY 583.

SPED 585  **Individual Differences: B to 6**  credit: 3 OR 4 hours.
Examines major developmental themes in young children from birth to six. Emphasizes individual differences resulting from environmental and biological factors that influence development, including those resulting from disabilities. Focuses on integration among multiple domains of development. 3 undergraduate hours. 4 graduate hours. Prerequisite: Graduate standing or consent of instructor.

SPED 590  **Seminar for Advanced Students**  credit: 0 TO 8 hours.
Seminar in the education of individuals with special needs; open only to persons who have been admitted for graduate study. Approved for both letter and S/U grading.

SPED 591  **Field Study and Thesis Seminar**  credit: 1 TO 8 hours.
Planning field studies and thesis problems by graduate students; students present their studies at each of four stages: (1) the inception, delimitation, tentative design stage; (2) the proposed design stage; (3) the revised design stage; and (4) the final design stage. Students are expected to analyze all presentations critically. May be repeated up to 8 hours. Prerequisite: Admission to graduate studies in Special Education or consent of instructor.

SPED 592  **Concepts and Issues in SPED I**  credit: 4 hours.
Roles and competencies for special education leadership positions; includes literature critique, and preparation and presentation of a major review paper in an area of research interest. Prerequisite: Admission to doctoral studies in Special Education or consent of instructor.

SPED 593  **Concepts and Issues in SPED II**  credit: 4 hours.
Seminar in current concepts and issues relating to all children with special needs; introduction to grant proposal writing; and introduction to journal reviewing; requires critical review of key readings and preparation of a literature review of a topic of current research in special education. Prerequisite: SPED 592 or consent of instructor.
SPED 595  **Independent Study**  credit: 1 TO 4 hours.
Self-directive, independent study, that is, develops the individual's ability as an independent student and enables the student to pursue needed study in a field in which appropriate courses are not being offered during a given term. May be repeated with approval. Prerequisite: Approval of study outline by advisor and the department head prior to enrollment.

SPED 599  **Thesis Research**  credit: 0 TO 16 hours.
Individual direction of research and thesis writing. May be repeated. Approved for S/U grading only.
Statistics

Statistics
Head of Department: Douglas G. Simpson
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Phone: 333-2167
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STAT 100  Statistics  credit: 3 hours.
First course in probability and statistics at a precalculus level; emphasizes basic concepts, including descriptive statistics, elementary probability, estimation, and hypothesis testing in both nonparametric and normal models. Same as MATH 161. Credit is not given for both STAT 100 and any one of the following: ECON 202, PSYC 235, or SOC 485. Prerequisite: MATH 012.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

STAT 200  Statistical Analysis  credit: 3 hours.
Principles in statistical design and analysis motivated by real case studies. Statistical computing is introduced and used for data analysis. Theory and techniques include survey sampling, hypothesis testing, contingency tables, Poisson models, regression analysis, and response surface analysis. The vital role of statistics in science is illustrated by case studies, and students learn principles related to study design, data collection, data presentation, and statistical computing, as well as technical writing and communication skills.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

STAT 390  Individual Study  credit: 1 OR 2 hours.
May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

STAT 391  Honors Individual Study  credit: 1 OR 2 hours.
May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

STAT 400  Statistics and Probability I  credit: 4 hours.
Introduction to mathematical statistics that develops probability as needed; includes the calculus of probability, random variables, expectation, distribution functions, central limit theorem, point estimation, confidence intervals, and hypothesis testing. Offers a basic one-term introduction to statistics and also prepares students for STAT 410. Same as MATH 463. Prerequisite: MATH 241 or equivalent.

STAT 408  Actuarial Statistics I  credit: 4 hours.
Examines elementary theory of probability, including independence, conditional probability, and Bayes' theorem; combinations and permutations; random variables, expectations, and probability distributions; joint and conditional distributions; functions of random variables; sampling; central limit theorem. Same as MATH 408. Credit is not given for both STAT 408 and either MATH 461 or STAT 400. Prerequisite: MATH 241 or equivalent.

STAT 409  Actuarial Statistics II  credit: 4 hours.
Continuation of STAT 408. Examines parametric point and interval estimation, including maximum likelihood estimation, sufficiency, completeness, and Bayesian estimation; hypothesis testing; linear models; regression and correlation. Same as MATH 409. Credit is not given for both STAT 409 and STAT 410. Prerequisite: STAT 408.

STAT 410  Statistics and Probability II  credit: 3 OR 4 hours.
Continuation of STAT 400. Includes moment-generating functions, transformations of random variables, normal sampling theory, sufficiency, best estimators, maximum likelihood estimators, confidence intervals, most powerful tests, unbiased tests, and chi-square tests. Same as MATH 464. 3 undergraduate hours. 4 graduate hours. Credit is not given for both STAT 410 and STAT 409. Prerequisite: STAT 400; or STAT 100 and MATH 461.

STAT 420  Methods of Applied Statistics  credit: 3 OR 4 hours.
Systematic, calculus-based coverage of the more widely used methods of applied statistics, including simple and multiple regression, correlation, analysis of variance and covariance, multiple comparisons, goodness of fit tests, contingency tables, nonparametric procedures, and power of tests; emphasizes when and why various tests are appropriate and how they are used. Same as MATH 469. 3 undergraduate hours. 4 graduate hours. Prerequisite: STAT 408 or STAT 400; MATH 231 or equivalent; knowledge of basic matrix manipulations; or consent of instructor.

STAT 424  Analysis of Variance  credit: 3 OR 4 hours.
Estimation and hypotheses testing in linear models; one-, two-, and higher-way layouts; incomplete layouts; analysis of covariance; and random effects models and mixed models. Same as MATH 465. 3 undergraduate hours. 4 graduate hours. Prerequisite: Credit or concurrent registration in MATH 415 and STAT 410.

STAT 425  Applied Regression and Design  credit: 3 OR 4 hours.
Explores linear regression, least squares estimates, F-tests, analysis of residuals, regression diagnostics, transformations, model building, factorial designs, randomized complete block designs, Latin squares, split plot designs. Computer work is an integral part of the course. 3 undergraduate hours. 4 graduate hours. Prerequisite: STAT 410.

STAT 426  Sampling and Categorical Data  credit: 3 OR 4 hours.
Sampling: simple random, stratified, systematic, cluster, and multi-stage sampling. Categorical data: multiway contingency tables, maximum likelihood estimation, goodness-of-fit tests, model selection, logistic regression. Computer work is an integral part of the course. 3 undergraduate hours. 4 graduate hours. Prerequisite: STAT 410.

STAT 427  Statistical Consulting  credit: 3 OR 4 hours.
Students, working in groups under the supervision of the instructor, consult with faculty and graduate students through the Statistical Consulting Service; readings from literature on consulting. 3 undergraduate hours. 4 graduate hours. Prerequisite: STAT 425 or consent of instructor.

STAT 428  Statistical Computing  credit: 3 OR 4 hours.
Examines statistical packages, numerical analysis for linear and nonlinear models, graphics, and random number generation and Monte Carlo methods. Same as MATH 493. 3 undergraduate hours. 4 graduate hours. Prerequisite: STAT 410 or equivalent; knowledge of a programming language.

STAT 429  Time Series Analysis  credit: 3 OR 4 hours.
Studies theory and data analysis for time series; examines auto-regressive moving average model building and statistical techniques; and discusses spectral model building and statistical analysis using windowed periodograms and Fast Fourier Transformations. Same as MATH 494. 3 undergraduate hours. 4 graduate hours. Prerequisite: STAT 410.

STAT 430  Topics in Applied Statistics  credit: 3 OR 4 hours.
Formulation and analysis of mathematical models for random phenomena; extensive involvement with the analysis of real data; and instruction in statistical and computing techniques as needed. Same as MATH 498. 3 undergraduate hours. 4 graduate hours. May be repeated with approval. Prerequisite: STAT 410 or STAT 420; or consent of instructor.

STAT 440  Statistical Data Management  credit: 3 OR 4 hours.
The critical elements of data storage, data cleaning, and data extractions that ultimately lead to data analysis are presented. Includes basic theory and methods of databases, auditing and querying databases, as well as data management and data preparation using standard large-scale statistical software. Students will gain competency in the skills required in storing, cleaning, and managing data, all of which are required prior to data analysis. 3 undergraduate hours. 4 graduate hours. Prerequisite: STAT 400 or STAT 409.

STAT 448  Advanced Data Analysis  credit: 4 hours.
Several of the most widely used techniques of data analysis are discussed with an emphasis on statistical computing. Topics include linear regression, analysis of variance, generalized linear models, and analysis of categorical data. In addition, an introduction to data mining is provided considering classification, model building, decision trees, and cluster analysis. Prerequisite: STAT 400 or STAT 409, and credit for or concurrent registration in STAT 410.

STAT 451  Probability Theory  credit: 3 OR 4 hours.
Same as MATH 461. See MATH 461.

STAT 458  Math Modeling in Life Sciences  credit: 3 OR 4 hours.
Same as ANSC 448 and IB 487. See ANSC 448.

STAT 466  Image and Neuroimage Analysis  credit: 3 OR 4 hours.
Same as BIOE 466 and PSYC 466. See PSYC 466.

STAT 510  Mathematical Statistics I  credit: 4 hours.
Distributions, transformations, order-statistics, exponential families, sufficiency, delta-method, Edgeworth expansions; uniformly minimum variance unbiased estimators, Rao-Blackwell theorem, Cramer-Rao lower bound, information inequality; equivariance. Prerequisite: STAT 410.

STAT 511  Mathematical Statistics II  credit: 4 hours.
Bayes estimates, minimaxity, admissibility; maximum likelihood estimation, consistency, asymptotic efficiency; testing and confidence intervals; Neyman-Pearson lemma, uniformly most powerful tests; likelihood ratio tests and large-sample approximation; nonparametrics. Prerequisite: STAT 510.

STAT 525  **Computational Statistics**  credit: 4 hours.
Various topics, such as ridge regression; robust regression; jackknife, bootstrap, cross-validation and resampling plans; E-M algorithm; projection pursuit: all with a strong computational flavor. May be repeated if topics vary. Prerequisite: STAT 425, STAT 426, and STAT 511; or consent of instructor.

STAT 530  **Bioinformatics**  credit: 4 hours.
Same as ANSC 543, CHBE 571, and MCB 571. See CHBE 571.

STAT 542  **Statistical Learning**  credit: 4 hours.
Modern techniques of predictive modeling, classification, and clustering are discussed. Examples of these are linear regression, nonparametric regression, kernel methods, regularization, cluster analysis, classification trees, neural networks, boosting, discrimination, support vector machines, and model selection. Applications are discussed as well as computation and theory. Prerequisite: STAT 410 and STAT 425.

STAT 551  **Theory of Probability I**  credit: 4 hours.
Same as MATH 561. See MATH 561.

STAT 552  **Theory of Probability II**  credit: 4 hours.
Same as MATH 562. See MATH 562.

STAT 553  **Probability and Measure I**  credit: 4 hours.
Measures and probabilities; integration and expectation; convergence theorems and inequalities for integrals and expectations; independence; convergence in probability, almost surely, and mean; Three Series Theorem; laws of large numbers. Credit is not given for both STAT 553 and either MATH 540 or MATH 561. Prerequisite: MATH 447 or consent of instructor.

STAT 554  **Probability and Measure II**  credit: 4 hours.
Measure extensions, Lebesgue-Stieltjes measure, Kolmogorov consistency theorem; conditional expectation, conditional probability, martingales; distribution functions and characteristic functions; convergence in distribution; Central Limit Theorem; Brownian Motion. Credit is not given for both STAT 554 and either MATH 561 or MATH 562.

STAT 555  **Applied Stochastic Processes**  credit: 4 hours.
Same as MATH 564. See MATH 564.

STAT 563  **Information Theory**  credit: 4 hours.
Same as CS 578 and ECE 563. See ECE 563.

STAT 571  **Multivariate Analysis**  credit: 4 hours.
Inference in multivariate statistical populations emphasizing the multivariate normal distribution; derivation of tests, estimates, and sampling distributions; and examples from the natural and social sciences. Prerequisite: STAT 410 and MATH 415, or consent of instructor.

STAT 575  **Large Sample Theory**  credit: 4 hours.
Limiting distribution of maximum likelihood estimators, likelihood ratio test statistics, U-statistics, M-, L-, and R-estimators, nonparametric test statistics, Von Mises differentiable statistical functions; asymptotic relative efficiencies; asymptotic expansions. Prerequisite: STAT 511 and either MATH 561 or STAT 554.

STAT 578  **Topics in Statistics**  credit: 4 hours.
May be repeated if topics vary. Prerequisite: Consent of instructor.

STAT 587  **Hierarchical Linear Models**  credit: 4 hours.
Same as PSYC 587 and EPSY 587. See EPSY 587.

STAT 588  **Covar Struct and Factor Models**  credit: 4 hours.
Same as EPSY 588, PSYC 588, and SOC 588. See PSYC 588.

STAT 590  **Individual Study and Research**  credit: 0 TO 8 hours.
Directed reading and research. Approved for both letter and S/U grading. May be repeated with approval. Prerequisite: Consent of instructor.
STAT 593  **STAT Internship**  credit: 0 TO 8 hours.
Supervised, off-campus experience in a field in which statistical science plays an important role. Approved for both letter and S/U grading. Prerequisite: STAT 425 and consent of instructor.

STAT 599  **Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only. Prerequisite: Consent of instructor.
Swahili

Linguistics
Head of Department: Elabbas Benmamoun
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3563
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SWAH 201  Elementary Swahili I  credit: 5 hours.
Beginning standard Swahili; emphasizes grammar, pronunciation, reading and conversation in standard Swahili. Participation in language laboratory required. Same as AFST 231.

SWAH 202  Elementary Swahili II  credit: 5 hours.
Continuation of elementary Swahili, with introduction of more advanced grammar; emphasizes more fluency in speaking, reading, and writing simple sentences in standard Swahili. Participation in language laboratory required. Same as AFST 232. Prerequisite: SWAH 201.

SWAH 403  Intermediate Swahili I  credit: 4 hours.
Second-year Swahili with emphasis on developing conversational fluency; some readings on Swahili culture and customs. Same as AFST 433. Prerequisite: One year of Swahili.

SWAH 404  Intermediate Swahili II  credit: 4 hours.
More of second-year Swahili with emphasis on conversational fluency; some reading in Swahili literature. Same as AFST 434. Prerequisite: One year of Swahili.

SWAH 405  Advanced Swahili I  credit: 3 hours.
Third-year Swahili with emphasis on conversational fluency and on increased facility in reading Swahili texts, including current newspaper prose and (East) African culture materials. Same as AFST 435. Prerequisite: SWAH 404 or equivalent.

SWAH 406  Advanced Swahili II  credit: 3 hours.
Third-year Swahili with emphasis on conversational fluency and on increased facility in reading Swahili texts, including current newspaper prose and (East) African culture materials. Same as AFST 436. Prerequisite: SWAH 405 or equivalent.

SWAH 407  Topics Swahili Lang & Lit I  credit: 3 hours.
Selected readings from modern Kiswahili authors, with a focus on novels, plays, and basic poetry illustrative of East African cultural issues and advanced level Kiswahili grammar, as well as development of expository writing skills. Same as AFST 405. Prerequisite: SWAH 406.

SWAH 408  Topics Swahili Lang & Lit II  credit: 3 hours.
Continuation of SWAH 407 with increased emphasis on the reading and comprehension of literary texts exemplified in advanced level novels, plays, and poetry, as well as on advanced mastery of expository writing skills. Same as AFST 406. Prerequisite: SWAH 407.

SWAH 409  Adv Topics Swahili Lang&Lit I  credit: 3 OR 4 hours.
Introduction to Kiswahili in the professions as documented in selected newspapers, educational radio and TV programs, works of fiction, biographies, anthologies, and professional journals. Students will be introduced to argumentative writing in Kiswahili, expected to make oral presentations, and to write a research paper in their field. Same as AFST 407. 3 undergraduate hours. 4 graduate hours. Prerequisite: SWAH 408.

SWAH 410  Adv Topics Swahili Lang&Lit II  credit: 3 OR 4 hours.
Continuation of SWAH 409 with increased emphasis on the development of comprehension and writing of professional language. Same as AFST 408. 3 undergraduate hours. 4 graduate hours. Prerequisite: SWAH 409.
# Theoretical and Applied Mechanics

Mechanical Science and Engineering  
Department Head: Huseyin Sehitoglu  
Department Office: 144 Mechanical Engineering Building, 1206 West Green, Urbana  
Phone: 333-1176, MechSE-Undergrad@illinois.edu  
www.mechse.uiuc.edu

**TAM 195  Mechanics in the Modern World  credit: 1 hours.**  
Freshman introduction to engineering mechanics and its role in modern engineering analysis and design. Lecture-project format.

**TAM 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.**  
May be repeated.

**TAM 201  Mechanics for Technol & Mgmt  credit: 3 hours.**  
Introduction to engineering mechanics (statics, dynamics, solid mechanics, and fluid mechanics) and the role that mechanics plays in engineering analysis and design. Lecture discussion format with laboratory sessions. For Technology and Management majors with junior standing.

**TAM 206  Mechanics for MatSE  credit: 4 hours.**  
Same as MSE 206. See MSE 206.

**TAM 210  Introduction to Statics  credit: 2 hours.**  
Forces, moments, couples; resultants of force systems; equilibrium analysis and free-body diagrams; analysis of forces acting on members of trusses, frames, etc.; shear-force and bending-moment distributions; Coulomb friction; centroids and center of mass; applications of statics in design. Credit is not given for both TAM 210 and TAM 211. Prerequisite: PHYS 211; credit or concurrent registration in MATH 241.

**TAM 211  Statics  credit: 3 hours.**  
Forces, moments, and couples; resultants of force systems; equilibrium analysis and free-body diagrams; analysis of forces acting on members of trusses, frames, etc.; shear-force and bending-moment distributions; Coulomb friction; centroids, center of mass, moment of inertia, polar moment of inertia, and product of inertia; virtual work; hydrostatic pressure; applications of statics in design. Credit is not given for both TAM 211 and TAM 210. Prerequisite: PHYS 211; credit or concurrent registration in MATH 241.

**TAM 212  Introductory Dynamics  credit: 3 hours.**  
Kinematics and dynamics of the three-dimensional motion of particles; kinematics and dynamics of the plane motion of rigid bodies; methods of work energy and impulse momentum; moving reference frames. Credit is not given for both TAM 212 and AE 252. Prerequisite: TAM 210 or TAM 211.

**TAM 251  Introductory Solid Mechanics  credit: 3 hours.**  
Relationship between internal stresses and deformations produced by external forces acting on deformable bodies, and design principles based on mechanics of solids: normal stresses, shear stresses, and deformations produced by tensile, compressive, torsional, and bending loading of members; beam deflections; elastic energy and impact; multi-dimensional stress states; buckling of columns. Prerequisite: TAM 210 or TAM 211.

**TAM 252  Solid Mechanics Design  credit: 1 hours.**  
Design problems and projects intended to accompany TAM 251. Prerequisite: Credit or concurrent registration in TAM 251.

**TAM 302  Engineering Design Principles  credit: 3 hours.**  
Examples of mechanical design problems that occur in engineering practice and the procedures and issues involved in solving them; technical aspects and societal ramifications of the design process; intellectual property, ethics, and contemporary issues; probability and statistics; computational mechanics; case studies; student discussion of design-related issues at different levels; design project reports and presentations; student teams.

**TAM 324  Behavior of Materials  credit: 4 hours.**  
Same as CEE 300. See CEE 300.  
This course satisfies the General Education Criteria for a:  
UIUC: Advanced Composition

**TAM 335  Introductory Fluid Mechanics  credit: 4 hours.**
Fluid statics; continuity, momentum, and energy principles via control volumes; ideal and real fluid flow; introduction to the Navier-Stokes equation; similitude; laminar and turbulent boundary layers; closed-conduit flow, open-channel flow, and turbomachinery. Lecture/lab format. Prerequisite: TAM 212.

