Asian American Studies

Asian American Studies Program
Director: Kent Ono
Program Office: 1208 West Nevada, Urbana
Phone: 244-9530
www.aasp.uiuc.edu

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 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.
This course may be repeated to a maximum of 6 credit 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 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: 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.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

AAS 284  Adv Topics in Asian America  credit: 3 hours.
Same as ANTH 284. See ANTH 284.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: US Minority Culture(s)

AAS 286  Asian American Literature  credit: 3 hours.
Same as ENGL 286. See ENGL 286.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: US Minority Culture(s)

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 310 Race and Cultural Diversity credit: 4 hours.
Same as AFRO 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

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 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 COMM 365 and CINE 365. Prerequisite: Any AAS course at the 100 or 200 level or consent of instructor.

AAS 397 Asian Families in America credit: 3 hours.
Same as 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 LLS 435, AFRO 435, COMM 432, and GWS 435. 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, up 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 470 Asian American Psychology credit: 3 OR 4 hours.
Same as PSYC 470. See PSYC 470.

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

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 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. Prerequisite: Graduate standing or consent of instructor.

AAS 590  **Asian Am Studies Seminar**  credit: 4 hours.

May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing or consent of instructor.
Agricultural and Biological Engineering

Agricultural 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

ABE 100 Intro to Agr Engineering credit: 1 hours.
Introduction to the engineering profession with career opportunities in the agricultural engineering discipline. Interactive class activities include concepts necessary for becoming a successful engineer including time management, design concepts, ethics, and team building. Students become familiar with laboratories, computer facilities, internships and other opportunities that are available to agricultural engineering students. A team design experience is included. Class emphasis on technical communication and problem-solving skills as well as career planning. Approved for both letter and S/U grading.

ABE 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
Experimental course on a special topic in Agricultural Engineering. May be repeated to a maximum of 12 hours.

ABE 221 Agr & Bio Engineering I credit: 4 hours.
Introduction to engineering methods used in the design and management of agricultural, biological and environmental systems. Topics covered include the 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: MATH 220, calculus and analytical geometry, or equivalent.

ABE 222 Agr & Bio Engineering II credit: 4 hours.
Introduction to biomaterials and bioprocess design. Includes 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: MATH 220, calculus and analytical geometry, or equivalent.

ABE 293 Off-Campus Internship credit: 1 TO 4 hours.
Supervised, off-campus experience in a field directly pertaining to a subject matter in agricultural engineering. May be repeated to a maximum of 8 hours. Prerequisite: Sophomore standing and consent of instructor.

ABE 295 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.

ABE 361 Princ of Off-Road Machines 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 Env Control for Bio 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 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 8 hours. Prerequisite: Junior standing, admission to the ACES Honors Program or James Scholar Program in Engineering, and consent of instructor.

ABE 398 Special Topics credit: 1 TO 3 hours.
Group discussion or an experimental course on a special topic in agricultural engineering. May be repeated to a maximum of 12 hours.

ABE 420 Kinem and Dynm of Mechani Sys credit: 3 hours.
Same as ME 440. See ME 440.

ABE 425 Eng Measurement Systems credit: 4 hours.
Emphasizes fundamental and integrated skills in designing engineering measurement systems and performing engineering measurements. Main topics include design of engineering measurement systems, principles of sensors, signal conditioning, computer data acquisition, engineering test design, and data analysis. Includes laboratory. Credit is not given for both ABE 425 and ME 360. Prerequisite: ECE 205.

**ABE 426  Applied Machine Vision** credit: 3 hours.
The convergence of computer imaging, pattern recognition, and artificial intelligence have made it possible to quantify complex physical phenomena that commonly occur in food and agricultural systems. This course introduces students to basic principles required for machine vision applications. Hardware and software aspects for machine vision applications will be studied. Includes laboratory. Prerequisite: CS 101, MATH 225, or consent of instructor.

**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. Prerequisite: Senior or graduate standing, or consent of instructor.

**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 456  Land and Water Resources Eng** 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 459  Drainage and Water Management** credit: 0 TO 4 hours.
Design, construction, performance, and maintenance of surface, subsurface, and open ditch agricultural drainage systems. Includes laboratory. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Credit or concurrent registration in TAM 335.

**ABE 466  Engineering Off-Road Vehicles** credit: 3 hours.
Engineering aspects of 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; and operator environment. Includes laboratory. Prerequisite: ME 300 or equivalent.

**ABE 469  Off-Road Industry Design Proj** credit: 3 hours.
Emphasizes open-ended design projects in the off-road equipment industry which utilize principles of machine design, engineering analysis and functional operation of engineering systems. Projects are submitted and sponsored by industrial clients, design team developed, concepts visualized, alternatives evaluated and geometry created using CAD systems. Emphases on communication skills, technical writing and interaction with industry representatives. Students operate in a team-based industrial environment with "real life" industrial projects. Prerequisite: ABE 361, TAM 335 or CHBE 421 or credit or concurrent registration in ME 370.

**ABE 476  Indoor Air Quality Engineering** credit: 3 hours.
Principles and applications of indoor air quality. Topics include particle mechanics, gas kinetics, air quality sampling principles and techniques, air cleaning technologies (i.e. filters, cyclones, electrostatic precipitation) for indoor environments, and ventilation effectiveness. Includes laboratory. Prerequisite: PHYS 213, MATH 385, TAM 335 or equivalent.

**ABE 479  Design of Agr & Bio Structures** credit: 3 hours.
Complete design of light frame building components including timber, concrete, beams and connectors. Design of heating and ventilation systems. Includes laboratory. Prerequisite: Senior standing or graduate student or consent of instructor.

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

**ABE 483  Eng Properties of Food Mat** 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: Credit or concurrent registration in TAM 251 and CHBE 421; or TAM 251, TAM 335, and ME 300 or ME 320.

**ABE 485  Food and Process Eng 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 or consent of instructor; ME 300 recommended.

ABE 488 Bioprocessing Grains for Fuels credit: 3 hours.
Study of engineering and scientific principles involved in 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 will be discussed. Process simulation and economic analysis will also be addressed. Prerequisite: TAM 251 and CHBE 321; or consent of instructor.

ABE 489 Process Des for Corn Milling credit: 3 hours.
Engineering and scientific principles involved in 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: ME 300 or ME 320 or CHBE 421, or consent of instructor.

ABE 498 Special Topics credit: 1 TO 4 hours.
Group discussion or an experimental course on a special topic in agricultural engineering. May be repeated 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. Prerequisite: Graduate standing.

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. Prerequisite: Graduate standing.

ABE 561 Off-Road Vehicle Mechatronics credit: 4 hours.
Emphasizes integrated skills in designing mechatronic systems with regard to off-road vehicles. Main topics include fundamentals for mechatronic systems design; modeling of off-road vehicle systems, on-vehicle information management, and intelligent vehicle controls. Prerequisite: ABE 425 or ME 461 or MFGE 430; ECE 486 or ME 460; or equivalent.

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. Prerequisite: Graduate standing.

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

Head of Department: Ira Solomon
Department Office: 360 Wohlers Hall, 1206 South Sixth, Champaign
Phone: 333-0857
www.business.uiuc.edu/accountancy/

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. May be repeated in the same or subsequent terms to a maximum of 3 hours. Approved for both letter and S/U grading. 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 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. May be repeated to a maximum of 6 hours. 2 to 4 undergraduate hours. Prerequisite: Cumulative grade-point average of 3.0., honors in the junior year, or consent of department; senior standing.