TAM 412 Intermediate Dynamics credit: 4 hours.
Lagrangian mechanics of dynamical systems with an emphasis on vibrations; constraints and generalized coordinates; motion in accelerating frames; conservation laws and invariance of the Lagrangian; particle motion in one dimension, the two-body problem, and central-force motion; free and forced vibration of linearized single-degree-of-freedom and multi-degree-of-freedom discrete systems; weakly nonlinear vibrations; parametric resonance; introduction to Hamiltonian dynamics; rigid-body motions. Credit is not given for both TAM 412 and AE 352. Prerequisite: MATH 225 or MATH 415; MATH 285; TAM 212.

TAM 413 Fund of Engrg Acoustics credit: 3 OR 4 hours.
Same as ECE 473. See ECE 473.

TAM 424 Mechanics of Structural Metals credit: 3 hours.
Micromechanisms at the atomic, single-crystal, and polycrystal levels and their use in explaining the deformation and failure characteristics of metals; elastic deformation, dislocation mechanics, plastic deformation and strengthening mechanisms, fracture mechanics and fracture mechanisms, fatigue, and creep; design criteria; special topics. Prerequisite: CEE 300 or ME 330.

TAM 427 Mechanics of Polymers credit: 3 hours.
Mechanical behavior of amorphous and semi-crystalline polymers; overview of polymer structure, properties, and processing; polymer linear viscoelasticity using Boltzmann superposition and mechanical models; measurement of viscoelastic properties; polymeric yield phenomena; fracture and craze formation; impact and fatigue. Same as AE 427 and MSE 454. Prerequisite: CEE 300 or ME 330.

TAM 428 Mechanics of Composites credit: 3 hours.
Behavior of composite materials and their use in engineering structures: behavior and properties of the constituent fibers and matrices, micromechanical predictions of composite properties, anisotropic elasticity, behavior of composite laminae, and classical lamination theory; fracture mechanisms, failure theories; behavior of composite plates and beams. Same as AE 428 and MSE 456. Prerequisite: CEE 300 or ME 330.

TAM 435 Intermediate Fluid Mechanics credit: 4 hours.
Analytical solution methods for problems involving ideal and real fluids: potential flow theory, boundary-layer theory; surface waves, vortex dynamics, and compressible flows. Prerequisite: One of AE 312, ME 310, TAM 335; MATH 241 or MATH 380.

TAM 445 Continuum Mechanics credit: 4 hours.
Tensor algebra and analysis; kinematics of continua; mass, force, stress, and the general balance laws of continuum mechanics; introduction to constitutive equations. Graduate credit is not given to Theoretical and Applied Mechanics majors, except by petition to the Graduate Program Committee. Prerequisite: MATH 241 or MATH 380; TAM 251.

TAM 451 Intermediate Solid Mechanics credit: 4 hours.
Analysis of stress and strain (definitions, transformation of axes, equilibrium equations, and symmetry of the stress tensor); linear materials, Hooke's law; strain energy, potential energy, energy principles and methods; two-dimensional problems in elasticity (torsion, axisymmetric problems); the finite-element method for two- and three-dimensional boundary-value problems in linear elasticity; plasticity (introduction, yield criteria, elastic-plastic behavior, and limit-load calculations); linear-elastic fracture mechanics (introduction, Griffith's approach, stress intensity factor, and energy release rate). Prerequisite: MATH 241 or MATH 380; TAM 251.

TAM 456 Experimental Stress Analysis credit: 3 hours.
Basic theories for measuring stresses and deformations in load-carrying engineering components; use of optical, electrical, and mechanical instrumentation; laboratory sessions on brittle coatings, electrical resistance strain gages, photoelasticity, and moire interferometry. Lecture lab format. Prerequisite: TAM 251.

TAM 461 Cellular Biomechanics credit: 4 hours.
Introduction to the mechanics of biological cells and tissues: cell structure; mechanics of biomembranes; the cytoskeleton and cortex; dynamic cell processes; cell motility and control of cell shape and proliferation; experimental approaches and theoretical models. Same as BIOE 461. Prerequisite: TAM 251.

TAM 470 Computational Mechanics credit: 3 OR 4 hours.
Introduction to modern computational mechanics: mappings and iterative methods; stability; convergence; consistency; numerical and symbolic solutions of ordinary and partial differential equations; finite-difference methods; the finite-element method; spectral methods. Applications to problems in solid mechanics, fluid mechanics, and dynamics. Same as CSE 450. 3 undergraduate hours. 3 or 4 graduate hours. Graduate students receive 4 graduate hours credit upon successful completion of an additional computational project. Prerequisite: CS 101 and MATH 285.
TAM 497  Independent Study  credit: 1 TO 4 hours.
Individual studies in any area of theoretical and applied mechanics. May be repeated to a maximum of 12 hours, with a maximum of 8
hours in any one term. Prerequisite: consent of instructor.

TAM 498  Special Topics  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in theoretical and applied mechanics intended to augment the existing
curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or
separate terms if topics vary to a maximum of 9 undergraduate hours or 12 graduate hours.

TAM 499  Senior Thesis  credit: 3 hours.
Thesis investigation of special subjects in mechanics, including theoretical and/or experimental research. 3 undergraduate hours. No
graduate credit. Approval of the head of the department is required to register.

TAM 500  Seminar  credit: 1 hours.
Lectures and discussion on current topics in theoretical and applied mechanics. Required of all graduate students each term. Required
of all TAM graduate students each term. Approved for S/U grading only.

TAM 514  Elastodynamics and Vibrations  credit: 4 hours.
Review of theory of multi-degree-of-freedom systems; problems in the free and forced vibration of continuous linear elastic structures,
rods, beams, membranes, plates, and three-dimensional solid and fluid bodies; Lagrangian densities, Sturm-Liouville problems, time
and frequency domains, damping, Green's functions, and elastic waves; propagation and modal analysis; modeling of damping in
structures; response of complex structures. Prerequisite: TAM 412, TAM 542, and TAM 551.

TAM 515  Advanced Physical Acoustics  credit: 4 hours.
Same as ECE 545. See ECE 545.

TAM 518  Wave Motion  credit: 4 hours.
Linear waves in one-dimensional homogeneous and inhomogeneous media (both solids and fluids), linear elastic waves in a
homogeneous halfspace, scalar waves in a layer and in a layered halfspace, nonlinear diffusive waves, nonlinear dispersive waves,
and the inverse scattering transform. Prerequisite: TAM 541 or MATH 556; one of TAM 514, TAM 531, TAM 551.

TAM 524  Micromechanics of Materials  credit: 4 hours.
Advanced analysis of modern engineering materials with emphasis on relating microstructural phenomena to the mechanics of
material behavior: prediction of elastic and thermal properties of materials with heterogeneous microstructure (such as composites),
micromechanics of failure and damage, toughening mechanisms, mechanics of phase transformations; current topics in materials
research (such as high-temperature response and ferroelasticity). Prerequisite: CEE 300/TAM324 or ME 330; TAM 551.

TAM 525  Advanced Composite Materials  credit: 4 hours.
Same as AE 525. See AE 525.

TAM 526  Composites Manufacturing  credit: 4 hours.
Same as AE 526. See AE 526.

TAM 529  Viscoelasticity Theory  credit: 4 hours.
Same as AE 529. See AE 529.

TAM 531  Inviscid Flow  credit: 4 hours.
Dynamics of fluids in the limit of zero viscosity: governing equations of motion, kinematics, and vorticity transport; general theory of
irrotational flow, including two-dimensional potential flow, the complex potential, and three-dimensional potential flow; applications
to thin airfoil theory and free streamline theory; inviscid flows with vorticity; vortex dynamics; water wave theory; aspects of inviscid
compressible flow. Prerequisite: MATH 241 or MATH 380; MATH 285; TAM 435.

TAM 532  Viscous Flow  credit: 4 hours.
Dynamics of flow in which viscosity is significant or dominant, and the development and use of theoretical and numerical tools for
practitioners of modern fluid mechanics; physics of viscous layers that arise in both high- and low-Reynolds-number flows; dimensional
analysis, exact solutions to the Navier-Stokes equations; jets and wakes; microhydrodynamics; fluid stability; an introduction to
turbulence. Prerequisite: MATH 241 or MATH 380; MATH 285; TAM 435.

TAM 536  Instability and Transition  credit: 4 hours.
Stability of fluid motion: linearized flow equations and normal-mode analysis, Kelvin-Helmholtz instability, inviscid and viscous theory
of parallel shear flow. Squire's and Rayleigh's inflection-point theorems, secondary instability theory; critical layers; boundary-layer
stability; Orr-Sommerfeld equations, Tollmien-Schlichting waves; non-parallel theory, centrifugal instabilities, and Benard convection;
nonlinear theory and transition to turbulence; bifurcations, Landau's theory; routes to chaos, strange attractors; transition modeling, prediction, and control; boundary-layer receptivity, experimental evidence. Prerequisite: TAM 532.

TAM 537  Experimental Fluid Mechanics  credit: 4 hours.
Methods and techniques for measurement and analysis of data used in experimental fluid mechanics: signal processing, electronics, and electro-optics; fluid mechanical properties; experimental signal processing; random data and signal analysis; analog and digital data processing; dynamic similarity, self-preservation; pressure measurement, thermal anemometry, and laser-Doppler velocimetry; flow visualization, particle-image velocimetry. Lecture/lab format. Prerequisite: TAM 531 or TAM 532.

TAM 538  Turbulence  credit: 4 hours.
Instability and origins of chaotic motion in fluid flow; Reynolds averaging and statistical description of turbulence, correlations and spectral dynamics of homogeneous turbulence, anisotropic flows, coherent structures, inhomogeneous turbulence, transport models, and large-eddy simulations. Prerequisite: TAM 532.

TAM 539  Fluid Mechanics Seminar  credit: 1 hours.
Weekly seminar on current research topics in turbulent and other complex flows: theoretical modeling, numerical analysis, computational techniques, and experimental investigations. Recommended for graduate students in fluid mechanics. Approved for S/U grading only.

TAM 541  Mathematical Methods I  credit: 4 hours.
Vector and tensor algebra, introduction to complex-variable methods; ordinary differential equations, qualitative questions of existence and uniqueness; analytic solution methods, numerical methods, power-series solution and special functions; eigenvalue problems, Green's functions, Laplace transforms, stability of solutions; engineering applications drawn from mechanics. Prerequisite: MATH 241 or MATH 380; MATH 285.

TAM 542  Mathematical Methods II  credit: 4 hours.
Continuation of TAM 541. Modeling, inequalities, elements of functional analysis; partial differential equations, existence and uniqueness, second-order equations; hyperbolic conservation laws; numerical methods, eigenfunction expansions, integral transforms, and fundamental solutions; engineering applications drawn from mechanics. Prerequisite: TAM 541.

TAM 545  Advanced Continuum Mechanics  credit: 4 hours.
Unified treatment of modern continuum mechanics: mathematical preliminaries; review of kinematics and general balance laws; general theory of mechanical constitutive equations, including material constraints and material symmetry. Prerequisite: TAM 551.

TAM 549  Asymptotic Methods  credit: 4 hours.
Advanced methods of perturbation theory and asymptotic analysis, with examples drawn from classical dynamics, fluid mechanics, and wave propagation: asymptotics of integrals, singular perturbation theory (boundary layers, matched asymptotic expansions, and composite expansions), multiple scales, summation of series; special topics. Same as MATH 559, NPRE 559, and PHYS 522. Prerequisite: MATH 446 and TAM 541.

TAM 551  Solid Mechanics I  credit: 4 hours.
Mechanics of elastic deformable bodies, based on the fundamental concepts of modern continuum mechanics: kinematics, balance laws, constitutive equations; classical small-deformation theory; formulation of initial boundary-value problems of linear elastodynamics and boundary-value problems of linear elastostatics; variational formulations, minimum principles; applications of theory to engineering problems. Prerequisite: MATH 241 or MATH 380; MATH 285; TAM 251.

TAM 552  Solid Mechanics II  credit: 4 hours.
Continuation of TAM 551. Selected topics in linear elasticity (including St. Venant beam theory and plane problems of elastostatics), plasticity (including yield surfaces, von Mises and Tresca yield criteria, Drucker's stability postulate, J-flow theory, perfect plasticity, limit analysis, and slip-line theory), and fracture mechanics (including linear elastic analysis, fracture criteria for elastic brittle fracture, and elastic-plastic fracture). Prerequisite: MATH 241 or MATH 380; MATH 285; TAM 251.

TAM 554  Plasticity  credit: 4 hours.
Phenomenological and mathematical formulation of the constitutive laws of plasticity; yield criteria and their experimental verification; plastic stress-strain relations and their associated flow rules; correspondence between rate-independent and rate-dependent plasticity; solutions to basic boundary-value problems, including plane problems and those involving cylindrical and spherical symmetries, variational and minimum principles; limit analysis; plane-strain problems and crystal plasticity; finite-strain theory. Prerequisite: TAM 552.

TAM 555  Fracture Mechanics  credit: 4 hours.
Unified analytical treatment of modern fracture problems: macroscopic theories used to determine the static strength of bodies containing cracks; Griffith criterion, linear-elastic fracture mechanics, elastic-plastic fracture mechanics models; small-scale yielding
results and their implications; general yielding; interfacial fracture; fracture control; micromechanisms of fracture. Prerequisite: TAM 424 or MSE 440; TAM 541; TAM 552.

TAM 570  **Computational Fluid Mechanics**  credit: 4 hours.
Highly accurate and reliable techniques for large-scale numerical simulations of fluid flows: spectral numerical methods, including Fourier and other functional expansions, Galerkin and collocation projections, domain decompositions and the solution of partial differential equations, especially the Navier-Stokes equations; high-resolution methods for the solution of hyperbolic conservation laws with discontinuous solutions, and issues related to implementation on supercomputers. Same as CSE 560. Prerequisite: TAM 470 and TAM 542.

TAM 574  **Adv Finite Element Methods**  credit: 4 hours.
Advanced theory and applications of the finite-element method, as needed for research in computational science and engineering: applications to mechanics of solids and fluids, thermal problems, etc.; variational foundations of the finite-element method, error estimates, and adaptive analysis; finite-element methods for parabolic and hyperbolic problems; mixed finite-element methods; applications to systems of equations. Same as CSE 517. Prerequisite: One of TAM 470, CEE 570, CS 555, ME 471.

TAM 597  **Advanced Independent Study**  credit: 1 TO 8 hours.
Analytical, experimental, or computational studies in one or more areas of theoretical and applied mechanics, including solid mechanics, behavior of materials, fluid mechanics, dynamics, applied mathematics, and computational science and engineering. (Summer session, 1 to 4 hours). May be repeated. Prerequisite: Consent of instructor.

TAM 598  **Advanced Special Topics**  credit: 1 TO 4 hours.
Subject offerings of new and developing areas of knowledge in theoretical and applied mechanics intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. May be repeated in the same or separate terms if topics vary to a maximum of 12 hours.

TAM 599  **Thesis Research**  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated.
Technology Entrepreneurship

Technology Entrepreneurship
Director of Technology Entrepreneur Center: Andrew Singer
Department Office: 313 Ceramics Building, 105 South Goodwin Ave., Urbana
Phone: 244-3124
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TE 360  Lect in Engrg Entrepreneurship  credit: 1 hours.
Same as ENG 360. See ENG 360.

TE 461  Technology Entrepreneurship  credit: 3 hours.
Same as GE 461. See GE 461.

TE 560  Managing Advanced Technol I  credit: 1 hours.
Same as GE 560. See GE 560.

TE 561  Managing Advanced Technol II  credit: 1 hours.
Same as GE 561. See GE 561.

TE 565  Technol Innovation & Strategy  credit: 2 hours.
Same as ENG 565. See ENG 565.

TE 566  Finance for Engineering Mgmt  credit: 2 hours.
Same as ENG 566. See ENG 566.
### Theatre

**Head of Department:** Brant Pope  
**Department Office:** 4-122 Krannert Center for the Performing Arts, 500 South Goodwin, Urbana  
**Phone:** 333-3538  
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#### THEA 100  Practicum I  credit: 1 TO 3 hours.
Practical work in the design, construction, and handling of scenery, lighting, sound, properties, costumes, and makeup for public performance. A minimum of forty hours of production activity to be arranged for each credit hour. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor required for non-theatre majors.

#### THEA 101  Introduction to Theatre Arts  credit: 3 hours.
Introduction to the arts of theater for non-majors, including acting, design, directing, dramaturgy, and playwriting, together with a survey of theatrical history, minority theater, and plays by women. Attendance at Department of Theater productions (ticket fee required). Credit not given for both THEA 101 and THEA 102.
This course satisfies the General Education Criteria for a:  
UIUC: Literature and the Arts

#### THEA 102  Text to Stage  credit: 4 hours.
Practical exploration of theatre production for Theatre majors with emphasis on the collaborative contributions of playwrights, actors, directors, designers, and dramaturges, culminating in final group projects in planning productions of one-act plays. Attendance at Department of Theatre productions required. Credit not given for both THEA 101 and THEA 102. This course is required for all Theatre Majors.
This course satisfies the General Education Criteria for a:  
UIUC: Literature and the Arts

#### THEA 104  Introduction to Scenecraft  credit: 1 hours.
Introduction to stage scenecraft techniques: basic carpentry, rigging, and scene painting. Prerequisite: Enrollment limited to Theatre majors.

#### THEA 105  Intro to Costume Technology  credit: 1 hours.
Introduction to stage costume design and technology: approach to design, basic costume skills, and craft techniques. Prerequisite: Enrollment limited to Theatre majors.

#### THEA 106  Intro to Lighting Technology  credit: 1 hours.
Introduction to stage lighting design and practice: approach to lighting design, basic lighting technology, light plots, and instrument schedules. Practical experience on realized productions required. Prerequisite: Enrollment limited to Theatre majors.

#### THEA 107  Introduction to Stage Makeup  credit: 1 hours.
Introduction to stage makeup techniques: basic makeup painting, practice in corrective, aging, and character makeup, and introduction to creating facial hair and wigs. Prerequisite: Enrollment limited to Theatre majors.

#### THEA 125  Graphic Skills  credit: 3 hours.
Introduction to drawing, technical drafting, and model building for the theatre. Drawing and drafting supplies are required. Approved for both letter and S/U grading. Prerequisite: Enrollment limited to Theatre majors only.

#### THEA 126  Stage Mechanics I  credit: 3 hours.
Studies and training in materials, techniques, and processes used in executing scenery for the theater. Includes both classroom lectures and practical laboratory work in the Scenic Studio of Krannert Center. Enrollment limited to Theater majors in Scenic Technology or consent of instructor. Prerequisite: THEA 104.

#### THEA 170  Fundamentals of Acting I  credit: 3 hours.
Study of the methods of acting, with emphasis on basic acting techniques; role of character in relation to the play as a whole, the play's internal and emotional values, and their interpretation through voice and action.

#### THEA 175  Fundamentals of Acting II  credit: 3 hours.
Exploration and communication of experience through speech and action on the stage. Prerequisite: THEA 170.
THEA 199  **Undergraduate Open Seminar**  credit: 0 TO 5 hours.
May be repeated to a maximum of 12 hours. Approved for both letter and S/U grading.

THEA 203  **Theatre of Black Experience**  credit: 3 hours.
Surveys the history and literature, and studies dramatic works focused on the black experience through the rehearsal and performance of representative works of black dramatists. May be repeated to a maximum of 9 hours.

THEA 208  **Dramatic Analysis**  credit: 3 hours.
Introduction to the study of plays for theatre practitioners employing analytical methods and plays from modern theatre. Requires paper or project assignments for each play. Prerequisite: Consent of instructor required for non-theatre majors.