**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 Concepts and Principles**  credit: 4 hours.
Fundamental structure of accounting theory developed through the study of concepts characteristic of accounting and an examination of the literature dealing with the concise formulation of accounting principles. Prerequisite: Enrollment in graduate accounting degree program or consent of department.

**ACCY 512 Management Accounting, I**  credit: 4 hours.
Examines recent conceptual and analytical developments in the area of management accounting; includes a study of modern and relevant planning and control techniques and their underlying concepts as applied to the various functional areas within the firm. Prerequisite: Enrollment in graduate accounting degree program or consent of Department; ACCY 511

**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 to a maximum of 8 hours. Additional topics will be offered for additional credit. 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 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. 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 accounting; 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.
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 107  Agr Cons and Env Systems  credit: 2 hours.
Systems approach to analyzing problem situations from a holistic perspective, emphasizing human activities and processes, is developed using classroom illustration. This approach is then applied to a case study of a current issue impacting agriculture and rural areas. There may be a field trip to an area affected by the chosen issue. Same as ANSC 107.

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

ACE 182  Issues in Textile Marketing  credit: 3 hours.
Multi-disciplinary examination of consumer issues and fundamentals of global business, both generally and specifically as related to textile marketing. Active learning environment promoted. Consumer issues focus on consumer rights, ethics, public policy. Business fundamentals examined include textile production, distribution, marketing, management, finance and regulation.

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. May be repeated up to 5 hours in a semester, to a maximum of 12 hours. Approved for both letter and S/U grading.

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 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. 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.
Same as AFST 254. See 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 286  **Cultural Analysis of Textiles**  credit: 3 hours.
Cross-cultural variations in form, function, and meaning of textile products analyzed in relation to physiological, psychological, and sociological needs of humans; analysis of process of acculturation; case studies.

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. May be repeated up to 4 hours in a semester to a maximum of 10 hours. Approved for S/U grading only. 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 S/U and letter 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 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 320  **Commodity Marketing**  credit: 4 hours.

Examination of the structure, operations, and efficiency of grain and livestock markets; product demand and linkages between grain and livestock; problems in transportation and quality standards; price discovery and market performance; role of world trade and government policy in markets. Prerequisite: ECON 102 and ACE 222.

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. 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. This course may not be repeated for credit.

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: 4 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 433 Agribusiness Planning** credit: 3 hours.
Important aspects in the development of a marketing plan for a new or existing product or service in the agribusiness sector. Includes development of a complete business plan for a specific firm or segment with special attention to the organization of the firm and the markets in which the firm will operate. In addition, a marketing plan will be developed for a chosen product including: market analysis; business strategy and goals; implementation; financial analysis; monitoring, and contingency planning. Computerized planning packages and presentation packages are used in the development of the final presentation. Prerequisite: ACE 231 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 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 231 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. 3 undergraduate hours. This course may not be repeated for credit. 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. Prerequisite: ACE 340, 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. Prerequisite: ACE 340 and ACE 261, or equivalent.

**ACE 445 Financial Plan and Counseling** credit: 4 hours.
Financial planning and counseling philosophies, techniques, and procedures with application to individuals and families in various life cycle stages and family structures. Course will use case studies, problem-solving activities, educational exhibit preparation and participation. A financial counseling clinic will focus on debt management and retirement planning. Prerequisite: ACE 245 and junior standing or consent of instructor; FIN 230 or FIN 232 and FIN 434 are recommended.

**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 486  Business and Public Policy  credit: 3 hours.
Non-market environment (economic, legal, political, technological, and social) of business with a focus on business-government relationships (domestic and international), public policy, and corporate social responsibility. Issues, interests, institutions, and information that comprise environment and affect business performance are examined. Prerequisite: BADM 320 and ACE 387, or consent of instructor.

ACE 487  Consumers in the Marketplace  credit: 3 TO 4 hours.
Analysis of the interdependent relationships between marketing stimuli and the day-to-day lives of consumers with an emphasis on the processes involved when individuals or groups select, purchase, use, or dispose of products and services to satisfy their needs and desires. Consumer phenomena are discussed from multi-disciplinary perspectives and include research and theory from consumer behavior, cultural anthropology, marketing, sociology, and psychology. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Six hours of social science.
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 562 and 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 328 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 541  **Research in Agr Finance**  credit: 3 hours.
Current research issues in agricultural finance; topics include simulation and optimization modeling and applications, economics of organization, principal agent issues, and firm-level performance evaluation. Emphasis is placed on developing a framework to evaluate research and communicate results. Prerequisite: ACE 562; ACE 563; ACE 443 or consent of instructor.

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, and ACE 503 or consent of instructor.

ACE 560  **Research Methods**  credit: 3 TO 4 hours.
Survey of research methods that address practical and theoretical issues involved in designing, conducting, and evaluating research in agricultural and consumer economics. Prerequisite: A graduate level course in statistics.

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 and MATH 234, or equivalents.

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 and 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: MATH 234 or equivalent; 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 588  Political Econ, World Textiles  credit: 4 hours.
Examination of the structure and environment of the world textile industry with an emphasis on dynamic interactions between states, corporation, and markets. Related literature, research, and theory are reviewed.

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 S/U and letter 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. If topics vary, may be repeated in a semester to 8 hours, up to a maximum of 24 total hours.

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. May be repeated. Approved for S/U grading only.
ACES 100  **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 Standard 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. May be repeated to a maximum of 10 hours. (Summer Session) 0 to 3 undergraduate 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 15 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. Approved for both S/U and letter grading. (Summer session) 0 to 8 undergraduate hours. May be repeated to a maximum of 36 hours within one calendar year. Prerequisite: Consent of major department, college, and Study Abroad Office.
Advertising

Head of Department: Steve Helle
Department Office: 103 Gregory Hall, 810 South Wright, Urbana
Phone: 333-1602
www.comm.uiuc.edu/Advertising

ADV 199 Undergraduate Seminar credit: 1 TO 5 hours.
May be repeated up to 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: 2 OR 3 hours.
Special projects, research, and independent reading in advertising for students capable of individual work under the guidance of a faculty adviser. 2 or 3 undergraduate hours. May be repeated in the same or in multiple semesters, if topics vary. No graduate credit. Prerequisite: Written research proposal and consent of head 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. Prerequisite: ADV 300. 3 undergraduate hours. No graduate credit.

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. Prerequisite: ADV 300; and a specified course in statistical methods. 3 undergraduate hours. No graduate credit.

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 300. 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. Prerequisite: ADV 300. 3 undergraduate hours. No graduate credit.

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. Prerequisite: ADV 481. 3 undergraduate hours. No graduate credit.

**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 instructor.

**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.

**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 instructor.

**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 instructor.

**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 instructor.

**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: Michael B. Bragg
Department Office: 306 Talbot Laboratory, 104 South Wright Street, Urbana
Phone: 333-2651
www.aee.uiuc.edu

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

AE 201 Aerospace Systems Principles 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 Intro to Aerospace Dynamics 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 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 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 385, 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. Credit is not given for both AE 321 and TAM 251. Prerequisite: TAM 210 and MATH 385.

AE 322 Aerospace Structures II credit: 3 hours.

AE 352 Aerospace Dynamics 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 385.