THEA 210  **Oral Interpretation**  credit: 3 hours.
Focuses on the analysis and performance of literature. Students will become familiar with basic principles of rhetorical and dramatic interpretation and participate in the performance of various texts, from prose to poetry, as well as dramas and more formal literature. Prerequisite: THEA 102 or consent of instructor.

THEA 211  **Introduction to Playwriting**  credit: 3 hours.
Practical course in writing for the stage, including a study of basic dramatic construction and the analysis of weekly writing assignments, focusing on structure, style, and imagination, and culminating in a final term project of a one-act play. Prerequisite: THEA 208 or consent of instructor.

THEA 212  **Introduction to Directing**  credit: 3 hours.
Practical course in directing for the stage, focusing on script analysis, script preparation, casting, staging techniques, and design strategies, culminating in a directorial concept presentation of a contemporary play. Prerequisite: THEA 208.

THEA 218  **Intro to Social Issues Theatre**  credit: 3 hours.
An introductory exploration/survey of the rich histories, theories, and practices of community-based and social issues theatre. Through discussion, participation, lecture, and performance, representative works, movement, and artists will be explored. Lively connections will be made to an array of social issues in today's world. Same as GWS 218.

THEA 220  **Survey of Theatrical Design**  credit: 3 hours.
Survey of design elements in theatrical production including the function of scenery, costuming, lighting, and sound in conveying directorial concepts, style, and dramatic meaning. Intended for students not concentrating on theatrical design, this course requires both theoretical and practical projects. Prerequisite: THEA 102, THEA 208, or consent of instructor.

THEA 222  **Introduction to Scenic Design**  credit: 3 hours.
Projects and lectures addressing basic technical and aesthetic skills of scene design. Enrollment limited to Theatre majors. Prerequisite: THEA 102, THEA 104.

THEA 223  **Intro to Technical Direction**  credit: 4 hours.
Studies in the basic principles of technical direction and practical laboratory training in the materials, techniques, and processes for scenic construction and associated technologies. Enrollment limited to Theater majors only. Prerequisite: THEA 104.

THEA 231  **Intro to Lighting Design**  credit: 3 hours.
Studio course analyzing current lighting practices and equipment by means of production oriented assignments.

THEA 260  **Intro Asian American Theatre**  credit: 3 hours.
Introduction to Asian American theatre, with emphasis on theatre companies, actors, playwrights, and audiences, through the reading of major dramatic works, examining production histories, and viewing Asian American performances and film. Same as AAS 260.

This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: US Minority Culture(s)

THEA 262  **Literature of Modern Theatre**  credit: 3 hours.
Introduction to the principal modes of dramatic expression from around 1870 to the present day. Prerequisite: Completion of campus Composition I general education requirement and THEA 208; or consent of instructor.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Advanced Composition

THEA 270  **Relationships in Acting I**  credit: 3 hours.
Behavior in stage performance explored on the basis of the actor’s relationship with self, with objects, and with other players; emphasizes analysis of playscript to discover action, environment, and relationships. Prerequisite: THEA 175 or consent of instructor.

THEA 271  **Voice and Movement I**  credit: 2 hours.
Fundamental development of vocal production as connected to body awareness and movement for the actor. Various exercised, conditioning, and training methods are used. Prerequisite: THEA 175 or consent of instructor.

THEA 275  **Relationships in Acting II**  credit: 3 hours.
Beginning scene work with special emphasis on analysis of plays, roles, characterization, and application of skills learned through improvisation and relationships in acting. Prerequisite: THEA 270 or consent of instructor.

THEA 276  **Voice and Movement II**  credit: 2 hours.
Further development of the interconnected vocal production and movement processes for the actor. Various exercised, conditioning, and training methods are used. Prerequisite: Enrollment limited to Theatre majors only.

THEA 362  **Chekhov**  credit: 3 hours.
Same as RUSS 325 and CWL 325. See RUSS 325.

THEA 371  **Acting Studio I: Dynamics**  credit: 1 hours.
Development of movement and voice skills for actors. Enrollment limited to Theatre majors. Prerequisite: THEA 275, consent of chair of Acting Program, and concurrent registration in THEA 372, THEA 373, and THEA 374.

THEA 372  **Acting Studio I: Voice**  credit: 2 hours.
Concentrated training in standard speech for the stage and the International Phonetic Alphabet. Enrollment limited to Theatre majors. Prerequisite: THEA 275, consent of chair of Acting Program, and concurrent registration in THEA 371, THEA 373, and THEA 374.

THEA 373  **Acting Studio I: Movement**  credit: 2 hours.
Concentrated training in movement skills and mask characterization. Enrollment limited to Theatre majors. Prerequisite: THEA 275, consent of chair of Acting Program, and concurrent registration in THEA 371, THEA 372, and THEA 374.

THEA 374  **Acting Studio I: Acting**  credit: 3 hours.
Acting in realistic and naturalistic plays. A performance is given at the end of the term. Enrollment limited to Theatre majors. Prerequisite: THEA 275, consent of chair of Acting Program, and concurrent registration in THEA 371, THEA 372, and THEA 373.

THEA 375  **Acting Studio II: Dynamics**  credit: 1 hours.
Continuing development of movement and voice skills for actors. Enrollment limited to Theatre majors. Prerequisite: THEA 371, THEA 372, THEA 373 and THEA 374, and concurrent registration in THEA 376, THEA 377 and THEA 378.

THEA 376  **Acting Studio II: Voice**  credit: 2 hours.
Continued training in standard speech for the stage and the International Phonetic Alphabet. Enrollment limited to Theatre majors. Prerequisite: THEA 371, THEA 372, THEA 373, and THEA 374, and concurrent registration in THEA 375, THEA 377 and THEA 378.

THEA 377  **Acting Studio II: Movement**  credit: 2 hours.
Concentrated training in movement for the stage, body alignment and awareness. Enrollment limited to Theatre majors. Prerequisite: THEA 371, THEA 372, THEA 373, and THEA 374; and concurrent registration in THEA 375, THEA 376 and THEA 378.

THEA 378  **Acting Studio II: Acting**  credit: 3 hours.
Development of acting skills for musical theatre including dance, singing, and the analysis of British and American musical theatre materials. A performance is given at the end of the term. Enrollment limited to Theatre majors. Prerequisite: THEA 371, THEA 372, THEA 373, and THEA 374, and concurrent registration in THEA 375, THEA 376 and THEA 377.

THEA 391  **Individual Topics**  credit: 2 hours.
Individual projects and problems. Prerequisite: Consent of instructor.

THEA 392  **Individual Topics**  credit: 2 hours.
Individual projects and problems. Prerequisite: Consent of instructor.

THEA 399  **Undergraduate Group Seminar**  credit: 1 TO 4 hours.
Group exploration of specialized topics. May be repeated in the same term to a maximum of 8 hours. May be repeated in subsequent terms to a maximum of 12 hours.

THEA 400  **Practicum II**  credit: 1 TO 3 hours.
Advanced practical work in acting; theatre management; dramaturgy and directing; and the design, construction, and handling of
scenery, lighting, sound, properties, costumes, and makeup for public performance. May be repeated to a maximum of 12 hours.
Prerequisite: Enrollment limited to Theatre majors.

THEA 408  AEA Union Stage Management  credit: 3 OR 4 hours.
Exploration of the Actors’ Equity Association LORT contract; practices and concerns. Emphasis on practical use of union contracts
with particular focus on workplace rules and regulations. 3 undergraduate hours. 4 graduate hours. Prerequisite: THEA 451.

THEA 409  Stage Management Workshop  credit: 3 OR 4 hours.
Explores advanced topics in stage management focusing on practical applications of principles learned in earlier courses. Possible
topics include: Touring Stage Management, Stage Managing Opera and Dance, and Production Management. 3 undergraduate hours.
4 graduate hours. May be repeated in the same or separate terms to a maximum of 6 undergraduate hours or 8 graduate hours as
topics vary. Prerequisite: THEA 445 and THEA 446.

THEA 410  Dramaturgs Workshop  credit: 3 OR 4 hours.
Seminar course focusing on the role of the dramaturg in the collaborative process. 3 undergraduate hours, 4 graduate hours. May be
repeated to a maximum of 6 undergraduate hours and 12 graduate hours as topics vary.

THEA 411  Playwrights Workshop  credit: 3 hours.
Seminar course focusing on the role of the playwright in the collaborative process. Course may be repeated as topics will vary. May be
repeated to a maximum of 6 undergraduate hours or 9 graduate hours. Prerequisite: THEA 211.

THEA 412  Directors Workshop  credit: 3 hours.
Seminar course exploring the role of the director in the collaborative process. Course may be repeated as topics will vary. May be
repeated to maximum of 6 undergraduate hours or 9 graduate hours. Prerequisite: THEA 212.

THEA 415  Scenic Design I  credit: 4 hours.
Advanced problems in scene design for period and style plays and development of professional portfolio. May be repeated to a
maximum of 8 hours if topics vary. Cannot repeat a section already taken. Prerequisite: THEA 222 or consent of instructor.

THEA 416  Scenic Design II  credit: 4 hours.
Advanced problems in scene design for non-proscenium theatres and television, film, and industrial design. Enrollment limited to
Theatre majors. 4 undergraduate hours. May be repeated to a maximum of 8 hours if topics vary. Cannot repeat a section already
taken. Prerequisite: THEA 415 or consent of instructor.

THEA 417  Leading Post-Perform Dialog  credit: 4 hours.
Study of the history, processes, and methods of leading discussions with social issues theatre audiences. Emphasis on the skills and
techniques of facilitators/peer educators; artistic considerations; function and application of the dramaturg; and practical experience
through facilitation of social issues theatre dialog. Same as GWS 417. Prerequisite: Junior standing or above or consent of instructor.

THEA 418  Devising Social Issues Theatre  credit: 3 OR 4 hours.
Focuses on the role of the artist as ‘cultural worker’ through devising theatre in a community-based context that is explicitly concerned
with social and/or health-related issues. While there is substantial research, reading and critique involved, the overall experience will be
that of rigorously composing theatrical work vital to the community. Same as GWS 418. 3 undergraduate hours. 4 graduate hours.

THEA 419  CAD Drafting for the Stage  credit: 3 hours.
Study and application of computer-aided design techniques for scenery construction and design, focusing on the use of AutoCAD to
create technical drawings for theatre. This course may not be repeated for credit. Prerequisite: THEA 425; enrollment limited to Theatre
majors or by consent of instructor.

THEA 421  Stage Electronics  credit: 3 hours.
Laboratory course to familiarize theatre students with the components, current wiring practices, and control techniques of theatrical
electrical and electronic systems. Enrollment limited to Theatre majors. Prerequisite: THEA 106 and THEA 125.

THEA 423  Advanced Lighting Design  credit: 3 hours.
Lighting design for the proscenium, arena, and thrust stage. Enrollment limited to Theatre majors. Not offered for graduate credit.
Prerequisite: THEA 231.

THEA 425  Stage Drafting  credit: 3 hours.
Traditional and digital drafting techniques for scenic and lighting design and for technical production. Enrollment limited to Theatre
majors. Prerequisite: THEA 125.

THEA 426  History of Decor  credit: 3 hours.
Historical and comparative survey of designs, motifs, and forms of decor in the West. Emphasis on the relation between research and design for the stage. Enrollment limited to Theatre majors. Prerequisite: THEA 222.

THEA 427  Scene Painting  credit: 2 hours.
Techniques and practice of scene painting; lab time required. Prerequisite: Consent of instructor.

THEA 430  Technical Direction  credit: 3 hours.
Advanced studies in technical direction and theatre production organization. Prerequisite: THEA 223 or consent of instructor.

THEA 431  Video Lighting and Production  credit: 3 hours.
Study and practical application of basic television techniques with primary emphasis on lighting. Trips will be made to local television stations as well as major studios in Chicago to meet with lighting directors. Enrollment limited to Theatre majors. Cost of field trips will be paid by student. Prerequisite: THEA 231, THEA 232, and THEA 435.

THEA 432  Lighting for the Musical Stage  credit: 3 OR 4 hours.
Emphasis on lighting design for musicals, opera, and music concerts. Field trips will be made to area productions. Enrollment limited to Theatre majors. 3 undergraduate hours. 4 graduate hours. Cost of field trips will be paid by student. Prerequisite: THEA 231, THEA 232, and THEA 435.

THEA 433  Business of Lighting Design  credit: 3 hours.
Practical approach to working as a lighting designer in professional theatre, including working in non-traditional spaces, regional theatres, touring shows, designing in foreign countries, working on new plays, the role of an assistant, and finding work and negotiating contracts. At least two field trips will be required. Enrollment limited to Theatre majors. Prerequisite: THEA 231, THEA 232, and THEA 432.

THEA 435  Professional Lighting Systems  credit: 2 hours.
Practical study of state-of-the-art lighting technology for the theatre, using the facilities of the Krannert Center for the Performing Arts. In-depth study of lighting control systems and programming, instrument maintenance, special effects, and the role of the master electrician in production. May not be repeated for credit. Prerequisite: THEA 104.

THEA 436  Lighting Alternative Spaces  credit: 3 hours.
Survey of theatrical lighting techniques in such non-traditional environments as private homes and museums with emphasis on theoretical and practical considerations of design. Course culminates in large-scale outdoor final project. Prerequisite: THEA 432 or consent of instructor for Theatre students. ARCH 241 and junior standing for Architecture students. LA 343 and junior standing for Landscape Architecture students. All other students, consent of instructor.

THEA 437  Software for Lighting Design  credit: 2 hours.
Practical study of lighting design software currently used in the professional theatre and the entertainment industry. As technology evolves and new software developed, software programs will be added. Accommodating upgrades may necessitate offering the course every other year. May be repeated to a maximum of 4 hours. Prerequisite: THEA 231, THEA 232, and THEA 425.

THEA 439  Stage Mechanics II  credit: 3 hours.
Examines newly accepted and developing techniques and materials used in constructing and rigging stage scenery with emphasis on metalworking. Enrollment limited to Theatre majors. Prerequisite: THEA 104.

THEA 440  Stage Mechanics III  credit: 3 hours.
Study in advanced scenery methods and materials, including advanced woodworking, plastic-craft, and rigging. Enrollment limited to Theatre majors. Prerequisite: THEA 126.

THEA 442  Costume Patterning  credit: 3 OR 4 hours.
Methods of draping and drafting patterns for period theatrical costumes. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of instructor.

THEA 444  Costume Draping  credit: 4 hours.
Development of patterns for theatrical costumes through advanced draping techniques. Extensive lab work culminating in draping and constructing. Prerequisite: THEA 442.

THEA 445  Costume History and Design I  credit: 2 OR 4 hours.
Surveys theatrical costume and fashion of major periods; emphasizes relationships to styles of art and dramaturgy, social milieu, and production design. Prerequisite: Consent of instructor.

THEA 446  Costume History and Design II  credit: 2 OR 4 hours.
Continuation of THEA 445. Prerequisite: THEA 445 or equivalent.
THEA 447  Costume Rendering  credit: 3 OR 4 hours.
Studio course in costume rendering techniques: analysis of costume figure, rendering of fabrics, exploration of various rendering media. Enrollment limited to Theatre majors. 3 undergraduate hours. 4 graduate hours. Prerequisite: Consent of instructor.

THEA 448  Advanced Costume Crafts  credit: 3 OR 4 hours.
The research, rendering, and execution of armor, millinery, jewelry, and masks; dyeing with natural substances and with chemical dyes and the art of distressing clothing to achieve an aged, worn, tired or tattered look. Student is responsible for providing all materials used to complete the various projects. 3 undergraduate hours. 4 graduate hours. Prerequisite: THEA 445 and THEA 446.

THEA 449  Costume Fabrication  credit: 4 hours.
Explores, through design projects, the appropriateness of various fabrics for specific costumes determined by historical accuracy, style, and constructability. Prerequisite: THEA 445 and THEA 446.

THEA 450  Management Seminar  credit: 1 hours.
Addresses production and management issues surrounding Theater Department and KCPA productions. Guest speakers provide professional points of view on various management topics. May be repeated in separate terms to a maximum of 6 undergraduate or 6 graduate hours.

THEA 451  Principles of Stage Management  credit: 3 OR 4 hours.
Studies in the principles and the craft of stage management. Enrollment limited to Theatre majors. 3 undergraduate hours. 4 graduate hours. Prerequisite: Minimum of sophomore standing in a Theatre curriculum.

THEA 452  Principles of Arts Management  credit: 3 OR 4 hours.
Introduction to the basic practices of theatre and arts management with emphasis on facilities management, arts marketing, and financial planning in the performing arts. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior, senior or graduate standing in theatre.

THEA 453  Theatre Sound Technology  credit: 3 hours.
Exploration of audio production techniques and equipment, as related to theatre sound. Related topics include acoustics, electronics, and music. Prerequisite: Enrollment limited to junior, senior or graduate theatre majors.

THEA 454  Sound Design I  credit: 3 hours.
Introduction to sound reproduction, recording, and basic systems design as applied to the modern theatre. Prerequisite: THEA 453, THEA 455 and THEA 459.

THEA 455  Audio Production  credit: 2 hours.
Project-based study of professional techniques in audio recording, mixing, and editing for music, theatre, and film production, utilizing current digital technology. May be repeated to a maximum of 6 hours. Prerequisite: THEA 453.

THEA 456  Properties Design  credit: 2 hours.
Principles of stage property design, planning and management. Prerequisite: THEA 104.

THEA 457  Senior Projects in Design, I  credit: 6 hours.
Professional studio and independent projects for student designers specializing in stage scenery, lighting, or costume design. 6 undergraduate hours. Prerequisite: Senior standing in Theatre; Consent of instructor required for non-theatre majors.

THEA 458  Senior Projects in Design, II  credit: 6 hours.
Continuation of THEA 457. Enrollment limited to Theatre majors. 6 undergraduate hours. Prerequisite: THEA 457.

THEA 459  Sound Systems  credit: 2 hours.
Project-based study of professional techniques in sound system applications and design for sound reinforcement in music, theatre, and architectural applications. May be repeated to a maximum of 6 hours. Prerequisite: THEA 453.

THEA 460  Multi-Ethnic Theatre  credit: 4 hours.
Focuses on the history and aesthetics of African, Asian, African American, Asian American, Latino/Latina, and Native American plays and productions. Prerequisite: THEA 102.

THEA 461  History of Theatre I  credit: 4 hours.
History of the drama and theatre of ancient Greece and Rome, the Middle Ages, and the Italian and English Renaissance. Prerequisite: Junior standing or consent of instructor.

THEA 462  History of Theatre II  credit: 4 hours.
History of the drama and theatre of the Spanish Renaissance, seventeenth-century France, the English Restoration, the eighteenth and
nineteenth centuries in Europe and America, and Asia. Prerequisite: THEA 461 or consent of instructor.

THEA 463  **American Theatre History I**  credit: 3 OR 4 hours.
Survey of the development of American theatre as a cultural, social, political, and economic institution from the colonial era to 1900. 3
undergraduate hours. 4 graduate hours. Prerequisite: Junior, senior, or graduate standing.

THEA 464  **American Theatre History II**  credit: 3 OR 4 hours.
Survey of the development of American theatre as a cultural, social, political, and economic institution from the late nineteenth century
to the present. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior, senior or graduate standing.

THEA 465  **Musical Theatre History**  credit: 4 hours.
History of the American musical in the twentieth century, studied through the contributions of major composers, lyricists, directors, and
choreographers. Prerequisite: Junior standing or above, or consent of instructor.

THEA 467  **Contemporary Theatrical Forms**  credit: 3 OR 4 hours.
Study of post-World War I theatre, including the New Stagecraft, expressionism, Brecht and epic theatre, theatre of the absurd, and
later developments. 3 undergraduate hours. 4 graduate hours. Prerequisite: THEA 208, THEA 261, and junior, senior or graduate
standing.