AE 353 Aerospace Control Systems credit: 3 hours.
Modeling of linear dynamic systems; Laplace transform techniques; linear feedback control systems; stability criteria; design techniques. Prerequisite: AE 252, MATH 225 and MATH 385.

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: James Scholar in engineering; 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: James Scholar in engineering; 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 or consent of instructor.

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; or equivalents.

AE 407 Passive Spacecraft Control credit: 3 OR 4 hours.
Free molecule aerodynamics; gravity gradient and solar radiation torques on satellites; interaction of on-board magnetic dipoles with the earth's magnetic field; solar wind; cosmic dust and micrometeoroid torques; lifetime problem and density determination; and utilization of these various environmental effects in satellite attitude control. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 302 and AE 311.

AE 410 Computational Aerodynamics credit: 3 OR 4 hours.
Introduction of 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 or equivalent; or consent of instructor.

AE 412 Viscous Flow and 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, and TAM 438. 4 undergraduate hours. 4 graduate hours. Prerequisite: AE 311 or ME 310 or equivalent.

AE 413 Ideal Aerodynamics credit: 3 OR 4 hours.
Governing equations for incompressible flow; vorticity, circulation, and Kelvin's and Helmholtz's theorems; velocity potential and stream function; three-dimensional steady and nonsteady flows, d'Alembert's paradox, and apparent mass; two-dimensional steady flows, complex potential and velocity, and mapping of flows; two-dimensional airfoils and Joukowski transformation and airfoils; and thin airfoil theory. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 311 or equivalent; or consent of instructor.

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; and application of V/STOL aerodynamics. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 311 or equivalent; or consent of instructor.

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; and 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 Intro to Finite Element Anlys 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 TAM 427. See TAM 427.

AE 428 Mechanics of Composites credit: 3 hours.
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; and 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, propellants and their influence on design of rockets, internal ballistics, combustion processes, design of components, and flight performance. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: AE 312 or equivalent; AE 433.

AE 435  **Electric Propulsion**  credit: 3 OR 4 hours.
Elements of propulsion as applied to deep space missions; physics of ionized gases; plasmadynamics; electrothermal, electromagnetic, and electrostatic acceleration of gases to high velocity; high-impulse thruster design and performance; and the resistojet, arcjet, ion engine, MPD arc, 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. The principles of systems engineering, as they apply to the design process, are presented. A general design methodology is introduced. These concepts are then applied to the initial sizing of both aircraft and spacecraft systems. Involves intensive technical writing. Students must enroll in a two term sequence, AE 440 and AE 441. 3 undergraduate hours. No graduate credit. Prerequisite: Credit or concurrent registration in 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.
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. Students must enroll in a two term sequence, 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; and 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 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: CS 101, AE 311, AE 312, AE 321, and AE 322; or consent of instructor.

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; socioeconomics of wind power systems; performance of large and small scale wind turbines; and current design approaches. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: A fluids course, an electrical course, and a course in mechanics, all at the 200 level or higher; or consent of instructor.
AE 497  Independent Study  credit: 1 TO 4 hours.
Independent theoretical and experimental projects in aerospace engineering. Prerequisite: Senior standing in engineering; consent of instructor.

AE 498  Special Topics  credit: 1 TO 4 hours.
May be repeated in the same or separate semesters as topics vary to a maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: Senior standing in engineering; as specified for each topic offering, see Schedule or departmental course information.

AE 502  Advanced Orbital Mechanics  credit: 4 hours.
Circular restricted three body problem; surfaces of zero velocity, libration points, halo orbits; perturbed two body motion; Gauss and Lagrange planetary equations, Hamilton's principle, canonical equations and the Delaunay variables, application to artificial Earth satellites; orbit determination. Prerequisite: AE 402 or equivalent.

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 or equivalent.

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 or equivalent; or consent of instructor.

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, transonic testing. Prerequisite: ME 410 or equivalent; or consent of instructor.

AE 514  Boundary Layer Theory  credit: 4 hours.
Theories of the boundary layer of a compressible fluid and their solutions, laminar and turbulent; boundary layer in hypersonic flows. 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 517  Fundamentals of Gas Kinetics  credit: 4 hours.
Fundamental concepts required to study gas dynamic problems from the viewpoint of kinetic theory; derivation of the Boltzmann equation from classical mechanics; reduced and truncated distribution functions and the BBGKY hierarchy; molecular collisions; flux vectors and equations of change; moment equations; summational invariants; H-theorem and Maxwellian distribution; inclusion of the effect of solid surfaces in kinetic theory; existence theory for the Boltzmann equation; iteration procedures; moment methods; Chapman-Enskog procedure; and first and second approximations to the distribution function, heat flux vector, and stress tensor. Prerequisite: ME 410 and AE 412.

AE 518  Theory of Rarefied Gas Flow  credit: 4 hours.
Application of kinetic theory to rarefied gas flow problems; free-molecule flow; near free-molecule flow; linearized problems; and flows with appreciable deviation from equilibrium. Prerequisite: AE 517.

AE 525  Advanced Composite Materials  credit: 4 hours.
Advanced analysis of composite materials (extension of AE 428/TAM 428); 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: AE 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 ME 555 and TAM 526. Prerequisite: AE 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, 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: Consent of instructor.

AE 529  **Viscoelasticity Theory**  credit: 4 hours.
Fundamental concepts of viscoelasticity with applications: elastic-viscoelastic analogies, creep and relaxation functions, 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: Consent of instructor.

AE 538  **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; and supersonic burning. Same as ME 501. Prerequisite: AE 311 or ME 410.

AE 552  **Stochastic Structural Dynamics**  credit: 4 hours.
Structural dynamics problems treated from a probabilistic point of view; theory of probability and random processes introduced as mathematical tools; response of structures under random excitation is studied in order of increasing complexity; and probability of failure for such structures is discussed. Same as TAM 517. Prerequisite: AE 352 or TAM 412.

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-specifieds; algebraic and analytic constraints in scalar systems; uncertainty representation; Nyquist stability theory, small gain condition, 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 590  **Seminar**  credit: 0 hours.
Presentation by graduate students, staff, and guest lecturers of current topics in aerospace engineering. Approved S/U grading only. Prerequisite: Graduate standing in aerospace engineering.

AE 597  **Independent Study**  credit: 1 TO 4 hours.
Independent theoretical and experimental projects in aerospace engineering. Prerequisite: Graduate standing in engineering; consent of instructor.

AE 598  **Special Topics**  credit: 1 TO 4 hours.
Special topics in Aerospace Engineering. May be repeated in the same or separate terms as topics vary to a maximum of 12 hours. Prerequisite: Graduate standing in engineering; as specified for each topic offering, see Schedule or departmental course information.

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. May be repeated. Approved for S/U grading only. 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 221 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 221 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 Afro-American Studies**  credit: 3 hours.
Interdisciplinary introduction to the basic concepts and literature in the disciplines covered by Afro-American studies; surveys the major approaches to the study of Afro-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 S/U and letter 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.