THEA 471  **Acting Studio III: Dynamics**  credit: 1 hours.
Continuing development of movement and voice skills for actors. Enrollment limited to Theatre majors. 1 undergraduate hour. No
graduate credit. Prerequisite: THEA 375, THEA 376, THEA 377 and THEA 378, and concurrent registration in THEA 472, THEA 473
and THEA 474.

THEA 472  **Acting Studio III: Voice**  credit: 2 hours.
Advanced training in voice and speech for the stage with emphasis on classic texts. Enrollment limited to Theatre majors. 2
undergraduate hours. No graduate credit. Prerequisite: THEA 375, THEA 376, THEA 377 and THEA 378, and concurrent registration in
THEA 471, THEA 473 and THEA 474.

THEA 473  **Acting Studio III: Movement**  credit: 2 hours.
Training in stage combat, sword, and rapier. Enrollment limited to Theatre majors. 2 undergraduate hours. No graduate credit.
Prerequisite: THEA 375, THEA 376, THEA 377 and THEA 378, and concurrent enrollment in THEA 471, THEA 472 and THEA 474.

THEA 474  **Acting Studio III: Acting**  credit: 3 hours.
Acting in Shakespearean and other Elizabethan, Jacobean, and Caroline drama. A performance is given at the end of the term.
Enrollment limited to Theatre majors. 3 undergraduate hours. No graduate credit. Prerequisite: THEA 375, THEA 376, THEA 377 and
THEA 378, and concurrent enrollment in THEA 471, THEA 472 and THEA 473.

THEA 475  **Acting Studio IV: Dynamics**  credit: 1 hours.
Continuing development of movement and voice skills for actors. Enrollment limited to Theatre majors. 1 undergraduate hour. No
graduate credit. Prerequisite: THEA 471, THEA 472, THEA 473 and THEA 474, and concurrent enrollment in THEA 475, THEA 476,
THEA 477 and THEA 478.

THEA 476  **Acting Studio IV: Voice**  credit: 2 hours.
Advanced training in voice and speech for the stage with emphasis on dialects. Enrollment limited to Theatre majors. 2 undergraduate
hours. No graduate credit. Prerequisite: THEA 471, THEA 472, THEA 473 and THEA 474, and concurrent enrollment in THEA 475,
THEA 476 and THEA 478.

THEA 477  **Acting Studio IV: Movement**  credit: 2 hours.
Advanced training in unarmed stage combat and quarterstaff. Enrollment limited to Theatre majors. 2 undergraduate hours. No
graduate credit. Prerequisite: THEA 471, THEA 472, THEA 473 and THEA 474, and concurrent enrollment in THEA 475, THEA 476
and THEA 478.

THEA 478  **Acting Studio IV: Acting**  credit: 3 hours.
Studies in the techniques of acting for the camera and cold readings; analysis of distinguished film acting. Scenes are recorded in the
television studio. Enrollment limited to Theatre majors. 3 undergraduate hours. No graduate credit. Prerequisite: THEA 471, THEA 472,
THEA 473 and THEA 474, and concurrent enrollment in THEA 475, THEA 476 and THEA 477.

THEA 479  **Preparation for Auditions**  credit: 2 hours.
Each actor, through extensive research, prepares a portfolio of audition pieces for the opportunities imminent before and after
graduation for resident companies, commercial productions, and film, or professional graduate schools. Enrollment limited to Theatre
majors. Prerequisite: THEA 375, THEA 376, THEA 377, THEA 378.
THEA 483  **Ibsen in Translation**  credit: 3 OR 4 hours.
Same as CWL 463 and SCAN 463. See SCAN 463.

THEA 484  **Strindberg in Translation**  credit: 3 OR 4 hours.
Same as CWL 464 and SCAN 464. See SCAN 464.

THEA 486  **Drama in Premodern Japan**  credit: 3 OR 4 hours.
Same as CWL 470, EALC 463, and RLST 485. See EALC 463.

THEA 487  **Modern Japanese Drama**  credit: 3 OR 4 hours.
Same as CWL 462, EALC 464, and RLST 464. See EALC 464.

THEA 488  **Premodern Chinese Drama**  credit: 3 OR 4 hours.
Same as CWL 416 and EALC 413. See EALC 413.

THEA 490  **Professional Internship**  credit: 0 TO 14 hours.
Professional work with an approved host theatre or institution in an area related to the student's academic program; exposure to and participation in professional theatre. Full documentation and approval of internship activities required. 0 to 14 undergraduate hours. 0 to 12 graduate hours. May be repeated in the same or subsequent terms as topics vary. Approved for S/U grading only. Prerequisite: Junior, senior, or graduate standing in Theatre; consent of Internship Coordinator.

THEA 505  **Proseminar in Theatre Practice**  credit: 4 hours.
Orientation to production activity at the Krannert Center for the Performing Arts, review of contemporary theatre practice in the United States, survey of methods in production research, and selected projects in theatre specialties. Prerequisite: Enrollment limited to Theatre majors.

THEA 550  **Colloquium Design & Theat Tech**  credit: 4 OR 8 hours.
Projects in design for the theatre or in theatre technology, including stage scenery, costuming, lighting, makeup, projections, and sound and stage systems. May be repeated to a maximum of 32 hours. Prerequisite: Enrollment limited to graduate students in theatre design and technology.

THEA 560  **Seminar in Theatre History**  credit: 4 hours.
Studies in the history of the theatre. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.

THEA 561  **Seminar in Dramatic Literature**  credit: 4 hours.
Advanced studies of plays as dramatic literature in historical and theoretical contexts. Selection of plays may vary each semester. May be repeated in separate terms to a maximum of 16 graduate hours.

THEA 562  **Seminar in Theatre Theory**  credit: 4 hours.
Studies in theories of drama, theatre, and performance. Examination of major theorists in both theatre scholarship and critical theory. Emphasis placed on studies in methodology. Specific topics may vary. May be repeated in separate terms to a maximum of 16 hours.

THEA 564  **Stud Theatre Hist 20th Century**  credit: 4 hours.
Examines selected movements and contributors to the theatre from the late nineteenth-century to the contemporary period. May be repeated to a maximum of 8 hours with approval. Prerequisite: Consent of instructor.

THEA 571  **Colloquium in Acting: Dynamics**  credit: 1 hours.
Intensive professional training in voice and movement skills for the actor. May be repeated to a maximum of 6 hours. Prerequisite: Enrollment limited to graduate acting students; concurrent registration in THEA 572, THEA 573 and THEA 574.

THEA 572  **Colloquium in Acting: Voice**  credit: 2 hours.
Intensive professional training in voice and speech for the actor. May be repeated to a maximum of 12 hours. Prerequisite: Enrollment limited to graduate acting students; concurrent registration in THEA 571, THEA 573 and THEA 574.

THEA 573  **Colloquium in Acting: Movement**  credit: 2 hours.
Intensive professional training in movement and stage combat for the actor. May be repeated to a maximum of 12 hours. Prerequisite: Enrollment limited to graduate acting students; concurrent registration in THEA 571, THEA 572 and THEA 574.

THEA 574  **Colloquium in Acting: Acting**  credit: 3 hours.
Intensive professional training in acting with a different focus each term on a particular style of dramatic literature. May be repeated to a maximum of 18 hours. Prerequisite: Enrollment limited to graduate acting students; concurrent registration in THEA 571, THEA 572 and THEA 573.
THEA 591  **Special Problems**  credit: 0 TO 8 hours.
Individual research in selected topics by arrangement with the instructor. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

THEA 595  **Creative Project**  credit: 1 TO 8 hours.
Open to MFA candidates in theatre only. Prerequisite: Consent of instructor.

THEA 599  **Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only. Prerequisite: Consent of instructor.
Technology and Management Courses

Engineering
Program Administrator: Darcy Sementi
Program Office: 470K Wohlers Hall, 1206 South Sixth, Champaign
Phone: 244-5752
www.engr.uiuc.edu

TMGT 365  New Product Marketing  credit: 3 hours.
           Same as BADM 365. See BADM 365.

TMGT 366  Product Design and Development  credit: 3 hours.
           Same as BADM 366. See BADM 366.

TMGT 367  Mgmt of Innov and Technology  credit: 3 hours.
           Same as BADM 367. See BADM 367.

TMGT 460  Business Process Modeling  credit: 3 hours.
           Same as BADM 460. See BADM 460.

TMGT 461  Integrated Project  credit: 2 hours.
           Same as BADM 461. See BADM 461.
Technical Systems Management

Agricultural and Biological Engineering
Head of Department: K.C. Ting
Department Office: 338 Agricultural Engineering Sciences Building, 1304 West Pennsylvania Avenue, Urbana
Phone: 333-3570
www.age.uiuc.edu

TSM 100  **Technical Systems in Agr**  credit: 3 hours.
Examples, problems, discussions, and laboratory exercises pointing to present and potential engineering applications in agriculture; emphasis on power and machinery, soil and water control, electricity, and structures. Includes laboratory.

TSM 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Open seminar or experimental course on a topic in technical systems management. May be repeated to a maximum of 12 hours.

TSM 232  **Materials and Construction Sys**  credit: 3 hours.
Selection, use, and maintenance of hand and power tools; shop safety; selection of building and roofing materials; concrete masonry construction; and site preparation. Includes laboratory. Priority is given to technical systems management majors.

TSM 233  **Metallurgy & Welding Process**  credit: 3 hours.
Selecting and using metal-arc, inert-gas, submerged arc, oxyacetylene welding and plasma cutting processes for construction and maintenance. Includes laboratory. See Class Schedule for materials charge.

TSM 234  **Wiring, Motors and Control Sys**  credit: 3 hours.
Selecting and using wiring materials, electric motors and controls in lighting, heating, ventilation, and materials handling problems. Includes laboratory. Prerequisite: TSM 100.

TSM 262  **Off-Road Equipment Management**  credit: 4 hours.
Performance, costs, application, selection, and replacement of farm tractors and field implements; optimization of mechanized agricultural field operations. Includes laboratory. Prerequisite: TSM 100.

TSM 293  **Off-Campus Internship**  credit: 1 TO 4 hours.
Supervised off-campus experience in a field directly pertaining to technical systems management. May be repeated to a maximum of 6 hours. Prerequisite: Sophomore standing and consent of instructor.

TSM 295  **Undergrad Research or Thesis**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated to a maximum of 12 hours. Prerequisite: Sophomore standing, cumulative GPA of 2.5 or above at the time the activity is arranged, and consent of instructor.

TSM 311  **Humanity in the Food Web**  credit: 3 hours.
The human food web is the complex network of technologies, environments, people, and social institutions that produces, processes, and distributes the world’s food supply. Students will study the food webs of the past, present, and future and will explore various human roles, including their own, in the global technology-environment-society-food system. Course topics include domestication, mechanization, urbanization, the green revolution, biotechnology, food safety, the environment, and appropriate technologies for developing countries.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Advanced Composition

TSM 352  **Land and Water Mgt Systems**  credit: 3 hours.
Principles of planning, implementing and utilizing land and water practices for Illinois land uses, especially agriculture. Includes laboratory. Prerequisite: Completion of Quantitative Reasoning requirement.

TSM 363  **Fluid Power Systems**  credit: 2 hours.
Emphasizes basic principles of fluid power systems related to off-road vehicles. Topics include fundamentals of fluid power systems, principles of key fluid power components, and maintenance of fluid power systems. Credit is not given for both TSM 363 and ABE 221.

TSM 371  **Residential Housing Design**  credit: 3 hours.
Principles and practices in residential housing; space planning, house types, structures, materials, utilities, environmental control, energy conservation, remodeling, and economic influences. Includes laboratory.

TSM 372  **Environ Control & HVAC Systems**  credit: 3 hours.
Introduction to heating, ventilating, and air-conditioning (HVAC) systems for building environment control. Topics include: psychrometrics, basic calculation of heating and cooling loads, human comfort and ventilation requirements, typical HVAC and control systems.

TSM 381  **Grain Drying & Storage Systems**  credit: 3 hours.
Grain drying fundamentals, air-moisture relationships, grain drying systems for efficient energy use, fans, grain-handling devices and systems, planning of grain handling systems, grain standards, moisture measurement, grain storage, fungi and insect problems, aeration, processing and milling of corn and soybeans. Includes laboratory.

TSM 396  **UG Honors Research or Thesis**  credit: 1 TO 4 hours.
Individual research, special problems, thesis, development and/or design work under the direction of the Honors advisor. May be repeated to a maximum of 12 hours. Prerequisite: Junior standing, admission to the ACES Honors Program, and consent of instructor.

TSM 421  **Ag Safety-Injury Prevention**  credit: 3 hours.
Issues associated with agricultural injuries and their prevention. Areas include: agricultural injury situation; injury causation; injury intervention strategies and their applications to agricultural issues; and, specific safety issues in the areas of farm machinery, grain and forage systems, animals, materials handling, electricity, fire safety, special populations, and emergency preparedness.

TSM 422  **Ag Health-Illnesses Prevention**  credit: 3 hours.
Overview of occupational illnesses and diseases in the agricultural industry and its practices. Hazards within agricultural production are examined and potential hazards to non-farm populations and those interacting with production personnel are explored. Agricultural industry practices are summarized and potential human health effects of specific practices identified. Specific preventative measures are outlined to reduce exposures and remediate exposure symptoms. Interaction with health/medical professionals is on-going during the semester to familiarize students with medical procedures pertinent to agricultural occupational medicine.

TSM 425  **Managing Ag Safety Risk**  credit: 3 hours.
Management aspects of farm and agriculturally related business safety and health. Topics include: orientation to farm and agricultural related business safety and health issues, legal and ethical responsibilities, liability issues, injury/illness incident investigation, agricultural safety and health resources, how to approach and organize a safety and health management plan, and safety and health worker education and training. Case study approach to devise a safety and health management plan for an existing farm or agricultural related business. Team work to emulate development of safety management programs in general industry. Student exposure through class discussion exercises to recent agricultural safety and health research studies conducted in North America and Europe. Prerequisite: Credit or concurrent registration in TSM 421 or TSM 422, or consent of instructor.

TSM 430  **Project Management**  credit: 2 hours.
Same as ABE 430. See ABE 430.

TSM 435  **Elec Computer Ctrl Sys**  credit: 3 hours.
Microcomputer and electrical control applications; electrical fundamentals; solid-state devices; relays; biosensors; motor types and characteristics; three-phase power; logic devices; analog/digital convertors; and interfacing for agricultural control applications. Includes laboratory.

TSM 436  **Renewable Energy Systems**  credit: 3 OR 4 hours.
Same as ABE 436. See ABE 436.

TSM 455  **Erosion and Sediment Control**  credit: 2 hours.
Same as ABE 455 and TSM 455. See ABE 455.

TSM 464  **Engine and Tractor Power**  credit: 3 hours.
Construction, performance and maintenance of internal combustion engines, power trains, and hydraulic systems for off-road equipment; methods and equipment for performance testing; and weight transfer and traction. Includes laboratory.

TSM 465  **Chemical Applications Systems**  credit: 3 hours.
Hydraulic principles; liquid application systems including pumps, controls, and spray nozzles; granular application systems; safe storage, handling, and disposal of pesticides and fertilizers; federal and state legal requirements. Includes laboratory.

TSM 486  **Grain Bioprocessing Coproducts**  credit: 3 hours.
Bioprocessing of cereals and oilseeds by milling, fermentation and extraction processes in the production of a wide variety of coproducts used in animal foods. Includes the effects of the process variables and bioprocess on coproduct quality and the post-processing of coproducts.

**TSM 496  Independent Study  credit: 1 TO 4 hours.**

Individual research, special problems, thesis, development and/or design work under the supervision of a faculty member. May be repeated to a maximum of 6 hours. Prerequisite: consent of instructor.

**TSM 499  Seminar  credit: 1 TO 3 hours.**

Group discussion or an experimental course on a special topic in technical systems management. May be repeated to a maximum of 12 hours.
Turkish

Linguistics
Head of Department: Elabbas Benmamoun
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3563
www.linguistics.uiuc.edu

TURK 201  **Elementary Turkish I**  credit: 5 hours.
Mastery of Turkish alphabet and phonetics; elementary formal grammar and the development of reading and writing skills; and conversation in the formal noncolloquial style. Participation in the laboratory is required.

TURK 202  **Elementary Turkish II**  credit: 5 hours.
Continuation of TURK 201, with introduction of more advanced grammar; emphasis on more fluency in speaking, reading, and writing simple sentences in standard Turkish. Participation in the language laboratory required. Prerequisite: TURK 201 or equivalent.

TURK 403  **Intermediate Turkish I**  credit: 4 hours.
Continuation of TURK 202; emphasis on the development of appropriate reading, writing, speaking, and comprehension skills in Standard and Colloquial Turkish, with increased attention to ordinary written texts. Prerequisite: TURK 202 or equivalent.

TURK 404  **Intermediate Turkish II**  credit: 4 hours.
Continuation of TURK 403; emphasis on the development of better receptive and productive language skills in Standard and Colloquial Turkish, with increased attention to both written and spoken texts. Prerequisite: TURK 403 or equivalent.

TURK 405  **Advanced Turkish I**  credit: 3 hours.
Third-year Turkish with emphasis on conversational fluency and on increased ability in reading and comprehending texts, including newspaper prose and Turkish cultural materials. Course will also deal with the advanced level grammar found in such texts. Prerequisite: TURK 404 or equivalent.

TURK 406  **Advanced Turkish II**  credit: 3 hours.
Continuation of TURK 405 with increased emphasis on conversational fluency and comprehension of advanced level grammar in the reading of a variety of prose texts on current cultural issues. Prerequisite: TURK 405 or equivalent.
Ukrainian

Slavic Languages and Literature
Head of Department: Harriet Murav
Department Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-0680
www.slavic.uiuc.edu/

UKR 101  Basic Ukrainian I  credit: 4 hours.
Oral and written work on basic pronunciation, grammar, and vocabulary. For students with no previous study of Ukrainian.

UKR 102  Basic Ukrainian II  credit: 4 hours.
Continuation of UKR 101. Prerequisite: UKR 101 or equivalent proficiency.

UKR 113  Ukrainian Culture  credit: 3 hours.
Course situates Ukrainian culture in the broad context of Slavic nations. Acquaints students with Ukrainian culture from the origins of Kievan Rus’ in the Middle Ages to the present. Includes highlights of historical-cultural events, an overview of literature and of the arts, as well as an outline of history in Ukrainian folklore. No knowledge of Ukrainian required.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

UKR 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

UKR 201  Second-Year Ukrainian I  credit: 4 hours.
Completion of grammar, oral drills, and written exercises. Prerequisite: UKR 102 or equivalent.

UKR 202  Second-Year Ukrainian II  credit: 4 hours.
Selected readings in contemporary Ukrainian literature. Prerequisite: UKR 201 or equivalent.

UKR 218  Survey of Ukrainian Literature  credit: 3 hours.
Critical survey of major works in Ukrainian literature from the beginnings to the modern period in light of their historical and cultural background; lectures and readings in English. Same as CWL 218.

UKR 498  Problems in Ukrainian Lit  credit: 3 OR 4 hours.
Critical survey of major works in Ukrainian literature from the beginnings to the modern period in light of their historical and cultural background; lectures and readings in English. 3 undergraduate hours. 3 or 4 graduate hours.
Urban and Regional Planning

Urban and Regional Planning
Interim Head of Department: Edward Feser
Department Office: 111 Temple Buell Hall, 611 Lorado Taft Drive, Champaign
Phone: 333-3890
www.urban.uiuc.edu

UP 101  **Planning of Cities and Regions**  credit: 3 hours.
Survey of city and regional planning as related to problems and programs of urbanization and resource development.