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 S/U and letter 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 231  Lang Diff Dis: American Persp  credit: 3 hours.
Same as SHS 231. See 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:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

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 298  **Spec Topics African-Am Studies**  credit: 3 hours.
Seminar on selected topics with particular emphasis on current research trends. May be repeated up to a maximum of 6 Undergraduate 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 in U.S. Society**  credit: 3 hours.
The sociological study of African American men in the contemporary United States. Specifically, 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 344  **Soc Sci Persp Afro-Am Studies**  credit: 3 hours.
Focuses on unique aspects of Afro-American life through a review of social science perspectives. An interdisciplinary analysis of racial inequalities will emphasize trends in white and black racial attitudes and related social psychological issues. Critically reviews traditional Black American literature and compares it with Afro-centric perspectives Prerequisite: AFRO 100 or equivalent; or an introductory course in sociology, economics, anthropology, political science, or history; or consent of instructor
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

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 S/U and letter grading. Prerequisite: AFRO 100 and AFRO 101, 261, ENGL 260 or HIST 276.

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 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  **Afro-Diasporic Lit in 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:
UILC: US Minority Culture(s)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>AFRO 407</td>
<td>Slavery &amp; Race in Latin Am</td>
<td>2 TO 4 hours.</td>
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<tr>
<td></td>
<td>Same as HIST 407. See HIST 407.</td>
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<tr>
<td>AFRO 410</td>
<td>Hate Crimes</td>
<td>3 hours.</td>
</tr>
<tr>
<td>AFRO 411</td>
<td>African American Psychology</td>
<td>3 OR 4 hours.</td>
</tr>
<tr>
<td>AFRO 415</td>
<td>Africana Feminisms</td>
<td>3 OR 4 hours.</td>
</tr>
<tr>
<td>AFRO 421</td>
<td>Racial and Ethnic Families</td>
<td>2 hours.</td>
</tr>
<tr>
<td>AFRO 435</td>
<td>Commodifying Difference</td>
<td>3 OR 4 hours.</td>
</tr>
<tr>
<td>AFRO 453</td>
<td>Plantation Soc in Americas</td>
<td></td>
</tr>
<tr>
<td>AFRO 460</td>
<td>Slavery in the United States</td>
<td>3 OR 4 hours.</td>
</tr>
<tr>
<td>AFRO 466</td>
<td>Race &amp; Science</td>
<td>3 OR 4 hours.</td>
</tr>
<tr>
<td>AFRO 474</td>
<td>Black Freed Move, 1955-Present</td>
<td>3 OR 4 hours.</td>
</tr>
<tr>
<td>AFRO 476</td>
<td>The South in American History</td>
<td>2 TO 4 hours.</td>
</tr>
<tr>
<td>AFRO 490</td>
<td>Africana Theories</td>
<td>3 OR 4 hours.</td>
</tr>
</tbody>
</table>

This course satisfies the General Education Criteria for a:
UILC: Advanced Composition
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 Africana Methods**  
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 hours undergraduate only. 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 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 up to a maximum of 8 hours. Prerequisite: Graduate standing, AFRO 500 or equivalent or consent of instructor.
AFST 103  **Black Women in the Diaspora**  credit: 3 hours.
Same as AFRO 103 and GWS 103. See AFRO 103.

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 213  **African Oral Literature**  credit: 3 hours.
Examines the oral literature of the African continent in all its varieties (tales, myths, songs, proverbs, etc.) in translation. Places the literature in its many contexts (historical, cultural, religious, political, legal, sociological, etc.). Explores the process of oral transmission, unique to oral literature, with particular reference to the continuity between African and Afro-American oral literature. Same as ANTH 213, and CWL 213.

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
UIUC Social Sciences

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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFST 242</td>
<td>Elementary Wolof II</td>
<td>5 hours.</td>
<td>Same as WLOF 202. See WLOF 202.</td>
</tr>
<tr>
<td>AFST 243</td>
<td>Pan Africanism</td>
<td>3 hours.</td>
<td>Same as AFRO 243, PS 243, and SOC 267. See PS 243.</td>
</tr>
<tr>
<td>AFST 251</td>
<td>Elementary Zulu I</td>
<td>5 hours.</td>
<td>Same as ZULU 201. See ZULU 201.</td>
</tr>
<tr>
<td>AFST 252</td>
<td>Elementary Zulu II</td>
<td>5 hours.</td>
<td>Same as ZULU 202. See ZULU 202.</td>
</tr>
<tr>
<td>AFST 254</td>
<td>Economic Systems in Africa</td>
<td>3 hours.</td>
<td>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 ACE 254.</td>
</tr>
<tr>
<td>AFST 266</td>
<td>African Film and Society</td>
<td>3 hours.</td>
<td>Same as ANTH 266. See ANTH 266.</td>
</tr>
<tr>
<td>AFST 267</td>
<td>Memoirs of Africa</td>
<td>3 hours.</td>
<td>Same as ANTH 267. See ANTH 267.</td>
</tr>
<tr>
<td>AFST 403</td>
<td>Intermediate Bamana I</td>
<td>4 OR 5 hours.</td>
<td>Same as BMNA 403. See BMNA 403.</td>
</tr>
<tr>
<td>AFST 404</td>
<td>Intermediate Bamana II</td>
<td>4 OR 5 hours.</td>
<td>Same as BMNA 404. See BMNA 404.</td>
</tr>
<tr>
<td>AFST 405</td>
<td>Topics Swahili Lang &amp; Lit I</td>
<td>3 hours.</td>
<td>Same as SWAH 407. See SWAH 407.</td>
</tr>
<tr>
<td>AFST 406</td>
<td>Topics Swahili Lang &amp; Lit II</td>
<td>3 hours.</td>
<td>Same as SWAH 408. See SWAH 408.</td>
</tr>
<tr>
<td>AFST 407</td>
<td>Adv Topics Swahili Lang&amp;Lit I</td>
<td>3 OR 4 hours.</td>
<td>Same as SWAH 409. See SWAH 409.</td>
</tr>
<tr>
<td>AFST 408</td>
<td>Adv Topics Swahili Lang&amp;Lit II</td>
<td>3 OR 4 hours.</td>
<td>Same as SWAH 410. See SWAH 410.</td>
</tr>
<tr>
<td>AFST 410</td>
<td>Modern African Fiction</td>
<td>3 OR 4 hours.</td>
<td>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.</td>
</tr>
<tr>
<td>AFST 412</td>
<td>Lang in African Culture &amp; Soc</td>
<td>3 OR 4 hours.</td>
<td>Same as LING 412. See LING 412.</td>
</tr>
<tr>
<td>AFST 413</td>
<td>Intermediate Lingala I</td>
<td>4 OR 5 hours.</td>
<td>Same as ZULU 201. See ZULU 201.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Options</td>
<td>Notes</td>
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<tr>
<td>AFST 414</td>
<td>Intermediate Lingala II</td>
<td>4 OR 5 hours</td>
<td>Same as LGLA 403. See LGLA 403.</td>
</tr>
<tr>
<td>AFST 415</td>
<td>Advanced Lingala I</td>
<td>3 hours</td>
<td>Same as LGLA 405. See LGLA 405.</td>
</tr>
<tr>
<td>AFST 416</td>
<td>Advanced Lingala II</td>
<td>3 hours</td>
<td>Same as LGLA 406. See LGLA 406.</td>
</tr>
<tr>
<td>AFST 417</td>
<td>Topics Lingala Lang &amp; Lit I</td>
<td>3 hours</td>
<td>Same as LGLA 407. See LGLA 407.</td>
</tr>
<tr>
<td>AFST 418</td>
<td>Topics Lingala Lang &amp; Lit II</td>
<td>3 hours</td>
<td>Same as LGLA 408. See LGLA 408.</td>
</tr>
<tr>
<td>AFST 420</td>
<td>Africana Feminisms</td>
<td>3 OR 4 hours</td>
<td>Same as AFRO 415 and GWS 415. See AFRO 415.</td>
</tr>
<tr>
<td>AFST 425</td>
<td>Southern Africa Race &amp; Power</td>
<td>3 OR 4 hours</td>
<td>Same as HIST 412. See HIST 412.</td>
</tr>
<tr>
<td>AFST 433</td>
<td>Intermediate Swahili I</td>
<td>4 OR 5 hours</td>
<td>Same as SWAH 403. See SWAH 403.</td>
</tr>
<tr>
<td>AFST 434</td>
<td>Intermediate Swahili II</td>
<td>4 OR 5 hours</td>
<td>Same as SWAH 404. See SWAH 404.</td>
</tr>
<tr>
<td>AFST 435</td>
<td>Advanced Swahili I</td>
<td>3 hours</td>
<td>Same as SWAH 405. See SWAH 405.</td>
</tr>
<tr>
<td>AFST 436</td>
<td>Advanced Swahili II</td>
<td>3 hours</td>
<td>Same as SWAH 406. See SWAH 406.</td>
</tr>
<tr>
<td>AFST 437</td>
<td>Egypt Since World War I</td>
<td>2 TO 4 hours</td>
<td>Same as HIST 438. See HIST 438.</td>
</tr>
<tr>
<td>AFST 443</td>
<td>Intermediate Wolof I</td>
<td>4 OR 5 hours</td>
<td>Same as WLOF 403. See WLOF 403.</td>
</tr>
<tr>
<td>AFST 444</td>
<td>Intermediate Wolof II</td>
<td>4 OR 5 hours</td>
<td>Same as WLOF 404. See WLOF 404.</td>
</tr>
<tr>
<td>AFST 445</td>
<td>Advanced Wolof I</td>
<td>3 hours</td>
<td>Same as WLOF 405. See WLOF 405.</td>
</tr>
<tr>
<td>AFST 446</td>
<td>Advanced Wolof II</td>
<td>3 hours</td>
<td>Same as WLOF 406. See WLOF 406.</td>
</tr>
<tr>
<td>AFST 447</td>
<td>Topics Wolof Lang &amp; Lit I</td>
<td>3 hours</td>
<td>Same as WLOF 407. See WLOF 407.</td>
</tr>
<tr>
<td>AFST 448</td>
<td>Topics Wolof Lang &amp; Lit II</td>
<td>3 hours</td>
<td>Same as WLOF 408. See WLOF 408.</td>
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<tr>
<td>AFST 451</td>
<td>Intermediate Zulu I</td>
<td>4 OR 5 hours</td>
<td>Same as ZULU 403. See ZULU 403.</td>
</tr>
<tr>
<td>AFST 452</td>
<td>Intermediate Zulu II</td>
<td>4 OR 5 hours</td>
<td>Same as ZULU 404. See ZULU 404.</td>
</tr>
<tr>
<td>AFST 467</td>
<td>Kinship-Culture-Power-Africa</td>
<td>2 OR 4 hours</td>
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</tr>
</tbody>
</table>
AFST 469  **Structure of Semitic Languages**  credit: 3 OR 4 hours.
Same as ANTH 469. See ANTH 469.

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

**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.

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. May be repeated in the same or subsequent terms to a maximum of 10 hours. Approved for S/U grading only. Prerequisite: Sophomore standing.

**AGCM 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 subsequent terms to a maximum of 10 hours. Approved for S/U grading only. 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.

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 380  Leadership Development  credit: 3 hours.
Examines leadership theory, styles and roles of leaders; includes exercises and activities to improve functional leadership skill, as adapted to career interests of the individual class member.

AGCM 390  Prof Dev in Ag and Env Comm  credit: 1 hours.
Professional developments and issues in agricultural communications; the agricultural communicator today; and avenues for continuing professional growth. Approved for both letter and S/U grading. Prerequisite: Junior-senior 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 3 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

AGED 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
An experimental course on a special topic in agricultural education. May be repeated in the same or separate terms as topics vary, to a maximum of 12 hours.

AGED 220  Principles of Ag Education  credit: 3 hours.
Introduction to agricultural education programs and delivery systems; state and federal policies; the nature of teaching in school and non-school settings; types and purposes of agricultural education; program components; approaches to teaching; teacher characteristics; community relationships; educational change and innovation; trends and developments in agricultural education; and reflective teaching.

AGED 250  Observation and Program Analyss  credit: 2 hours.
Early field experience in agricultural education, including observation and analysis activities in public schools, extension programs, or other selected settings; participation in clinical field experience activities; examination of educational program development and operation, teaching and learning processes, contextual factors in learning, evaluation of student learning; and professionalism. Approximately 45 hours of early field experience will be acquired. Off-campus observation begins the first week of January. Agricultural education programs in both school and non-school settings are examined. Prerequisite: AGED 220.

AGED 260  Intro to Leadership Studies  credit: 3 hours.
Study of leadership theories and their application to the development of leadership skills. Students develop a personal philosophy of leadership, prepare a development plan for enhancing leadership skills, and begin a portfolio to record their leadership growth. Explores topics concerning diversity, ethics, and leadership/follower roles.

AGED 293  Ag Leadership Internship  credit: 1 TO 4 hours.
Supervised, off-campus experience in a field directly pertaining to subject matter in agricultural education. May be repeated in the same or subsequent terms to a maximum of 10 hours.

AGED 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.

AGED 350  Early Field Experience  credit: 2 hours.
Supervised experience during the summer months and fall semester including: supervision of students' agricultural experience programs and projects; development of problem-solving and decision-making skills related to use of instructional technologies, management of FFA activities, and supervision of agricultural experiences; review of teacher certification requirements and application for teacher certification; development of online teacher certification portfolio meeting state, UIUC, and program requirements. A minimum of 50 hours or early field observation is required. Prerequisite: AGED 150 and concurrent registration in AGED 250.

AGED 360  Integrating Leadership  credit: 3 hours.
Capstone academic experience for students to study the practice of leadership in personal, team, organizational and community contexts. Emphasis is placed on transitional development of leadership skills including mentoring, networking, and developing leadership skill in others. Prerequisite: AGED 260.

AGED 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.

AGED 398  Undergraduate Seminar  credit: 1 TO 3 hours.
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 3 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.

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 to a maximum of 8 hours.
American Indian Studies

American Indian Studies
Director of Program: Wanda Pillow
Native American House: 1206 West Nevada, Urbana
Phone: 265-9870
www.nah.uiuc.edu

AIS 157  The Archaeology of Illinois  credit: 3 hours.
Same as ANTH 157. See ANTH 157.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect

AIS 165  North American Indians  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 up to a maximum of 6 hours.

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.
Same as HIST 278. See HIST 278.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

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 449  North American Archeology  credit: 3 OR 4 hours.
Same as ANTH 449. See ANTH 449.

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

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.
Applied Life Studies Courses

Applied Life Studies
Dean and Program Administrator: Tanya Gallagher
College Office: 108 Huff Hall, 1206 S. Fourth, Champaign
Phone: 333-2131
www.als.uiuc.edu

ALS 292   ALS 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. Prerequisite: One year or residence
at UIUC and consent of major department and the college. May be repeated to a maximum of 44 hours. This course is approved for
Honors and S/U letter grading only.
Animal Sciences

Animal Sciences
Head of Department: Neal R. Merchen
Department Office: 116 Animal Sciences Laboratory, 1207 West Gregory, Urbana
Phone: 333-3462
www.ansci.uiuc.edu

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 107  Agr Cons and Env Systems  credit: 2 hours.
Same as ACE 107. See ACE 107.