UP 116  **Analytical Planning Methods**  credit: 4 hours.
Numerical and statistical analysis of data for planning, forecasting, and decision making. Data and problems framed from planning cases and resulting in professional quality analytical memoranda. Includes use of microcomputer analytical software.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

UP 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated.

UP 203  **Cities Regions & Social Science**  credit: 3 hours.
Planning implications of economic, geographic, political and social structure of cities and regions; introduces social science theories to understand and analyze cities and regions. Students use computer simulation and data bases to analyze a city or region. Prerequisite: UP 101, ECON 102, and UP 116 or equivalent.

UP 205  **Ecology and its Applications**  credit: 3 hours.
Basic ecological principles pertinent to planning and management. Examination of problems that arise from inadequate consideration of structure and function of ecological systems, and approaches to ecological restoration and environmentally sound planning. Applications of principles to case studies drawn from urban planning, natural resource management and sustainable development.
This course satisfies the General Education Criteria for a:
UIUC: Life Sciences

UP 210  **Environmental Economics**  credit: 3 hours.
Same as ACE 210, ECON 210, ENVS 210, and NRES 210. See ACE 210.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

UP 260  **Social Inequality and Planning**  credit: 3 hours.
Provides an introduction to the social, political, economics and cultural forces shaping communities today. Emphasis on the role of race, class and gender relations in urban social issues and the processes through which successful community intervention occurs at the local level: Community organizing, participatory planning, advocacy planning, community development. Students explore the dynamics of community building and social change by focusing on the interplay between communities, leaders, institutions, and change processes through team projects, individual assignments and community service activities in the surrounding community. Prerequisite: Sophomore standing; majors in Urban Planning must have taken UP 101.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

UP 312  **Communication for Planners**  credit: 4 hours.
Covers the graphic and verbal skills required in effectively communicating planning information and ideas: freehand and computer-based graphics, policy argumentation, integration of verbal and graphic communication. Prerequisite: Completion of campus Composition I general education requirement and UP 101 or consent of instructor.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

UP 316  **Planning Analysis**  credit: 3 hours.
Provides an introduction to methods for analyzing situations that require a planning response. Methods instructed include systems modeling, benefit-cost analysis, budgetary analysis, decision analysis, and forecasting techniques. Prerequisite: UP 116 or an introductory statistics course.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

UP 347  Planning Workshop I  credit: 6 hours.
Field work dealing with selected physical and/or social planning problems. Prerequisite: UP 205, UP 312, UP 260 and UP 316.

UP 390  Planning Internship  credit: 0 TO 6 hours.
Professionally supervised field experience in public and private planning or development agencies. Designed to introduce students to professional employment and actual planning practice. Students work in an agency of their own choice, subject to departmental approval, either during the summer session or part-time during a regular term. At least two weeks of full-time employment or its equivalent is required for each term hour of credit. Summary reports are submitted by both employer and student. Approved for S/U grading only. May be repeated to a maximum of 8 hours. No more than 8 hours of UP 390 may be applied toward the Bachelor's degree. Prerequisite: Upper division undergraduate standing in urban planning.

UP 397  Special Problems  credit: 2 TO 6 hours.
Special projects, research, and independent reading. Prerequisite: Consent of head of department.

UP 405  Watershed Ecology and Planning  credit: 4 hours.
Uses the watershed as the basic organizing concept in environmental planning and management; methods for assessing watershed boundaries, geology, soils and surface and groundwater system processes. Emphasizes ecological implications of patterns of land use on functional and qualitative aspects of watershed systems. All-day field trip required. Should have a previous course in environmental science.

UP 406  Urban Ecology  credit: 4 hours.
Examines cities as natural systems, combining ecological analyses with historical, anthropological, and sociological studies of urban nature. Addresses ecological sustainability, growth management, biodiversity, ecology of parks, zoos and aquariums, environmental justice. Required field trip. Same as ENVS 406. Course may not be repeated for credit. Prerequisite: Senior standing or consent of instructor.

UP 407  State and Local Public Finance  credit: 4 hours.
Provides students with an understanding of the fundamental concepts of fiscal planning at the state and local levels of government. Addresses both the theory and methods of state and local finance, but most importantly, it is focused on state and local fiscal policy. Addresses emerging policy issues involving land use and taxation, spending and budgeting, intergovernmental cooperation, debt financing, financing for economic development, and privatization. Prerequisite: Graduate standing or completion of UP 316 or consent of the instructor.

UP 408  Law and Planning  credit: 4 hours.
This course examines the legal framework within which planning takes place in urban areas of this country. It emphasizes the role of law in structuring local government responses to social, economic and physical planning issues and in allocating power among local governments, between local governments and state and federal governments, and between governments and the private sectors of society. Course may not be repeated for credit. Prerequisite: Senior standing.

UP 409  Planning Negotiation  credit: 4 hours.
Examination and simulation of negotiation concepts and techniques as an ad hoc or integrated element of a planning process. Case assignments and exercises are used to supplement readings. Prerequisite: Upper division undergraduate or graduate standing.

UP 418  GIS for Planners  credit: 4 hours.
Detailed introduction to the design and use of computerized geographic information systems, focusing on their significance for planning. Emphasizes GIS within an institutional setting, covering not only fundamental technical concepts, but also organizational, management, and legal issues. Students will be introduced to GIS applications and products through readings, videos, demonstrations, and exercises. Computer laboratory work is included. Prerequisite: Upper division undergraduate or graduate standing.

UP 420  Plng for Historic Preservation  credit: 4 hours.
Survey of the preservation movement in relation to urban planning; techniques for selection of sites and definition of districts; funding, regulation, and implementation measures; and case studies of preservation plans and programs. Prerequisite: At least Junior standing.

UP 423  Intro International Planning  credit: 4 hours.
Introduces students to the main theoretical frameworks and conceptual building blocks of urban and community development in the Third World. This includes the approaches to development planning, the notion of community participation and empowerment, and the role of various actors including the poor, the non-government organizations and the grassroots.

UP 424  Cities & Plng in World Regions  credit: 4 hours.
Explores the process of urbanization as a critical factor in the development of nations and world regions. It looks at the historical evolution and contemporary challenges of cities in selected world regions and countries, linking urban development to broader social, cultural, political, economic and environmental issues in the region. Readings, films, lectures, individual research and discussion will be used to explore the complex and important roles of cities in regional development. The featured regions will include, but not be limited to: Eastern and Central Europe, Eurasia, Southeast Asia, South Africa, Mexico, and Central America. Prerequisite: Senior standing or consent of instructor.

**UP 426 Urban Design and Planning** credit: 4 hours.
Concepts and techniques of urban analysis, plan making, and implementation essential for effective interdisciplinary work in urban design. Prerequisite: Senior standing.

**UP 428 International Planning Studio** credit: 6 hours.
This interdisciplinary planning studio concerns the physical planning and policy analysis for urban development of actual sites in developing countries. The studio will be offered in a seminar and workshop format (studio), where critical understanding and analysis of the situation is combined with development of actual proposals (design or policy proposals) integrating the social, economic, physical, and cultural aspects of the site development. Course relies primarily on group activity and team-work among a multidisciplinary group of students. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

**UP 429 International Plan Practice** credit: 4 hours.
Course introduces future planners and practitioners to the practical aspects of project design, program development and implementation in the field of international development through lectures, field trips, and group discussions with international planning professionals representing consulting groups and donor agencies, as well as constituency representatives. Course will be organized around a specific development problem and will aim to work through the problem and its solution by discussion of readings, examination of case studies, and exposure of students to processes and procedures of decision making and project implementation within the non-profit international development organizations and international development agencies. Prerequisite: UP 423 or consent of instructor.

**UP 430 Urban Transportation Planning** credit: 4 hours.
Role of transportation in urban development and planning; characteristics of urban-person transportation systems and methods of analysis and forecasting of urban-person transportation demand; transportation systems management and capital improvement programming; and emphasis on the needs and activities of metropolitan planning organizations. Same as CEE 417.

**UP 436 Urban Design Workshop** credit: 6 hours.
Examines urban design theory and principles, and evaluates the built environment in a lab-based setting. Working in teams, students become immersed in real work examples and propose design interventions for specific places, including socially diverse neighborhoods in small cities and major metropolitan urban centers. Normally includes active engagement with community residents. Prerequisite: UP 426, senior or graduate standing, or consent of instructor.

**UP 438 Disasters and Urban Planning** credit: 4 hours.
Introduction to the role of urban planners in preparing for and rebuilding after disasters. Emphasizes U.S. planning practice, with particular attention to the role of local government. Includes basic U.S. emergency management laws and framework, local mitigation planning, and post-disaster recovery planning. Prerequisite: UP 423 or consent of instructor.

**UP 441 Land Resource Evaluation** credit: 4 hours.
Same as LA 441. See LA 441.

**UP 442 Environmental Policy and Law** credit: 4 hours.
Identification and analysis of environmental issues and legal developments primarily at the state and federal levels. Prerequisite: UP 408 or equivalent.

**UP 444 Social Impact Assessment** credit: 3 OR 4 hours.
Same as ENVS 444, LA 444, RST 444, NRES 444 and RSOC 444. See RST 444.

**UP 445 Economic Development Planning** credit: 4 hours.
Public-private-partnerships in urban economic development, including study of potentials, problems, and projects; financing urban economic development through federal grant programs, tax increment financing and other means.

**UP 446 Sustainable Planning Seminar** credit: 4 hours.
Examines sustainability issues of concern to planners, such as resource conservation, urban growth, environmental justice, industrial development, social equity, sustainable agriculture, and economic development. Presents holistic approaches ranging from theoretical concepts to detailed case studies that combine urban and regional land use, physical design, and policymaking. Same as GEOG 446 and NRES 446.
UP 447  **Land Use Planning Workshop**  credit: 4 OR 6 hours.
Small group field work applying principles and techniques to specific land use problems in selected jurisdictions. Prerequisite: UP 347 or graduate standing.

UP 448  **Environ Planning Workshop**  credit: 4 OR 6 hours.
Small group field work applying planning theory, principles, and techniques to specific environmental problems of selected jurisdictions. Prerequisite: UP 347 or graduate standing.

UP 455  **Economic Development Workshop**  credit: 4 hours.
Small group field work applying principles and techniques of economic development planning and policy analysis to specific problems in selected cities, regions, or states. Prerequisite: UP 347 or graduate standing.

UP 473  **Housing & Urban Policy Planning**  credit: 4 hours.
The role of housing in American social policy planning: economic modeling of the housing market, emphasizing supply and demand functions and private market imperfections; and analysis of public policies for housing as they affect special consumer groups (the poor, the elderly, and the minorities). Prerequisite: Graduate standing, or UP 260 and ECON 302 or equivalents.

UP 474  **Neighborhood Planning**  credit: 4 hours.
Examines rationale and techniques for planning at the neighborhood level; the major social, political, and economic issues that confound public and private sector efforts to revitalize distressed neighborhoods. Prerequisite: UP 260 or graduate standing.

UP 478  **Community Development Workshop**  credit: 6 hours.
Application of community development principles and techniques to the solution of environmental, economic and social problems facing low income urban communities. Participants collaborate with neighborhood leaders to produce stabilization plans promoting business development, job generation, housing improvement and municipal service delivery. Involves small group projects and off-campus field work. Prerequisite: Graduate standing, or completion of UP 347, or consent of instructor.

UP 480  **Sustainable Design Principles**  credit: 2 hours.
Same as ARCH 480. See ARCH 480.

UP 494  **Special Topics in Planning**  credit: 1 TO 6 hours.
Seminar on topics of current interest, as announced in the Schedule. May be repeated to a maximum of 16 hours.

UP 501  **Planning History and Theory**  credit: 4 hours.
Offers students a survey of classic and contemporary theories of planning. Students will gain a deeper appreciation for the profession's roots as well as be introduced to some of "the theoretical tools" used to analyze planning. An important aspect of the course is intellectual dialogue through critical reading, informed discussion and writing assignments. Prerequisite: Graduate standing in Urban Planning or consent of instructor.

UP 503  **Physical Planning**  credit: 4 hours.
Provides grounding in the issues and principles underlying physical planning; lecture and discussion sessions are complemented by project work that applies principles and methods. Prerequisite: Graduate standing in Urban Planning or consent of instructor.

UP 504  **Urban History and Theory**  credit: 4 hours.
Historical and international comparison of the origins and evolution of cities, the process of urbanization, and the human endeavor to effect urban growth and change. Includes history of urban physical form and of planning efforts, emphasizing planning origins in the nineteenth century and transnational influences. Includes equity issues of urban spatial arrangement, including racial segregation and housing market differentiation. Covers elements of urban physical form, including grid and organic structure, commercial city forms, the urban skyline, and urban sprawl. Prerequisite: Graduate standing in Urban Planning or consent of instructor.

UP 505  **Urban and Regional Analysis**  credit: 4 hours.
Frameworks and methods for analyzing cities and regions as economic, social and ecological systems in order to understand how they work and to imagine scenarios of change that include plans and actions within these systems. Prerequisite: Graduate standing in Urban Planning or consent of instructor.

UP 508  **Survey Design and Analysis**  credit: 2 hours.
Design of primary data collection instruments, focusing on the large sample survey. Discusses techniques for implementing qualitative and physical data collection by mail, web, and phone. Students learn multivariate statistical techniques for analyzing survey results.

UP 509  **Economics for Planners**  credit: 4 hours.
Exploration of how economics can contribute to understanding and solving urban problems. Application of economic analysis and reasoning to the important issues that planners confront, including zoning, land use, housing investment, and transportation. Focuses also on skills to use economic methods effectively.

UP 517  **Community Studies Theory**  credit: 4 hours.
Same as HCD 531 and SOC 574. See HCD 531.

UP 519  **Advanced Applications of GIS**  credit: 4 hours.
Advanced course in geographic information systems emphasizing application of GIS to problems involving spatial analysis. Building upon fundamental concepts, students learn to use GIS software frequently found in planning practice. Also prepares students to use GIS in research requiring management and analysis of geographic data. Extensive use of computing workstations. Prerequisite: UP 418 or consent of instructor.

UP 521  **International Planning Seminar**  credit: 4 hours.
Advanced graduate seminar concerning urban and regional development processes in a global context. Closely examines critical issues and select topics in international development planning based upon individual research readings. Prerequisite: Consent of instructor.

UP 533  **Community In American Society**  credit: 4 hours.
Same as HCD 533 and SOC 572. See HCD 533.

UP 540  **Public Involvement in Res Mgmt**  credit: 3 TO 4 hours.
Same as ENVS 540, LA 540, RST 540, NRES 540, and RSOC 540. See NRES 540.

UP 542  **Landscape Modeling**  credit: 4 hours.
Same as LA 542. See LA 542.

UP 546  **Land Use Policy and Planning**  credit: 2 OR 4 hours.
Examines a variety of approaches to land use policy and planning, from both a theoretical and an applied perspective. Explores different values in American land use policy, recent evolution of land use policy. Taught as a seminar.

UP 547  **Growth Mgmt and Regional Plng**  credit: 4 hours.
Explores the application of growth management tools at various levels of government, including political histories, regulatory techniques, administrative procedures, and relative effectiveness. Prerequisite: UP 408, UP 501, and UP 505.

UP 555  **Regional Development Theory**  credit: 4 hours.
Covers fundamental concepts and theories of regional economic development including export base, neoclassical and endogenous growth, regional convergence, core-periphery, interregional trade, product cycle, industrial districts, entrepreneurship, and regional innovation systems theories. Also discusses policy and planning frameworks for applying regional theory to spatial development problems. Prerequisite: UP 445 and UP 407, or consent of instructor.

UP 556  **Regional Science Methods**  credit: 4 hours.
Same as GEOG 556. See GEOG 556.

UP 557  **Seminar in Regional Science**  credit: 4 hours.
Same as GEOG 557. See GEOG 557.

UP 580  **Advanced Planning Theory**  credit: 4 hours.
Recent advances in planning, policy-making and decision-making theories as they relate to the efficient use of land and to the complex interrelationships among the major uses of land, i.e., housing, transportation, agriculture; specific applications vary annually, reflecting the students’ dissertation research topics. Prerequisite: UP 501 or consent of instructor.

UP 583  **Environ History Cities&Regions**  credit: 4 hours.
Explores the reciprocal relationship between human settlement and ecology as a basis for planned change. Combines scientific and historical accounts of ecosystems; analyzes the historical interaction of land use change and the ecology of aquatic and terrestrial ecosystems. Focuses on Illinois and the Midwest; includes role of Native Americans and European settlers in midwestern ecosystems and the importance of gender and race in examining society and ecological change. Same as GEOG 583 and LA 583.

UP 585  **Advanced Modeling in Planning**  credit: 4 hours.
Seminar on formal models used to analyze planning problems and planning behavior. Includes static and dynamic, linear and non-linear, and deterministic and stochastic optimization models. Derivations of models and methods for solution treated in depth, but the emphasis is on applications to planning problems such as transportation, land use, and environmental management. Specific themes change from year to year. Prerequisite: UP 505 and UP 508, or consent of instructor.
UP 587  Qualitative Research Methods  credit: 4 hours.
Students use individual research to practice qualitative methods of studying social interaction. Includes field research and historical/archival research methods; project areas include community development, environment, and landscape. Discussion is divided between 1) readings on issues such as techniques and research design, social theory, ethnocentrism, and combining qualitative with quantitative research and 2) student research reports. Same as GEOG 587.

UP 589  Research Design and Methods  credit: 4 hours.
Prepares students to embark on thesis research and independent grant proposals. Introduces the phases of research design process, including literature review, identification of the research problem, statement of research objectives and questions, establishment of the conceptual framework, and selection of methods, sampling strategies, measurements, and analyses that are most suitable to address the research questions. Provides an overview of the commonly used quantitative and qualitative research methods, e.g., survey, quasi-experiment, and case study. Guides students through the process of writing and reviewing a research proposal and providing feedback to others. Prerequisite: Enrollment in a PhD program or consent of instructor.

UP 590  Professional Internship  credit: 0 hours.
Summer, part-time, or other professional-level employment in the field of planning, usually in an area of concentration; exposure to the social, political, and institutional setting in which planning operates; and full documentation of internship activities required. Approved for S/U grading only. Prerequisite: Consent of instructor.

UP 591  Capstone Seminar  credit: 0 hours.
Provides general capstone advising to MUP students. Seminar is used for peer discussion and feedback about work in progress, as well as to organize for the capstone poster session held each spring semester. Meets on a monthly basis. Approved for S/U grading only. May be repeated in separate terms.

UP 594  Seminar  credit: 1 TO 6 hours.
Selected topics in urban and regional planning; several sections each term. May be repeated.

UP 595  Advanced Planning Workshop  credit: 4 OR 8 hours.
Application of planning principles and methods to a current problem in urban and regional planning. Advanced planning students work with a client to define the planning problem, gather and analyze data, develop alternative plans, propose policies, and prepare a final planning product. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing in Urban and Regional Planning and consent of instructor, and consent of the Department.

UP 596  Concentration Paper  credit: 4 hours.
Research and preparation of a paper on an important current topic that integrates the student's course work on policy, practice and research methods for a chosen area of concentration with the field of Urban and Regional Planning. Meets the capstone requirement for graduation. Prerequisite: Graduate standing in Urban and Regional Planning and consent of instructor, and consent of the Department.

UP 597  Urban Planning Research  credit: 1 TO 4 hours.
Independent study in selected urban and regional planning topics. May be repeated to a maximum of 16 hours. No more than 16 hours may be applied toward the Master of Urban Planning degree. Prerequisite: Graduate Standing in Urban and Regional Planning, consent of instructor, and consent of the Department.

UP 598  Master's Project  credit: 4 OR 8 hours.
Major independent or small group project applying planning principles and methods to a current problem in urban and regional planning resulting in a final professional product. Prerequisite: Graduate standing in Urban and Regional Planning, consent of instructor, and consent of the Department.