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 Management  credit: 3 hours.
Care and management of companion animals, emphasizing the dog and cat. Subject matter includes such topics as domestication and development of breeds, reproduction and genetics, principles of behavior and training, major infectious diseases, and nutrition and feeding management. Intended for students interested in professional careers with companion animals. Prerequisite: Sophomore standing; ANSC 100 or IB 104 or equivalent.

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 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 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 S/U and letter 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. Same as IB 311. 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 321 or equivalent.

**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 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 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. Current 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 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 biochemicalism 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: CPSC 352 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 220, and MATH 220 or MATH 294; or consent of instructor.

**ANSC 447  Quantitative Genetics**  credit: 3 OR 4 hours.
Mathematical theory of the genetics of quantitative traits: properties of random-mating populations; estimation of repeatability, heritability, and genetic correlation; genetic results of selection; selection methods; correlated response; and selection for more than one trait. Application to animals and plants. Students desiring 4 hours credit do additional work in some area of quantitative genetics. Same as IB 417. Prerequisite: ANSC 446; and credit or concurrent registration in ANSC 445, or CPSC 540; 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 510.

**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 or 4 graduate hours. Prerequisite: ANSC 362 and 321; ANSC 350 or MCB 350; 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 2  credit: 1 hours.
Same as VCM 656. See VCM 656.

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 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 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 hours.
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, MCB 413, MCB 350, or equivalent.

ANSC 532  Adv Reproductive Physiology  credit: 3 hours.
Comparative physiology of production of domestic and laboratory animals, including gametogenesis, fertilization, embryonic development, and factors influencing reproduction. Same as VB 532. Prerequisite: ANSC 431 and MCB 350; or equivalent.

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  Applied Statistical Meths III  credit: 4 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. Approved for both S/U and letter 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 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. 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 S/U and letter grading. May be repeated to a maximum of 4 hours. Prerequisite: Consent of instructor.

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

Anthropology
Head of Department: Paul Garber
Department Office: 109 Davenport Hall, 607 South Mathews, Urbana
Phone: 333-3616
www.anthro.uiuc.edu/Department

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

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 112  Symbols in Anthropology  credit: 3 hours.
Introduction to the principles and methods of symbolic anthropology including the role that symbols play in society, and how symbolic meanings are derived and changed. Applications to contemporary American culture, focusing on the University of Illinois as an institution and a community, are developed in the course.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ANTH 130  Civilization of India  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. Same as AIS 157.
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 Social Sciences
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  North American Indians  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 188  Ethnic Wars and Globalization**  credit: 3 hours.
Introduces the core concepts of social and cultural anthropology through intensive examination of ethnic conflict in a variety of world areas. Case studies demonstrate the importance of understanding kinship and social networks, the making of nation states, and globalizing processes in today's conflicts. Same as GLBL 188.

**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.
Same as HDFS 220. See HDFS 220.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

ANTH 213  African Oral Literature  credit: 3 hours.
Same as AFST 213, and CWL 213. See AFST 213.

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

ANTH 222  Introduction to Modern Africa  credit: 3 hours.
Same as AFST 222, PS 242, and SOC 222. See AFST 222.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

ANTH 223  African Arch & Urbanism  credit: 3 hours.
Same as LA 220. See LA 220.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Hist&Philosoph Perspect

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

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. Same as IB 243. 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 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&Philos 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 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 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 281 Chinese Culture and Society credit: 3 hours.
Comprehensive introduction to Chinese culture and society based on ethnographic studies, theoretical analysis and historical survey. Topics cover crucial issues concerning China’s past, present and future, with an emphasis on conditions in the last two decades of the 20th century. Same as EALC 281.

**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. Approved for both S/U and letter grading. Same as HIST 288 and AIS 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

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

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  Cross Cultural Psych  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, IB 454, 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, HIST 434, 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 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. 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. 3 Undergraduate Hours. 4 Graduate Hours.

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 429  Philosophy of Social Science  credit: 3 OR 4 hours.
Same as PHIL 475, and SOC 455. See PHIL 475.

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
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 439  Anth Theory as Science  credit: 3 OR 4 hours.
Exploration of current theory in social and cultural anthropology, with emphasis on examining theories in the light of contemporary ideas about theoretical adequacy and of the historical development of anthropological thought; designed especially for anthropology majors and anthropology graduate students. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 230 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 humans Same 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 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. Same as AIS 449. 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 ofolithics 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 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. 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 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 ethnography 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 COMM 470, and LING 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 474  Archaeology Imagery & Symbol  credit: 3 OR 4 hours.
Comparative analysis of the iconographic (symbolic) content of elite art and architecture of pre columbian 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 478 Adv Methods in Archaeology credit: 4 hours.
Examines advanced, computer-assisted methods for the analysis of archaeological data. Covers database design basics, seriation, correspondence analysis, discriminant analysis, cluster analysis, archaeological stratigraphy, assemblage diversity analyses, and the analysis and interpretation of radiocarbon dates. Applies these methods in the analysis and interpretation of archaeological data using the Bonn Archaeological Statistics Package and the MYSTAT and SYSTAT statistical packages. Prerequisite: ANTH 412 or equivalent.

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 482 Peoples of Amazonia credit: 3 OR 4 hours.
Develops cross-cultural understanding of contemporary native peoples around the rim of and within Amazonia; examines culture history, history, and ecology prior to study of selected cases; deals with adaptive versatility of contemporary native peoples as well as with radical change. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 103, ANTH 182, ANTH 230, or consent of instructor.

ANTH 483 Contemporary Japan credit: 3 OR 4 hours.
The lifecourse and the growth of the self in modern Japanese civilization Same as EALC 483. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ANTH 230 or a course in East Asian history, 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 485 Family and Gender in China credit: 3 OR 4 hours.
Explores the interworking of family system, gender dynamic and demographic process in response to socioeconomic and political changes in contemporary China. Urban-rural differentiation and regional and ethnic diversities will be examined. Same as EALC 485. 3 undergraduate hours. 4 graduate hours. Prerequisite: ANTH 230 or equivalent; ANTH 281.

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 500  **Intro to General Linguistics**  credit: 4 hours.

Same as EIL 520, and LING 500. See LING 500.

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. 4 graduate hours.

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 permission 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. 4 graduate hours. 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. May be repeated for up to 8 hours per semester.

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 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 550  **Cultural Theory**  credit: 4 hours.
History of modern ethnological thought. Focusing on social and cultural anthropological theories, it takes a topical approach to theoretical problems and emphasizes the development of analytical skills. Prerequisite: Graduate standing.

ANTH 552  **Res Prob in Archaeology**  credit: 4 hours.
Seminar 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 chieftums, 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.
Critical review of the major theoretical perspectives of human biological and cultural evolution; examines the historical bases of these
perspectives and their influence on contemporary theories and interpretations. Prerequisite: Graduate standing in the Department of
Anthropology or consent of instructor.