UP 599  Thesis Research  credit: 0 TO 16 hours.
Approved for S/U grading only. May be repeated to a maximum of 8 hours for Master's students. May be repeated to a maximum of 16 hours for PhD students. Prerequisite: Graduate standing in Urban and Regional Planning, consent of instructor, and consent of the Department.
**Veterinary Biosciences**

Veterinary Biosciences  
Head of Department: Duncan C. Ferguson  
Department Office: Veterinary Medicine Basic Sciences Building, Room 3516, 2001 South Lincoln Avenue, Urbana, IL 61802  
Phone: 333-2506  
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**VB 190  Discovery Seminar**  credit: 1 TO 5 hours.  
May be repeated.

**VB 394  Veterinary Bioscience**  credit: 1 TO 4 hours.  
To be used to designate a trial or experimental course for five or more students. It is designed to be an undergraduate course. A course can be taught under this designation two times within a two-year period and cannot be renewed as a VB 394 course. 1 to 4 undergraduate hours. No graduate credit. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

**VB 406  Veterinary Ortho Biomechanics**  credit: 3 hours.  
Explores the relationship between the biology and mechanics of the musculoskeletal system and its role in the pathobiology and treatment of orthopedic diseases utilizing the techniques of morphology and mechanical engineering; interdisciplinary course for both life science and engineering students. Same as BIOE 406. Approved for both letter and S/U grading. Prerequisite: MCB 150 and MCB 103, or equivalents; or consent of instructor.

**VB 420  Stem Cell Journal Club**  credit: 1 hours.  
This course will consist of a weekly journal club that will meet to discuss published journal articles related to stem cells. The focus will be primarily on clinical applications of stem cells, both adult and embryonic. Journal articles will be selected on a weekly basis to facilitate review of the most recent work in the field. Faculty, staff, post-doctoral fellows, and students from labs conducting stem cell research at the Veterinary School will attend and participate in the discussion. Offered for both letter and S/U grading. May be repeated in separate terms to a maximum of 2 undergraduate hours or 6 graduate hours.

**VB 422  Neurobio of Physical Activity**  credit: 4 hours.  
Course survey of the neural mechanisms underlying physical activity. Includes both basic science and consideration of the effects of disease and trauma conditions. Prerequisite: Graduate or Professional (DVM), or senior standing in Kinesiology or Bioengineering; or MCB 103 or MCB 402, NEUR 404, or consent of instructor.

**VB 449  Basic Toxicology**  credit: 3 hours.  
Same as CPSC 433, ENV 480, and FSHN 480. See FSHN 480.

**VB 454  Systems Toxicology**  credit: 3 hours.  
Provides an overview of the effects of chemicals and their mechanisms of action in a variety of organ systems. Topics include toxicology of the nervous, developmental, reproductive, thyroid, renal, hepatic, immune, pulmonary, and gastrointestinal systems. Prerequisite: Completion of a course in basic toxicology or consent of instructor.

**VB 467  Regulatory Pharmacol Toxicol**  credit: 2 hours.  
Examines Principles of chemical evaluation and regulations with regard to specific uses in human beings and animals as well as chemicals applied in the home and workplace, and the outdoor environment, including lawns, forests, and agriculture. Also examines major ethical approaches, pre-clinical and clinical trials of drugs, post-market monitoring, pesticide approval, and re-registration. Includes principles of risk assessment and risk management. Discusses nature, strengths, and limitations of drug and chemical laws and policies. Includes testing approaches and evaluation processes. Approved for both letter and S/U grading. Prerequisite: At least one semester of physiology (MCB 103, MCB 240, VB615, VB 616 or equivalent), and biochemistry (MCB 354 or 450 or equivalent) or consent of instructor.

**VB 494  Veterinary Bioscience**  credit: 1 TO 4 hours.  
To be used to designate a trial or experimental course for five or more students. It is designed to be an undergraduate or graduate level course. A course can be taught under this designation two times within a two-year period and cannot be renewed as a VB 494 course. Approved for both letter and S/U grading. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

**VB 512  Advanced Endocrinology**  credit: 2 hours.  
Same as ANSC 530 and MCB 512. See MCB 512.
VB 514  **Neurotoxicology**  credit: 3 hours.
Examines toxic responses of the mammalian nervous system to xenobiotics (therapeutic agents, drugs of abuse, toxins, environmental and industrial chemicals) from the molecular and cellular levels to the behavioral level. Also covers neuroteratology, sensitive periods for neurotoxicity and the potential role of environmental factors/xenobiotics in the etiology of nervous system disorders. Same as ENVS 514 and PSYC 515. Prerequisite: Credit or concurrent registration in MCB 452, VB 610 or equivalent.

VB 516  **Reprod & Dev Toxicology**  credit: 3 hours.
Introduction to reproductive and developmental toxicology that examines causes and manifestations both of structural malformations and of functional deficits in mammals. Topics covered include interactions between external factors and developmental gene expression, the behavioral consequences of chemical exposure, identification and regulation of reproductive and developmental toxicants. Examples emphasize reproductive and developmental toxicants that are present in the human environment. Same as ENVS 516. Prerequisite: Consent of instructor.

VB 531  **Adv Reproductive Endocrinology**  credit: 3 hours.
Same as ANSC 531 and MCB 531. See ANSC 531.

VB 533  **Repro Physiology Lab Methods**  credit: 1 TO 3 hours.
Same as ANSC 533 and MCB 533. See ANSC 533.

VB 534  **Pesticide Toxicology**  credit: 3 OR 4 hours.
Same as ENVS 433 and IB 486. See IB 486.

VB 549  **Basic Toxicology**  credit: 3 hours.
Same as CPSC 433, ENVS 480, and FSHN 480. See FSHN 480.

VB 550  **Detect/Anal Gene Transcripts**  credit: 4 hours.
Gives participants the background information and hands-on experience in the methodologies necessary to utilize cloned genes for the detection and quantitation of specific mRNA transcripts in RNA extracted from tissue or cell culture samples. Methodologies covered will include: recombinant plasmid propagation, cDNA probe isolation and isotopic labeling, RNA isolation, Poly A+ mRNA selection, gel separation and transfer of RNA to a membrane (Northern blot), hybridization of specific gene probes to membrane bound RNA (Northern hybridization), detection and quantitation of hybridization signal. These basic methodologies are widely applicable to different experimental systems. They allow an investigator to monitor the effects of physiological manipulations, to animals or cultured cells, at the molecular level. Prerequisite: Consent of instructor.

VB 551  **Ecotoxicology North Hemisphere**  credit: 2 hours.
Sources, environmental fate, and adverse effects of manmade and naturally-occurring chemicals on terrestrial and aquatic wildlife and ecological systems. Addresses wildlife health, including direct toxic effects and indirect effects via toxicity to other species. Focuses mainly on northern hemisphere with multiple examples from North America and Europe. Includes methods to reduce and prevent ecological and wildlife health problems. Includes one or more field trips comparing samples and animals from contaminated, pristine, and remediated sites. Examines laboratory ecotoxicology methods. Prerequisite: At least one semester of biology (IB 150 or equivalent), and biochemistry (MCB 354 or equivalent).

VB 552  **Ethics in Toxicology**  credit: 1 hours.
Ethical issues in the practice of toxicological research collaboration, authorship and plagiarism, professional responsibility to subjects (both human and animal), whistle-blowing, codes of ethics, legal obligations. Case Studies.

VB 562  **Analytical Methods Tox Pharm**  credit: 4 hours.
Introduction to principles and methods of detection and quantification of toxicants, drugs, metabolites and decomposition products in biological fluids, tissues, and environment matrices; emphasis on current laboratory methods and procedures (spectroscopy, chromatography, immunoassay, sample preparation, validation, and data interpretation).

VB 564  **Comp Clinical Pharmacology**  credit: 3 hours.
Lecture-discussion of the clinical use in animals of human and veterinary drugs, including current literature review on pharmacodynamic species differences, novel indications, and contrast of therapeutic alternatives. Prerequisite: Graduate Veterinarian or consent of instructor.

VB 565  **Comp Disposition Xenobiotics**  credit: 3 hours.
Lecture-discussion concerning the fate of foreign chemicals in various species of animals; principles of absorption, distribution, biotransformation, and excretion of drugs and toxicants; and pharmacokinetics and factors which modify these processes. Prerequisite: MCB 452, VB 618 or equivalent and/or consent of instructor.

VB 566  **Comp Enviro Tox/Drug Resist**  credit: 3 hours.
The chemistry, action, and disposition of selected toxic substances at levels associated with environmental contamination; nature and biological consequences of host-toxicant interactions from the perspective of chronic and subclinical effects. Prerequisite: VB 565 or ENVS 431; or consent of instructor.

VB 590  Seminar  credit: 1 hours.
Required of all graduate students whose major is veterinary biosciences.

VB 591  Biosciences Seminar Series  credit: 0 TO 1 hours.
Review and discussion of selected topics. Students are required to participate in weekly discussions and present one formal seminar per year, on a topic approved by the instructor. Approved for S/U grading. May be repeated to a maximum of 4 hours. Prerequisite: Enrollment in VB graduate program or consent of instructor.

VB 592  Special Problems  credit: 1 TO 12 hours.
Basic and applied study including orientation and research on pertinent initial and continuing problems in the student's area of interest. Prerequisite: Consent of instructor.

VB 594  Veterinary Biosciences  credit: 1 TO 4 hours.
To be used to designate a trial or experimental course for five or more students. It is designed to be a graduate course. A course can be taught under this designation two times within a two-year period and cannot be renewed as a VB 594 course. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

VB 596  Interdisciplinary Tox Sem  credit: 1 hours.
Interdisciplinary seminar on topics within the area of toxicology; topics vary each term. Seminars are presented by faculty, visiting lecturers, and students based upon their study, research, and/or professional activities in the selected topic area. Same as ENVS 596 and PATH 596. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

VB 599  Thesis Research  credit: 0 TO 16 hours.
Individual direction of research and thesis writing. May be repeated. Approved for S/U grading only.

VB 600  Gross Anatomy I  credit: 5 hours.
The systemic and topographic study of the anatomy of the dog with special reference to cat and exotics, as it relates to veterinary medicine, by lecture and discussion-laboratory dissection. 5 graduate or professional hours. Prerequisite: Registration in the veterinary medicine curriculum or consent of instructor.

VB 601  Veterinary Histology  credit: 5 hours.
Lecture and laboratory discussion of the histology and developmental anatomy of domestic animal and avian tissues. 5 graduate or professional hours. Prerequisite: Registration in the veterinary medicine curriculum or consent of instructor.

VB 602  Gross Anatomy II  credit: 4 hours.
Study of the systematic and topographic anatomy of the large domestic animals, including reference to diagnostic and surgical procedures, by lecture and dissection. 4 graduate or professional hours. Prerequisite: Registration in the veterinary curriculum or consent of instructor.

VB 610  Neurobiology  credit: 3 hours.
Introduction to the science of neurobiology, both neuroanatomy and neurophysiology and their importance to an understanding of the normal integrative nervous system of domestic and laboratory animals. 3 graduate or professional hours. Prerequisite: Registration in the veterinary medicine curriculum or consent of instructor.

VB 615  General Physiology I  credit: 4 hours.
Lecture-discussion-demonstration on the physiology of the endocrine, reproductive and gastrointestinal systems of domestic mammals. Some emphasis is placed on relevance to veterinary medicine. 4 graduate or professional hours. Prerequisite: First-year standing in the veterinary medicine curriculum or consent of instructor.

VB 616  General Physiology II  credit: 4.5 hours.
Lecture-discussion-demonstration on the physiology of the cardiovascular, respiratory, and renal systems of domestic mammals. Some emphasis is placed on relevance to veterinary medicine. 4.5 graduate or professional hours. Prerequisite: First-year standing in the veterinary medicine curriculum or consent of instructor.

VB 618  Pharmacology I  credit: 2.5 hours.
Lecture-discussion on the general principles of pharmacology and analysis of the action of chemical agents on physiological processes. 2.5 graduate or professional hours. Prerequisite: Second-year standing in the veterinary medicine curriculum.

VB 619  Pharmacology II  credit: 3 hours.
Lecture-discussion on the action of chemical agents on physiological processes and disease-producing organisms. 3 graduate or professional hours. Prerequisite: VB 618 or equivalent.

**VB 620  Toxicology**  credit: 2 hours.
Discusses the mechanisms of action, clinical, diagnostic, and therapeutic aspects of chemical and plant toxicants in domestic animals. 2 graduate or professional hours. Prerequisite: VB 619 or equivalent, or consent of instructor.

**VB 624  Nutritional Aspect Food An Med**  credit: 2 hours.
Clinical aspects of nutritional deficiencies, imbalances, and toxicities in cattle, horses, sheep, and swine; presentation of therapeutic principles; and nutritional aspects of the etiology, prevention, and treatment of specific disease conditions. Prerequisite: Third-year standing in veterinary medicine curriculum or consent of instructor.

**VB 626  Nutritional Aspect Sm An Med**  credit: 1 hours.
Clinical aspects of nutritional deficiencies, imbalances, and toxicities in small animals; presentation of therapeutic principles; and nutritional aspects of the etiology, prevention, and treatment of specific disease conditions. Prerequisite: Third-year standing in veterinary medicine curriculum or consent of instructor.

**VB 631  Intro to Poisons in Plants**  credit: 1 OR 2 hours.
Focuses on identification and toxicology of poisonous plants as well as mycotoxins and pesticides that may contaminate plant materials. Includes wild, ornamental, and food-producing plants. Involves field trips both on and off campus. 1 or 2 graduate or professional hours. For the higher credit, students must submit an additional proposal paper. Prerequisite: Enrollment in the veterinary medicine curriculum or consent of instructor.

**VB 667  Radiology and Radiobiology**  credit: 3 hours.
Same as VCM 667. See VCM 667.

**VB 692  Special Problems**  credit: 1 TO 6 hours.
Individual research on a special problem chosen in consultation with the instructor and department head. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours. 1 to 6 graduate or professional hours. Prerequisite: Enrollment in veterinary medicine curriculum with grade-point average of 3.0 or above, or consent of instructor.

**VB 694  Veterinary Bioscience**  credit: 1 TO 3 hours.
Basic and applied study including orientation and research on pertinent initial and continuing problems for veterinary medical students. These studies are elective to the CVM professional curriculum. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours. Prerequisite: Enrollment in the veterinary medicine curriculum or consent of instructor.
Veterinary Clinical Medicine

VCM 190  Discovery Seminar  credit: 1 TO 5 hours.
May be repeated.

VCM 394  Veterinary Clinical Medicine  credit: 1 TO 4 hours.
To be used to designate a trial or experimental course for five or more students. It is designed to be an undergraduate course. A course can be taught under this designation two times within a two-year period and cannot be renewed as a VCM 394 course. Approved for both letter and S/U grading. May be repeated to a maximum of 8 undergraduate hours if topics vary. Prerequisite: Consent of instructor.

VCM 494  Veterinary Clinical Medicine  credit: 1 TO 4 hours.
To be used to designate a trial or experimental course for five or more students. It is designed to be an undergraduate course. A course can be taught under this designation two times within a two-year period and cannot be renewed as a VCM 494 course. Approved for both letter and S/U grading. May be repeated to a maximum of 8 undergraduate hours if topics vary. Prerequisite: Consent of instructor.

VCM 500  Difficult Case Conference  credit: 1 hours.
House Officers (Clinicians in Training) will present clinical cases presented to the Veterinary Medicine Teaching Hospital in a lecture/discussion format with supporting literature. Analysis of decisions and clinical interpretation will be the focus of the discussion. May be repeated to a maximum of 12 hours. Prerequisite: Graduate Veterinarian or consent of instructor.

VCM 501  Zoological Medicine Seminar  credit: 2 hours.
Discussion of selected topics and literature pertaining to zoological, wildlife and aquatic animal medicine and presentation of a formal seminar. May be repeated to a maximum of 6 hours. Prerequisite: Post DVM and enrolled in the Zoological and Aquatic Animal Residency Program.

VCM 502  Issues in Clinical Research  credit: 2 hours.
This course is intended for students interested in applying analytical epidemiological methods in assessing the health and disease status of populations (animal and human) and assessing the factors affecting that status. It includes lecture/discussion sessions and exercises on the study design, statistical analysis, and interpretation of clinical trials and cross-sectional, case-control, and longitudinal studies. Database management, risk assessment, and techniques for enhancing the validity of field-based studies of naturally occurring disease will also be covered. Prerequisite: Successful completion of PATH 650 or equivalent or consent of instructor.

VCM 503  Current Lit in Equine Med Surg  credit: 1 hours.
This course will use current primary literature in the fields of equine medicine and surgery as a gateway to discussion. Current literature will be reviewed, critiqued, and discussed in the context of current equine clinical practice. Students are expected to be graduate veterinarians with a thorough understanding of equine medical and surgical concepts before enrolling in the course. May be repeated to a maximum of 6 hours. Prerequisite: Graduate Veterinarian or consent of instructor.

VCM 510  Science of Animal Well-Being  credit: 1 hours.
Reviews the scientific literature on the well-being of agricultural animals. Topics include normal and abnormal behaviors, signs and control of pain and distress, impact of housing, management, and veterinary practices on animal well-being, and enrichment methods. One species (swine, dairy cattle, beef cattle, horses, poultry, or sheep) will be covered each semester. Students will critically review the literature, distribute articles, and lead class discussions. Grades will be based on attendance, quality of performance, and a final examination. Same as ANSC 510. May be repeated to a maximum of 6 hours. Prerequisite: Graduate student in the College of Veterinary Medicine or College of ACES, or consent of instructor.

VCM 511  Seminar in Prod/Pop Medicine  credit: 1 hours.
Same as PATH 511. See PATH 511.

VCM 512  Vet Medicine Industry Trends  credit: 1 hours.
The face of small animal veterinary medicine in the future will be extrapolated from past and current industry data and events. Topics to be covered include declining income and rising debt, labor force changes, emergence of corporate practices, greater awareness of public health and environmental issues. Prerequisite: Two years of work experience as a veterinarian or veterinary hospital manager or consultant and/or consent of instructor; enrolled in the Executive Veterinary Program.
VCM 515  **Societal Impacts Vet Medicine**  credit: 4 hours.
The effect of the veterinary medical profession on internal and external audiences will be examined across a variety of disciplines.
Topics to be covered include advanced marketing concepts, existing and emerging public health concerns, advanced legal and ethical
issues, and strategic planning of the modern veterinary business. Prerequisite: PATH 578.

VCM 522  **Adv Comp Theriogenology**  credit: 1 hours.
Advanced study on the principles and practice of theriogenology in domestic and non-domestic animals. May be repeated to a
maximum of 6 hours. Prerequisite: Graduate Veterinarian and consent of instructor.

VCM 542  **Laboratory Animal Medicine**  credit: 1 TO 3 hours.
Weekly clinical rounds, weekly or biweekly facilities rounds, and supervised clinical experience. Topics include: biology and husbandry
of laboratory animals; diagnosis, treatment, and prevention of disease of laboratory animals; principles of animal use in research
and teaching; and management and design of laboratory animal facilities. May be repeated to a maximum of 12 hours. Prerequisite:
Graduate Veterinarian or consent of instructor.

VCM 548  **Veterinary Cytopathology**  credit: 2 hours.
Same as PATH 648. See PATH 648.

VCM 551  **Intro Surgery for Research**  credit: 1 hours.
Surgical principles including sterile technique, hemostasis, tissue handling, instrumentation, and wound closure and healing are taught
with emphasis on application in domestic and laboratory animals. Laboratory covers demonstration and practice of surgical principles.
Students may not receive credit for both VCM 551 and VCM 651. Prerequisite: Graduate Veterinarian or consent of instructor.

VCM 577  **Advanced Large Animal Medicine**  credit: 1 hours.
A seminar series devoted to intense study of pathophysiologic and current therapeutic aspects of selected topics in large animal
internal medicine. May be repeated to a maximum of 6 hours. Prerequisite: Graduate standing or consent of instructor.

VCM 583  **Adv Investigative Orthopedics**  credit: 6 hours.
Advanced course on latest clinical investigations and research projects related to orthopedics in animals and humans. Prerequisite:
Graduate Veterinarian or consent of instructor.

VCM 584  **Current Concepts Comp Surgery**  credit: 1 hours.
Advanced study of topics concerning the pathophysiology, diagnosis, and current therapy of diseases which are treated with surgical
procedures. May be repeated to a maximum of 4 hours. Prerequisite: Graduate Veterinarian or consent of instructor.

VCM 585  **Current Lit Sm Anim Medicine**  credit: 1 hours.
Participants will discuss and analyze current veterinary journal articles which pertain to small animal internal medicine. May be repeated
to a maximum of 6 hours. Prerequisite: Graduate Veterinarian.

VCM 588  **Advances in Vet Dermatology**  credit: 1 OR 2 hours.
A series of lectures, seminars and discussions devoted to the intense study of pathophysiologic aspects of the integument and related
systems including: structure and functions, endocrinology, immunology, microbiology, virology, parasitology, pharmacology, oncology,
and miscellaneous disorders. Students enrolling for graduate credit will also participate in weekly critiques of current literature. May be
repeated to a maximum of 8 hours. Duplicate registration is permitted up to 4 hours. Prerequisite: Graduate Veterinarian and consent of
instructor.

VCM 590  **Seminar**  credit: 0 TO 1 hours.
Required of all graduate students whose major is Veterinary Clinical Medicine. May be repeated. Approved for both letter and S/U
grading.

VCM 591  **Advances in Vet Internal Med**  credit: 1 hours.
A series of lectures, seminars, and discussions devoted to intense study of new pathophysiologic aspects of selected topics in
veterinary internal medicine. Each term is devoted to three topics. May be repeated to a maximum of 6 hours. Approved for both letter
and S/U grading. Prerequisite: Graduate Veterinarian and consent of instructor.

VCM 592  **Special Problems**  credit: 1 TO 4 hours.
Basic and applied study including orientation and research on pertinent initial and continuing problems in the student's area of interest.
May be repeated. Prerequisite: Consent of instructor.

VCM 593  **Adv Topics Vet Clin Med**  credit: 1 TO 4 hours.
Instruction in advanced diagnosis, therapeutic modalities, and research methodologies in the areas of small animal internal medicine, small animal surgery, equine and food animal medicine and surgery, ophthalmology, theriogenology, radiology, and clinical pharmacology. May be repeated to a maximum of 8 hours. Prerequisite: Graduate Veterinarian and consent of instructor.

**VCM 598 Non-Thesis Research** credit: 0 TO 12 hours.
Independent research to fulfill requirement for non-thesis alternative in Master of Science Program. (Summer Session, 1 to 2 hours.) Credit is not given for both VCM 598 and VCM 599. Prerequisite: Must be enrolled in the departmental graduate program.

**VCM 599 Thesis Research** credit: 0 TO 12 hours.
May be repeated. Approved for S/U grading only.

**VCM 601 Clinical/Laboratory Practice** credit: 1.5 TO 6 hours.
Individual customized clerkship in clinical medicine and surgery for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 9 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 602 Clinical Anesthesiology** credit: 1.5 TO 3 hours.
Clerkship in clinical anesthesiology for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 4.5 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 603 Imaging Therapy/Radiology** credit: 1.5 TO 3 hours.
Clerkship in imaging, therapy and radiology for VM-4 professional students. Offered for S/U grading only. May be repeated to a maximum of 4.5 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 604 Equine Medicine and Surgery** credit: 1.5 TO 4.5 hours.
Clerkship in equine medicine and surgery for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 12 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 605 Food Animal Medicine Surgery** credit: 1.5 TO 4.5 hours.
Clerkship in food animal medicine and surgery for VM-4 professional students. Course will include both in-hospital clinical experiences and field trips. Approved for S/U grading only. May be repeated to a maximum of 12 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 606 Prod Medicine/Theriogenology** credit: 1.5 TO 4.5 hours.
Clerkship in production medicine/theriogenology for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 6 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 607 Small Animal Surgery** credit: 1.5 TO 3 hours.
Clerkship in small animal surgery for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 4.5 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 609 Small Animal Internal Medicine** credit: 1.5 TO 4.5 hours.
Clerkship in small animal internal medicine for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 6 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 610 Cardiology** credit: 1.5 hours.
Clerkship in cardiology for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 611 Dermatology** credit: 1.5 hours.
Clerkship in dermatology for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 612 Oncology** credit: 1.5 hours.
Clerkship in oncology for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 613 Clinical Neuro/Neurosurgery** credit: 1.5 hours.
Clerkship in neurology and neurosurgery for VM-4 professional students. Students will obtain basic skills in diagnosis, treatment, and care of medical and surgical neurological diseases. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

**VCM 614 Oncologic Surgery** credit: 1.5 hours.
Clerkship in oncologic surgery for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

VCM 615  **Ophthalmology**  credit: 1.5 hours.

Clerkship in ophthalmology for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

VCM 616  **Exotics**  credit: 1.5 TO 3 hours.

Clerkship in exotic animal medicine and surgery for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

VCM 617  **Beef Cattle Manage Practice**  credit: 1.5 TO 3 hours.

Clerkship in beef cattle management and practice for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

VCM 618  **Clinical Swine Production Med**  credit: 1.5 TO 3 hours.

Clerkship in swine production medicine VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

VCM 619  **Dairy Production Medicine**  credit: 1.5 TO 3 hours.

Externship in advanced dairy production medicine for VM-4 professional students. Students will spend four weeks exploring dairy production medicine topics on farms throughout the state of Illinois. Each week, two to three days and nights will be occupied with off-campus activities. These days will be spent on dairy operations conducting herd problem-solving exercises. Expertise in the use of dairy herd records programs will be developed. Students will offer participating dairy producers suggestions for management changes after thorough economic review of those strategies are explored with the instructors. Approved for S/U grading only. May be repeated to a maximum of 4.5 hours. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum. Students must have successfully completed VCM 680 and VB 624 or their equivalent. Students must have obtained the consent of the instructor if these requirements are not met.

VCM 620  **Food Animal Selective Rotation**  credit: 1.5 TO 6 hours.

Enables fourth year veterinary students to expand their clinical experience in food supply veterinary medicine by taking rotations at off-campus locations with different training opportunities than are available at the University of Illinois at Urbana-Champaign. Approved for S/U grading only. May be repeated to a maximum of 15 hours. Only students in the food animal track may take this course for food animal selective credit. Students in all tracks may take this course for free elective credit. Prerequisite: Fourth-year standing in the veterinary medicine professional curriculum.

VCM 621  **Zoological Medicine**  credit: 1.5 TO 4.5 hours.

Clerkship in zoological medicine for VM-4 professional curriculum. Approved for S/U grading only. May be repeated to a maximum of 4.5 hours. Prerequisite: Fourth-year standing in veterinary medicine professional curriculum.

VCM 622  **Adv Clinical Swine Prod Med**  credit: 1.5 TO 3 hours.

Students will learn clinical techniques, diagnostic approach and clinical problem solving in swine specialty practice. The primary focus will be clinical experience in selected swine specialty private and/or corporate practice. Students will spend 3-6 days per week off campus, including overnight stays. Approved for S/U grading only. May be repeated to a maximum of 3 hours. The combined credit total of this course and VCM 618 may not exceed 4 1/2 hours. Prerequisite: Completion of VCM 677 or consent of instructor.

VCM 623  **PBL in Oncologic Medicine**  credit: 1 hours.

Case-based approach to veterinary cancer medicine. Small group discussion sessions will allow students to diagnose and prescribe treatment for patients presented with commonly occurring malignancies. 1 graduate or professional hour. Approved for S/U grading only. Prerequisite: Senior veterinary students or consent of instructor.

VCM 624  **Bereavement Issues**  credit: 2 hours.

Theoretical and clinical perspectives on the concepts of attachment, bonding, grief and loss will be discussed. The course also includes instruction in basic counseling and crisis intervention skills. Students will answer calls on the CVM C.A.R.E. Helpline under the supervision of the instructor. Prerequisite: VB 623 or consent of instructor.

VCM 625  **Basic Zoological Medicine**  credit: 2 hours.

Zoological Medicine is an elective course for veterinary students in their second year of the veterinary curriculum. Students will learn comparative anatomy, physiology, husbandry, and handling of zoological animal species encountered in exotic animal pet practice, including small mammals, bird, reptiles, amphibians, and fish. The most commonly encountered diseases of species will also be discussed. Prerequisite: Enrollment in the 2nd year veterinary curriculum.

VCM 627  **Practice Management**  credit: 1 hours.
(V C M 327) Principles of managing a private veterinary practice including practice evaluation, financing, legal formats for owning and operating a practice, economics, personnel management, accounting and record keeping, and marketing. Approved for S/U grading only. Prerequisite: Third or fourth year standing in veterinary curriculum.

VCM 628 Veterinary Clinical Orient I credit: 1 hours.
Lectures, discussions and laboratories presenting case material illustrating the interrelationships between the basic sciences and their applications in small animal medicine and surgery and introduction to client relations and ethical considerations. Laboratories cover instruction and hands-on experience in basic clinical techniques of animal handling and restraint, physical examination, venipuncture and drug administration. Approved for both letter and S/U grading. Prerequisite: First-year standing in the veterinary medicine curriculum.

VCM 629 Veterinary Clinical Orient II credit: 1 hours.
Laboratories on large animal restraint, physical examination, and basic diagnostic techniques. Animal handling and animal husbandry will be emphasized to allow students to more safely handle large animals in clinical settings later in the veterinary curriculum. Prerequisite: First-year standing in the veterinary medicine curriculum.

VCM 630 Companion Animal Medicine I credit: 2 hours.
Pathophysiology, diagnosis, treatment, and prophylaxis of diseases of the eye and nervous system. Prerequisite: Registration in the veterinary curriculum or consent of instructor.

VCM 631 Companion Animal Medicine II credit: 3 hours.
Pathophysiology, diagnosis, management and prevention of diseases of skin, endocrine disorders, and gastrointestinal diseases. Prerequisite: Third-year standing in the veterinary medicine curriculum or consent of instructor.

VCM 632 Companion Animal Medicine III credit: 3 hours.
Pathophysiology, diagnosis, management and prevention of renal, respiratory, and immune mediated diseases. Introduction to medical oncology and caged bird medicine. Prerequisite: Third-year standing in the veterinary medicine curriculum.

VCM 633 Companion Animal Medicine IV credit: 2 hours.
Pathophysiology, diagnosis, treatment, and prophylaxis of diseases of horses and caged birds. Prerequisite: Registration in the veterinary medicine curriculum or consent of instructor.

VCM 635 Advanced Veterinary Cardiology credit: 1 hours.
Emphasizes the application of electrocardiography and various cardiac imaging modalities (echocardiography, angiography) for the evaluation of companion animals with cardiovascular disease. Approved for S/U grading only. Prerequisite: Credit or concurrent enrollment in VCM 632.

VCM 636 Cardiovascul/Critical Care Med credit: 2 hours.
Pathophysiology, diagnosis, treatment and prophylaxis of cardiovascular diseases of domestic animals followed by an introduction to the management of critically ill patients in an intensive care setting. Prerequisite: Registration in the veterinary professional curriculum.

VCM 637 Ruminant Health & Production I credit: 2.5 hours.
Covers important medical and surgical diseases of ruminants and their impact on animal health and production. Lectures (2 hours/week) provide information about clinical signs, diagnosis, treatment, prevention, and cost of diseases, using a body system approach. Clinical case material and actual herd investigations are used for illustration. Laboratory/discussion sessions are held once/week during the second half of the semester. These sessions allow students to work through individual animal and herd problems, practice restraint, physical examination, and venipuncture on cattle, and become familiar with the ruminant industries. Field trips to University farms are used to demonstrate husbandry and management practices for ruminant species and discuss how these practices impact animal, human and environmental health and farm economics. Students also spend time in the Food Animal Clinic.

VCM 638 Ruminant Health&Production II credit: 2 hours.
Continuation of VCM 637. Covers important medical and surgical diseases of ruminants and their impact on animal health and production. Lectures (2 hours/week) provide information about clinical signs, diagnosis, treatment, prevention, and cost of diseases, using a body system approach. Clinical case material and actual herd investigations are used for illustration. Food quality, food safety, animal welfare, and foreign animal diseases are discussed. Prerequisite: VCM 637.

VCM 639 Swine Health and Production credit: 2 hours.
This course covers important diseases of swine and their impact on animal health and production. Lectures (5 hours/week) provide information about clinical signs, diagnosis, treatment, prevention, and cost of diseases, as well as on husbandry practices and production goals. Actual herd investigations are used for illustration. Laboratory/discussion sessions are held once/week during the course. These sessions allow students to investigate herd problems, interpret diagnostic reports, and use swine records. A field trip to the Veterinary Medicine Research Farm allows students to evaluate housing and environmental conditions on a swine farm.
VCM 640  **Avian Medicine and Surgery**  credit: 1.5 hours.
Diagnosis, pathophysiology, and treatment of medical and surgical diseases in companion birds. Approved for S/U grading only. Prerequisite: VCM 625.

VCM 644  **Intro Concept Swine Medicine**  credit: 1 hours.
Elective course which introduces sophomore veterinary students to the swine industry and herd health. Sixteen lecture-group discussion hours. Approved for S/U grading only. Prerequisite: Second year standing in veterinary curriculum.

VCM 646  **Lab Animal Science I**  credit: 1 hours.
Addresses fundamental issues in Laboratory Animal Sciences including history, regulatory aspects, ethical considerations, and basic biology and husbandry of common laboratory animal species. Same as ANSC 455. 1 graduate or professional hour. Approved for both letter and S/U grading. Prerequisite: Second year standing in veterinary curriculum, or consent of instructor.

VCM 647  **Public Health Selective**  credit: 3 hours.
Intended for students desiring experiential learning focused on public health and the role of the veterinarian in protecting human health at the individual and population levels. It includes didactic instruction in basic and applied public health, lecture/discussion sessions, exercises, field trips, and field investigations. Topics will include recognition and diagnosis of zoonotic and foreign animal diseases in pets and livestock, public health issues in wildlife management, farm to processing plant issues in microbial safety and residue avoidance, conduct of outbreak investigations, and public health policy issues with respect to agriculture, zoonotic disease, and occupational health and safety. Topics may include food and water borne illness investigation, respiratory and diarrheal disease surveillance, survey of health care access for migrant farm workers, public health workforce needs surveys, chronic disease clusters and microbiological surveys at processing plants. Approved for S/U grading only. Prerequisite: Fourth year standing in the veterinary medicine curriculum, registration in the graduate college, or consent of instructor.

VCM 650  **Clinical Sm Animal Dentistry**  credit: 1.5 hours.
Clerkship in small animal dentistry for VM-4 professional students. Students will assist in the diagnosis and treatment of dogs and cats with dental disease. The psychomotor skills laboratory will be available for students practicing dental procedures on models and frozen specimens. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth-year standing or equivalent in the veterinary medicine curriculum and with prior consent of instructor.

VCM 651  **Introduction to Surgery**  credit: 1 hours.
Surgical principles including sterile technique, hemostasis, tissue handling, and wound healing with emphasis on clinical application in domestic animals; laboratory covers demonstrations and practice of surgical principles. Prerequisite: Third year standing in veterinary medicine curriculum.

VCM 652  **General Small Animal Surgery**  credit: 1.5 hours.
Surgical procedures of major body systems, emphasizing preoperative, operative, and postoperative patient care, together with appropriate laboratory practice. Prerequisite: Third year standing in veterinary medicine curriculum or consent of instructor; VCM 651.

VCM 653  **General Large Animal Surgery**  credit: 1.5 hours.
Surgical procedures of major body systems, emphasizing preoperative, operative, and postoperative patient care, together with appropriate laboratory practice. Prerequisite: Third year standing in veterinary medicine curriculum or consent of instructor; VCM 651.

VCM 654  **Special Small Animal Surgery**  credit: 2.5 TO 3 hours.
Lecture and clinical demonstrations on surgical diseases and their diagnosis, operative treatment, and after care, together with appropriate laboratory practice. The fracture fixation laboratory is a case based laboratory experience for students to apply decision making processes and gain hands on experience with implant application. Prerequisite: Third year standing in veterinary medicine curriculum or consent of instructor. Students taking the fracture fixation laboratory must be concurrently enrolled in the lecture portion of the course.

VCM 655  **Special Large Animal Surgery**  credit: 1.5 TO 2.5 hours.
Lectures on surgical diseases and their diagnosis, treatment, and after care. The food animal laboratory portion is designed to provide students hands-on training in surgical and anesthetic procedures performed frequently on cattle in veterinary practice. The equine laboratory portion of the course provides clinical demonstrations on surgical diseases and their diagnosis, treatment, and after care, together with appropriate laboratory practice. Students taking lecture portion only will receive 2 hours credit. Students taking lecture and a lab will receive 2.5 hours. Prerequisite: Third year standing in veterinary medicine curriculum or consent of instructor.

VCM 656  **Lab Animal Science II**  credit: 1 hours.
Continuation of VCM 646. Additional topics include laboratory animal diseases, biohazard control, gnotobiology and animal models of human disease. Same as ANSC 456. 1 graduate or professional hour. Approved for both letter and S/U grading. Prerequisite: VCM 646 or equivalent, or consent of instructor.
VCM 657  Urban and Shelter Anim Med  credit: 1 hours.
Series of lectures/discussions focusing on the history of the humane movement and animal control in the United States and abroad, legal issues for animal control/welfare, the association of domestic violence, animal abuse, and animal fighting, shelter animal medicine and operation, infectious disease management in the shelter setting, population control/epidemiology, feral animal issues, and animal behavior. The "laboratory" portion entails a optional field trip or out rotations with The Anti-Cruelty Society in Chicago, the Champaign/ Urbana Humane Society, and CCHS. Approved for S/U grading only. Prerequisite: Registration in the veterinary curriculum or consent of the instructor.

VCM 658  Clinical Procedure/Problem I  credit: 1 hours.
Course is designed to train students in physical examination, procedural and other diagnostic skills required to diagnose and treat common diseases of companion animals. Students will also be introduced to problem-based medical problems solving and evidence-based medicine. Prerequisite: Second-year standing in the veterinary medicine curriculum.

VCM 659  Clinical Procedure/Problem II  credit: 1 hours.
Course is designed to train students in physical examination, procedural and other diagnostic skills required to diagnose and treat common diseases of companion animals. Students will also be introduced to a variety of rotations in the veterinary teaching hospital. Prerequisite: Third-year standing in the veterinary medicine curriculum.

VCM 660  Clinical Procedure/Problem 3  credit: 1 hours.
(VCM 360) A required course for veterinary students in their junior year. Course will focus on food-producing animals, and is designed to provide students with hands-on training in physical examination and restraint of cattle and to develop problem-solving skills needed to diagnose, control, and prevent disease in individual animals and herds. This course must be taken concurrently with VCM 634. Prerequisite: Third-year veterinary student.

VCM 661  Advanced Equine Lameness  credit: 2 hours.
Covers equine lameness from a clinician's perspective. Offers an in-depth integrative approach to the diagnosis of equine lameness using the presenting complaint as a starting point. Rather than approaching equine musculoskeletal disease from the perspective of specific injuries, students will be guided through the lameness examination process. Active student participation in class discussion is expected. 2 professional hour. May not be repeated for credit. Prerequisite: Third year veterinary student.