ANTH 560  **Anthropology and Law**  credit: 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. 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
corporality. Prerequisite: ANTH 461 or 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 564  **Museum Theory and Practice**  credit: 4 hours.
Course uses campus museums to introduce students to research on collections, conservation, collections management, exhibit design
and installation, public relations, and planning educational programs. Emphasis varies from year to year. Students participate in current
research projects at the museums. Same as LA 572. May be repeated to a maximum of 8 hours. Prerequisite: ANTH 314 and ANTH
315 or consent of instructor.

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 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 OR 5 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. Participation in the language laboratory is required. 5 undergraduate hours. 4 graduate hours. Prerequisite: ARAB 202.

ARAB 404 Intermediate Stand Arabic II credit: 4 OR 5 hours.
Continuation of ARAB 403. Participation in the language laboratory is required. 5 undergraduate hours. 4 graduate hours. 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
Interim Director: Michael J. Andrejasich
School Office: 117 Temple Buell Hall, 611 Taft Drive, Champaign
Phone: 333-1330, (G)244-4384 (U)333-7720
www.arch.uiuc.edu

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 171  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.

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 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 232  Construction of Buildings  credit: 4 hours.
Second course in building science and technology with emphases on the process of project execution from the initiation of design to the completion of construction. Includes comprehensive study of the construction of buildings and their systems, materials and methods, and their implications on building sustainability and design decision-making. Prerequisite: ARCH 231 or consent of instructor.

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.

**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.

**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.

**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 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 3 hours.
For candidates for honors in architecture. Independent guided study and research in a selected area of architecture. 3 undergraduate hours. No graduate credit. (Summer session, 1 to 3 undergraduate hours). 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: 0 TO 4 hours.
Independent guided study and investigation in a selected area of architecture. 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 409 Great Modern Architects** credit: 3 hours.
Seminar on selected topics addressing the philosophy, theory, personality, and work of significant architects since the mid-nineteenth century. Prerequisite: ARCH 210

**ARCH 410 Ancient Architecture** credit: 3 hours.
Architecture and urban design in ancient Egypt, Greece, and Rome. Prerequisite: ARCH 210, ARTH 111, or consent of instructor.

**ARCH 411 Early Byzantine Arch** credit: 3 hours.
ARCH and urban design of the early Christian era, the Byzantine Empire, southeastern European lands under Byzantine cultural influence, and medieval Russia; from circa 300 to circa 1500. Prerequisite: ARCH 210, ARTH 111, or consent of instructor.

**ARCH 412 Medieval Architecture** credit: 3 hours.
The development of Romanesque and Gothic architecture and urban design. Prerequisite: ARCH 210, ARTH 111, or consent of instructor.

**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: Junior standing or consent of instructor.

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 design sustainable of buildings and landscapes, including concepts that form the core of the U.S Green Building Council rating system (LEED). Introduction to LEED accreditation.

ARCH 498  Directed Research in Arch  credit: 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. Students may register in different sections of this course 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. 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  **Sem in Ancient & Medieval Arch**  credit: 4 hours.
Seminar on topics in ancient, early Christian, Byzantine, and Medieval Architecture. Prerequisite: ARCH 410, ARCH 411, or 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 515  **Arch Hist of Amer Communities**  credit: 2 OR 4 hours.
Advanced historic study of the architectural design and aesthetics of individual buildings and their relationship to each other in selected small-scale American communities. Prerequisite: ARCH 416 or equivalent, and consent of instructor.

ARCH 517  **Develop of Cont Arch Thought**  credit: 4 hours.
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.

ARCH 518  **Recording Historic Buildings**  credit: 3 hours.
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.

ARCH 519  **Conserv of Building Materials**  credit: 3 OR 4 hours.
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.

ARCH 530  **Management in Architecture**  credit: 4 hours.
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.

ARCH 534  **Building Economics**  credit: 4 hours.
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.

ARCH 538  **Econ Issues in Arch Develop**  credit: 4 OR 6 hours.
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.

ARCH 544  Bldg Sys & Design Integration  credit: 3 OR 4 hours.
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 or consent of instructor.

ARCH 545  Design & Constructability  credit: 3 OR 4 hours.
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.

ARCH 546  Programming & Concept Studio  credit: 6 hours.
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. This course may not be repeated for credit. Prerequisite: Graduate standing in Architecture and consent of instructor.

ARCH 547  Architectural Practice Studio  credit: 8 hours.
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.

ARCH 548  Const Execution & Admin  credit: 4 hours.
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  Foundation Engineering  credit: 4 hours.
Soil mechanics and site exploration; design of spread footings, combined footings, piles, and caissons; and foundation walls and retaining walls in reinforced concrete. Prerequisite: ARCH 551 or consent of instructor.

ARCH 553  Adv Reinforced Concrete Design  credit: 4 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: 4 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: 4 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 557  **Soil Mechanics**  credit: 4 hours.
Classification of soils; hydraulic properties and flow of water; strength and deformation properties; consolidation of soil and settlement analysis; soil exploration; bearing capacity of soils; lateral earth pressure theory; introduction to foundations. Prerequisite: ARCH 452.

ARCH 558  **Structural Wood Design**  credit: 4 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: 4 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: 4 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 OR 4 hours.
Review of principles of architectural design; factors in programming architectural requirements; design development; and evaluation and criticism. Prerequisite: ARCH 572 or 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 588 Urban Design Seminar credit: 3 TO 4 hours.
Analysis and criticism of urban development projects; individual reports and discussions. Prerequisite: ARCH 572, UP 426, or consent of instructor

ARCH 591 Spec Prob Arch Hist & Pres credit: 2 TO 12 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 to a maximum of 12 hours. Prerequisite: Twelve hours of architectural history or consent of instructor.

ARCH 593 Spec Prob Arch Practice & Mgt credit: 1 TO 12 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: 1 TO 12 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 12 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: 3 TO 6 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: ARCH 572 or consent of instructor

ARCH 597 Spec Prob Arch Design credit: 3 TO 12 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: ARCH 572 or consent of instructor

ARCH 599 Thesis Research credit: 0 TO 16 hours.
May be repeated to a maximum of 16 hours. Approved for S/U grading only. Prerequisite: Consent of instructor and graduate program coordinator.
Art

ART 101  Introduction to Studio Arts  credit: 3 hours.
Introductory studio experiences with a variety of art materials and techniques accompanied by visitations 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 103  Watercolor Painting  credit: 3 hours.
Basic watercolor class that includes an introduction to the tools, materials, and techniques of the medium; landscape, still life, and figure experiences. May be repeated to a maximum of 6 hours. Not open to students majoring in art and design.

ART 104  Introduction to Oil Painting  credit: 3 hours.
Elementary oil and acrylic painting and sketches from still life and landscape; includes basics such as stretching canvas, preparing surfaces, and varied painting techniques. May be repeated to a maximum of 6 hours. Not open to students majoring in art and design.

ART 108  Ikebana: Japanese Flower  credit: 2 hours.
Introduces Japanese arts and cultural heritage through Ikebana (Japanese flower arranging).

ART 109  Sumi-E: Japanese Painting  credit: 2 hours.
Introduction to the ancient abstract Chinese art of black-ink painting; through the study and practice of Chinese and Japanese Sumi-E students discover the foundation of twentieth-century visual arts and discuss the philosophy of Chinese and Japanese art.

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. 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 art majors. Prerequisite: ART 140.

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. Prerequisite: ART 140.