VCM 663  Small Animal Dermatology  credit: 1 hours.
First half of the course presents a systematic approach to small animal dermatologic diagnoses and therapeutics; the second half deals with immunological disorders, seborrheic syndromes, hereditary disorders, cutaneous neoplasms, and feline dermatology. Prerequisite: VCM 631 or equivalent, or consent of instructor.

VCM 664  Wildlife and Exotics  credit: 1.5 OR 3 hours.
Clinical experience pertaining to wildlife and exotic pet species including avian, reptile, amphibian, and small mammal species. Exposes participants to all aspects of non-traditional species care including medicine, surgery, husbandry, population considerations, infectious and zoonotic disease principles and shelter medicine. Participants will work with patients of the Wildlife Medical Clinic, the Exotic Animal service, the Acute Illness Center and participating shelters. A basic understanding of anatomy, physiology, husbandry and handling of non-traditional species is required as is the completion of a relevant project by the end of the course. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth year standing in the veterinary medicine curriculum, 1 semester of previous participation on the Wildlife Medical Clinic or other demonstrated interest in non-traditional species medicine approved by the course instructor.

VCM 665  Aquatic Medicine Clinic  credit: 1.5 TO 6 hours.
Clerkship in aquatic animal medicine for VM-4 professional students. Approved for S/U grading only. May be repeated to a maximum of 6 hours. Prerequisite: Fourth year standing in the veterinary medicine curriculum.

VCM 666  Shelter Animal Med and Surg  credit: 1.5 TO 4.5 hours.
Partnering with Chicago's Animal Care and Control, The AntiCruelty Society of Chicago, and the Champaign County Humane Society, this course will provide a truly unique community veterinary practice program for the low income populations of Chicago and Champaign County. Clinical rotations at these facilities will expose veterinary students to community practice through a low income clinic and shelter setting and explore new ways of improving animal health and welfare, alleviating animal suffering, abuse and abandonment, and protecting public health. Approved for S/U grading only. May be repeated to a maximum of 6 hours. Prerequisite: VCM 657.

VCM 667  Radiology and Radiobiology  credit: 3 hours.
General principles of radiology and radiobiology techniques and application to the diagnosis and therapy of animal diseases; lectures and discussions. Same as VB 667. Prerequisite: Third-year standing in veterinary medicine curriculum or consent of instructor.

VCM 668  Clinical Lab Animal Medicine  credit: 1.5 hours.
Elective clerkship in laboratory animal medicine for VM-4 professional students. The objective is to provide the senior veterinary student a broad practical exposure to the specialty of laboratory animal medicine. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Fourth year standing or equivalent in the veterinary medicine curriculum.

**VCM 669  Primary Care Elective Rotation**  credit: 1.5 TO 3 hours.

Externship at a general private veterinary practice in the United States. This elective clinical rotation will expose students to primary and preventive veterinary medical care of small and/or large animals in a private practice setting, and will familiarize students with the business and operational aspects of private practice. Approved for S/U grading only. May be repeated in the same or subsequent terms to a maximum of 3 hours. Prerequisite: All preclinical and paraclinical core courses in the veterinary medicine professional curriculum.

**VCM 670  Sm Anim Community Practice**  credit: 1 hours.

Elective experience in small animal community practice for VM 1, 2, and 3 professional students. This course provides an introduction to the issues pet practitioners face in private practice. It includes aspects of pet behavior/development, infectious diseases, genetic disease screening, preventive medicine, reproductive medicine, elective minor surgeries, population dynamics, nutrition, oral health and general medicine. Emphasis will include integration of the hospital team, client communication and education, and development of critical thinking, time management and interpersonal communication. May be repeated to a maximum of 2 hours. Approved for S/U grading only. Prerequisite: First, second, or third year standing in veterinary medicine professional curriculum.

**VCM 673  Companion Animal Rehab**  credit: 1 hours.

Series of lectures/discussions focusing on the proper application of companion animal rehabilitation modalities. Designed to give an understanding of the basics of rehabilitation and begin the thought process of implementing rehabilitation in to veterinary medicine. Prerequisite: Registration in the veterinary curriculum or consent of the instructor.

**VCM 675  Theriogenology**  credit: 4 hours.

Examines principles of animal reproduction, fertility, and obstetrics of all species of domestic animals, emphasizing farm animals; lectures, discussion, and laboratory practice in obstetrics, pregnancy diagnosis, and male and female infertility. Prerequisite: Third-year standing in veterinary medicine curriculum.

**VCM 676  Anesthesiology/Fluid Therapy**  credit: 2 hours.

Principles of veterinary anesthesiology emphasizing clinical application of anesthetic techniques and procedures in domestic animals; clinical pharmacology of preanesthetic, anesthetic and related drugs, anesthetic and physiologic monitoring equipment, and shock; teaches fluid and electrolyte therapy with overall emphasis on maintenance of homeostasis in anesthetized animals. Prerequisite: Third-year standing in veterinary medicine curriculum.

**VCM 679  Adv Veterinary Ophthalmology**  credit: 0 TO 3 hours.

Anatomic, physiologic, pathologic, and pharmacologic considerations in eye diseases and their treatments; instrumentation and methods of study of ocular structure, physiology, and diseases; and laboratories devoted to techniques of examination of the eye and surgical procedures used in treatment of eye diseases. 1 or 2 professional hours (1 hour if taking lecture only; 2 hours if taking lecture and lab); or 3 graduate hours. Prerequisite: Fourth-year standing in veterinary medicine curriculum.

**VCM 680  Dairy Herd Health Management**  credit: 1 hours.

Study of dairy cattle practice, including economics, enterprise, management, herd and individual cow health, reproduction, and disease control. Approved for both letter and S/U grading. Prerequisite: Third-year standing in veterinary medicine curriculum.

**VCM 681  Adv Equine Internal Medicine**  credit: 1 OR 2 hours.

Advanced instruction in case management, laboratory data interpretation, decision-making regarding therapeutics, and advanced diagnostic techniques. Approved for S/U grading only. Prerequisite: VCM 633 or consent of instructor.

**VCM 682  Wildlife Medicine**  credit: 2 hours.

Available to 2nd and 3rd year students enrolled in the veterinary curriculum. Hands-on and didactic training pertaining to the diseases and medical management of free-ranging wildlife presented to the Wildlife Medical Clinic. Performance will be assessed based on attendance to weekly rounds, lectures, and participation on treatment teams. Students will be required to maintain a case/training journal and prepare a publication-ready manuscript describing a case report or research project chosen in consultation with the instructor(s). Leadership of a treatment team is encourage but not required. Offered for S/U grading only. May be repeated to a maximum of 4 hours. Prerequisite: Active member status in the Wildlife Medical Clinic is required for course enrollment.

**VCM 683  Advanced Soft Tissue Surgery**  credit: 1 hours.

Advanced instruction in the pathophysiology, diagnosis and treatment of soft tissue surgical disorders of the small animal patient. Lectures will incorporate clinical case presentations and discussion. The laboratory sessions will be used to teach surgical procedures which are commonly performed in small animal clinical practice and which are not taught in the core curriculum. Prerequisite: Concurrent registration in VCM 654.

**VCM 684  Client Relations**  credit: 1 hours.
Introduction to client relations, including techniques of effective verbal and nonverbal communication and applications of these techniques for veterinary students.

**VCM 685**  **Adv Rad Interpret Large Animal**  credit: 2 hours.
In-depth study of radiographic diagnosis applied to large animals, primarily equine; lecture, case study, and discussion centering on anatomic areas, e.g., foot, fetlock, metacarpus/metatarsus, carpus, tarsus, upper limb joints, and head and neck. Prerequisite: VCM 667 or equivalent.

**VCM 687**  **Adv Veterinary Anesthesiology**  credit: 1 hours.
Lectures cover mechanical ventilators and the physiologic effects of mechanical ventilation on acid-base status, cardiopulmonary function and other homeostatic mechanisms in anesthetized animals; high frequency ventilation in relation to other forms of mechanical respiratory support; recently developed anesthetic agents, techniques, and their clinical applications; interactions between non-anesthetic drugs and their effects on surgical patient response to anesthetic and anesthetic-related agents. 1 graduate or professional hour. Approved for S/U grading only. Prerequisite: Fourth year standing in veterinary medicine curriculum or consent of instructor.

**VCM 689**  **Sm An Diagnostic Instrument**  credit: 1 hours.
Training in the use of special medical and surgical diagnostic techniques, including endoscopy, and various biopsy techniques. Approved for S/U grading only. Prerequisite: Fourth-year standing in veterinary medicine curriculum.

**VCM 691**  **Adv Orthopedics Fract Fixation**  credit: 1 hours.
Advanced instruction in the pathophysiology of bone fracture and healing, techniques of fracture fixation, and complications of fracture repair. Prerequisite: VCM 654; third year standing in the veterinary medicine curriculum.

**VCM 692**  **Special Problems**  credit: 1 TO 3 hours.
Individual research on a special problem chosen in consultation with the instructor and department head. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours. 1 to 3 graduate or professional hours. Prerequisite: Enrollment in veterinary medicine curriculum with grade point average of 3.0 or above, or consent of instructor.

**VCM 694**  **Veterinary Clinical Medicine**  credit: 1 TO 3 hours.
To be used to designate a trial or experimental course for five or more students, designed to be an elective in the CVM professional curriculum. The course can be taught under this designation for two years or two offerings, whichever time is greater. Approved for both letter and S/U grading. May be repeated to a maximum of 6 hours. 1 to 3 graduate or professional hours. Prerequisite: Registration in the veterinary medicine curriculum or consent of instructor.

**VCM 698**  **Adv Small Animal Dentistry**  credit: 1 hours.
The recognition and appropriate treatment of various types of feline and canine dental diseases will be discussed. The laboratories will be utilized to assist students in the determination of the appropriate diagnosis based on dental radiographs, photographs and models. Oral surgery, periodontic and endodontic therapy will also be performed in the laboratory. 1 graduate or professional hour. Approved for S/U grading only. Prerequisite: VCM 652.
Veterinary Medicine Courses

Veterinary Medicine
Head of Department: Dr. Gerald Pijanowski
Department Office: 2001 S. Lincoln Ave., Rm 2271G, Urbana, IL 61802

VM 620  Canine Feline Behavior  credit: 2 OR 3 hours.
This lecture/discussion course examines the evolutionary histories, domestication process, development behavior, social behavior and problem behavior of the dog and the cat. Topics also include learning theory, training methods, and behavior modification approaches for companion animals. Analysis and discussion of behavior/training case studies are included, and lectures and discussions focus on issues that are relevant to the involved in-depth analysis of behavior problem case studies.

VM 626  The Basics of Business  credit: 1 hours.
Business principles related to food animal veterinary practice and the livestock industry including economics, finance, communication and interpersonal skills, accounting, and management. 1 graduate or professional hour. Prerequisite: Third year standing in the veterinary curriculum or consent of instructor.

VM 630  Veterinary Medical Ethics  credit: 1 hours.
Introduction to the history, recent developments, scope, and trends of veterinary medical education, practice, research, public health, and other area; functions; obligations, and organization of the profession. Approved for both letter and S/U grading. Prerequisite: Second-year standing in veterinary curriculum.

VM 642  Contemporary Issues in Vet Med  credit: 1 hours.
An introductory course for first year veterinary students that will explore the career options in veterinary medicine as well as facilitate in educating students on person finance and setting actionable goals. Approved for S/U grading only.

VM 643  Fundamentals of Management  credit: 1 hours.
An introductory course for second year veterinary students that will explore the business side of veterinary medicine as well as facilitate in educating students on personal finance, interpersonal skills, economics, and presentation skills. Approved for S/U grading only.

VM 645  Communications in Practice  credit: 1 hours.
An introductory course for third year veterinary students that will explore the service and communication side of veterinary medicine as well as facilitate in educating students on personal finance, resume development, interviewing contracts and negotiation, and intra and interpersonal communication. Approved for S/U grading only.

VM 672  Veterinary Jurisprudence  credit: 1 hours.
Principles of law of importance to members of the veterinary profession; animal disease and related regulatory laws and their administration; and federal procedure under animal disease, food, and meat inspection laws. Prerequisite: Second-year standing in veterinary medicine curriculum.

VM 694  Veterinary Medicine  credit: 1 TO 4 hours.
To be used to designate a trial or experimental course for five or more students. It is designed to be an elective fin the CVM professional curriculum. A course can be taught under this designation two times within a two-year period and cannot be renewed as a VM 694 course. 1 to 4 professional hours. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Registration in the veterinary medicine curriculum or consent of instructor.
Wolof

Linguistics
Head of Department: Elabbas Benmamoun
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3563
www.linguistics.uiuc.edu

WLOF 201  **Elementary Wolof I**  credit: 5 hours.
Introduction to Wolof; emphasizes grammar, pronunciation, reading, and conversation in standard Wolof. Same as AFST 241. Participation in language laboratory required.

WLOF 202  **Elementary Wolof II**  credit: 5 hours.
Continuation of elementary Wolof, with introduction of more advanced grammar; emphasizes more fluency in speaking, reading, and writing simple sentences in standard Wolof. Same as AFST 242. Prerequisite: WLOF 201. Participation in language laboratory required.

WLOF 403  **Intermediate Wolof I**  credit: 4 hours.
Survey of more advanced grammar, with emphasis on increasing conversational fluency, composition skills, study of written texts in standard and Dakar Wolof, and discussion of grammatical variations. Same as AFST 443. Prerequisite: WLOF 202.

WLOF 404  **Intermediate Wolof II**  credit: 4 hours.
Continuation of WLOF 403. Emphasizes ability to engage in reasonably fluent discourse in Wolof, comprehensive knowledge of formal grammar, and ability to read ordinary texts in standard and Dakar Wolof. Same as AFST 444. Prerequisite: WLOF 403.

WLOF 405  **Advanced Wolof I**  credit: 3 hours.
Third year Wolof with emphasis on conversational fluency and on increased ability in reading and comprehending texts, including newspaper prose and West African cultural materials. Course will also deal with the advanced level grammar found in such texts. Same as AFST 445. Prerequisite: WLOF 404 or equivalent.

WLOF 406  **Advanced Wolof II**  credit: 3 hours.
Continuation of WLOF 405 with increased emphasis on conversational fluency and comprehension of advanced level grammar in the reading of a variety of prose texts on current cultural issues. Same as AFST 446. Prerequisite: WLOF 405 or equivalent.

WLOF 407  **Topics Wolof Lang & Lit I**  credit: 3 hours.
Selected readings from modern Wolof authors, with a focus on novels, plays, and basic poetry illustrative of West African cultural issues and advanced level Wolof grammar, as well as development of expository writing skills. Same as AFST 447. Prerequisite: WLOF 406.

WLOF 408  **Topics Wolof Lang & Lit II**  credit: 3 hours.
Continuation of WLOF 407 with increased emphasis on the reading and comprehension of literary texts exemplified in advanced level novels, plays, and poetry, as well as on advanced mastery of expository writing skills. Same as AFST 448. Prerequisite: WLOF 407.
**Yiddish**

Germanic Languages and Literatures  
Head of Department: Mara Wade  
Department Office: 2090 Foreign Languages Building, 707 South Mathews, Urbana  
Phone: 333-1288  
www.germanic.uiuc.edu

**YDSH 101**  **Beginning Yiddish I**  credit: 4 hours.  
Course develops basic conversational and reading skills as well as the essentials of Yiddish grammar.

**YDSH 102**  **Beginning Yiddish II**  credit: 4 hours.  
Continuation of YDSH 101 focusing on comprehension and reading skills. Prerequisite: YDSH 101.

**YDSH 103**  **Intermediate Yiddish I**  credit: 4 hours.  
Continuation of YDSH 102. Develops more advanced conversational, comprehension, reading and writing skills as well as introducing more advanced features of Yiddish grammar. Prerequisite: YDSH 102 or equivalent placement score.

**YDSH 104**  **Intermediate Yiddish II**  credit: 4 hours.  
Continuation of YDSH 103. Prerequisite: YDSH 103 or equivalent placement score.

**YDSH 220**  **Jewish Storytelling**  credit: 3 hours.  
Course will introduce the great Jewish storytellers such as Nachman of Bratslav, Scholem-Aleichem, and I.B. Singer through readings of Yiddish tales, short stories, poetry, drama and excerpts from novels and autobiographies from the 19th and 20th centuries. In addition, Yiddish films and folklore will be used to exemplify the variety of Jewish cultural expression in Eastern Europe, Russia, and America. Course will also present a sample of critical approaches to Yiddish literature. Taught in English translation. Same as CWL 221, ENGL 223, and RLST 220.

This course satisfies the General Education Criteria for a:  
UIUC: Literature and the Arts  
UIUC: Western Compartv Cult

**YDSH 320**  **Lit Responses to the Holocaust**  credit: 3 hours.  
Course introduces a variety of Jewish literary responses to the Holocaust written during and after the Second World War (from 1939). The discussion of Holocaust memoirs, diaries, novels, short stories, poems, and other texts will focus on the unique contribution of literary works to our understanding of the Holocaust. In addition, the works and their authors will be situated in their Jewish cultural historical context. Taught in English translation. Same as CWL 320, ENGL 359, and RLST 320.

This course satisfies the General Education Criteria for a:  
UIUC: Literature and the Arts  
UIUC: Western Compartv Cult

**YDSH 380**  **Jewish Immigrant Literature**  credit: 3 hours.  
Examines Jewish immigrant literature in America from the late nineteenth century to the 1980's. Traces the change of the Jewish immigrant community into an ethnic community by contrasting Yiddish and English literary texts written in America. Films about the Jewish immigrant experience in America will be shown and discussed as examples of American popular culture. All readings will be in English. Same as ENGL 363.

This course satisfies the General Education Criteria for a:  
UIUC: Literature and the Arts  
UIUC: US Minority Culture(s)

**YDSH 420**  **Jewish Life-Writing**  credit: 3 OR 4 hours.  
Jewish life-writing from the late 18th century until today. Emphasis on cultural historical context, literary styles, and forms. All texts will be available in English translation. Same as CWL 421, HIST 436, RLST 420, and SLAV 420. 3 undergraduate hours. 4 graduate hours.
Zulu

Linguistics
Head of Department: Elabbas Benmamoun
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3563
www.linguistics.uiuc.edu

ZULU 201  Elementary Zulu I  credit: 5 hours.
Introduction to Zulu; emphasis on grammar, pronunciation, reading and conversation in standard Zulu. Same as AFST 251. Participation in the language laboratory is required.

ZULU 202  Elementary Zulu II  credit: 5 hours.
Continuation of ZULU 201 with introduction of more advanced grammar; emphasis on more fluency in speaking, reading, and writing simple sentences in standard Zulu. Same as AFST 252. Participation in the language laboratory is required. Prerequisite: ZULU 201.

ZULU 403  Intermediate Zulu I  credit: 4 hours.
Survey of more advanced grammar; emphasis on increasing conversational fluency, composition skills, study of written texts in standard Zulu and discussions of grammatical variations. Same as AFST 451. Prerequisite: ZULU 202.

ZULU 404  Intermediate Zulu II  credit: 4 hours.
Continuation of ZULU 403; emphasis on increasing conversational fluency, composition skills, study of written texts in the standard and spoken Zulu dialects, and discussion of grammatical variations. Same as AFST 452. Prerequisite: ZULU 403.

ZULU 405  Advanced Zulu I  credit: 3 hours.
Third year Zulu with emphasis on conversational fluency and on increased facility in reading, comprehension, writing in response to authentic Zulu texts such as documented in selected newspapers, magazines, and South African cultural materials. Same as AFST 453. Prerequisite: ZULU 404.

ZULU 406  Advanced Zulu II  credit: 3 hours.
Continuation of Zulu 405 with increased emphasis on conversational fluency and increased facility in reading and comprehending authentic literary texts including prose and cultural materials from South Africa. Same as AFST 454. Prerequisite: ZULU 405.