ART 209  Tea Ceremony and Zen  credit: 2 hours.
The tea ceremony and culinary arts of Japan practiced as the physical discipline necessary for Zen aesthetic experience. May be repeated to a maximum of 4 hours.

ART 250  Writing with Video  credit: 3 hours.
Students will engage in structuring creative, analytic, and argumentative essays with video. They will adapt the basic, traditional principles of critical writing and analysis, to communicate effectively using image production and post-production. Furthermore, students
will make use of alphabetical literacy to evaluate their own video essays and the media work of others. Prerequisite: Any Composition I course.

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 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 210  **Visual Organization**  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.
Studies the history of design from 1850 to present, exploring design as the visible manifestation of complex cultural forces. Gives attention to major historical movements as well as to the emergence of contemporary design. Prerequisite: Enrollment in Graphic Design or Industrial Design or consent of instructor.

ARTD 212  **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  **Image Making, I**  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. Graphic Design majors only. Prerequisite: ARTD 210, concurrent registration in ARTD 212.

ARTD 220  **Design Workshop I**  credit: 3 hours.
Design issues affecting contemporary culture and aesthetic perceptions. Prerequisite: Sophomore standing in Industrial Design.

ARTD 221  **Model Making, I**  credit: 3 hours.
Links practical experience of model-making with basic instruction in machines. Focuses on model-making and prototype construction and exploring the materials and techniques of soft model-making and methods of finishing and surface effects on wood, metals, and plastics. Prerequisite: Sophomore standing in Industrial Design or consent of instructor.

ARTD 222  **Design Workshop, II**  credit: 3 hours.
Bionics, value adding, human factors, as they affect contemporary culture and design movements. Prerequisite: ARTD 220.

ARTD 223  **Model Making, II**  credit: 3 hours.
Focuses on model-making techniques and methods of machining and finishing applications primarily in metals and plastics. Prerequisite: Sophomore standing in Industrial Design; ARTD 221 or consent of instructor.

ARTD 225  **Design Drawing**  credit: 3 hours.
Introduction to technical drawing skills as applied to orthographic, pictorial and perspective concepts. Three-dimensional visualization will be emphasized. Additional Class Materials Fee required.

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 310  **Advanced Typography**  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  **Methodology**  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 312  Production  credit: 3 hours.
Basic information and current methods in the production of multiple printed communications, including printing processes, papermaking,
binding and other practices, and the preparation of art work for the various methods of reproduction; field trips required. Prerequisite:
ARTD 210 and ARTD 212 or consent of instructor; concurrent registration in ARTD 310 or ARTD 311 by students in Graphic Design.

ARTD 313  Sequential Design  credit: 3 hours.
Introduces and explores the structure and manipulation of time and space as a context for visual communication, with emphasis
on design using type, image, sound, and motion with computer-based hypermedia. May be repeated to a maximum of 9 hours.
Prerequisite: Senior standing in graphic design or consent of instructor

ARTD 314  Image Making, II  credit: 3 hours.
Explores the applications of computer technology in the visual communication process with manipulation of digitized and computer-
generated images. Graphic Design majors only. Prerequisite: ARTS 260; concurrent registration in ARTD 310.

ARTD 320  Industrial Design, I  credit: 3 hours.
Designing of objects for manufacture by the machine industries. Field trip required. Prerequisite: Junior standing in Industrial Design
curriculum or consent of department.

ARTD 321  Drawing and Rendering  credit: 2 hours.
Perspective drawing using color pastels, markers, and other media with emphasis on quick delineation. May be repeated to a maximum
of 4 hours. Prerequisite: Concurrent registration in ARTD 320, ARTD 324, ARTD 420, or ARTD 422; or consent of instructor.

ARTD 322  Materials and Processes, I  credit: 2 hours.
Provides an introduction to materials and processes use in industrial design. Prerequisite: Sophomore standing in Industrial Design or
consent of instructor. Additional Facilities Charge of $20 required.

ARTD 324  Industrial Design, II  credit: 3 hours.
Continuation of ARTD 320. Field trip required. Prerequisite: ARTD 320.

ARTD 325  Materials and Processes, II  credit: 3 hours.
Continuation of ARTD 322 Prerequisite: ARTD 322

ARTD 327  Design Methods  credit: 2 hours.
Includes moderns of the designer, design methods and design process. Emphasis will be on cross-disciplinary research in methodology
and integration into Industrial Design. Prerequisite: Junior standing in Industrial Design and 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 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 412  Computer Visualization I  credit: 3 OR 4 hours.
Exploration and problem solving in visual communication using contemporary software tools and imaging facilities. 3 undergraduate
hours. 4 graduate hours. Prerequisite: A 100- level course in graphic design or in industrial design or equivalent; or a 100-level
computer science course; or consent of instructor.

ARTD 413  Computer Visualization II  credit: 3 OR 4 hours.
Continuation of ARTD 412 3 undergraduate hours. 4 graduate hours. Prerequisite: ARTD 412

ARTD 414  Advanced Industrial Design, I  credit: 4 hours.
4 undergraduate hours. No graduate credit. Prerequisite: ARTD 324.

ARTD 421  Professional Practices  credit: 2 hours.
Focuses on the preparation of a design portfolio and resume; examines operations of professional design offices; and includes presentations and discussions by visiting designers. 2 undergraduate hours.

**ARTD 422  Advanced Industrial Design, II**  credit: 4 hours.
4 undergraduate hours. No graduate credit. Prerequisite: ARTD 420. Additional Class Materials Fee ($20) and Facilities Charge ($95) Required.

**ARTD 423  Computer Applications I**  credit: 3 hours.
Concepts, methods, and current applications of computer-aided industrial design (C.A.I.D.) will be studied, using autocad and other software. Prerequisite: Junior standing in Industrial Design or consent of instructor.

**ARTD 426  Computer Applications II**  credit: 2 OR 4 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.

**ARTD 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 Industrial Design, a cumulative grade point average of 3.0; and consent of instructor, advisor, and associate director of the School.

**ARTD 521  Industrial Design, I**  credit: 6 hours.
Introductory graduate-level course emphasizes 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 522  Industrial Design, II**  credit: 6 hours.
Second term of the introductory level year of the Industrial Design MFA degree program. Prerequisite: ARTD 521.

**ARTD 523  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. Prerequisite: ARTD 522.

**ARTD 524  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. Prerequisite: ARTD 523.

**ARTD 525  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 accompanied by a comprehensive written statement. Prerequisite: ARTD 524.

**ARTD 526  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 statement. Prerequisite: ARTD 525.

**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. May be repeated to a maximum of 4 hours. Approved for S/U grading only. Prerequisite: Graduate study in Industrial Design.
Art--Education

Art and Design, School of
Director: David Weightman
School Office: 143 Art and Design Building, 408 East Peabody, Champaign
Phone: 333-0855
www.art.uiuc.edu

ARTE 201  Art Education Laboratory  credit: 2 hours.
Examines methods and studio activities for elementary and secondary schools with a variety of appropriate materials and processes; includes techniques, art activities and practical application for teaching exceptional students, including learning disabled. Must be repeated for a total of 4 hours.

ARTE 203  Practicum in Teaching Art  credit: 4 hours.
Supervised teaching of art to children augmented by a seminar; includes classroom preparation and evaluation. Prerequisite: Consent of instructor.

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; 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 201 and ARTE 301; concurrent registration in EDPR 438 and EDPR 442, art education sections only.

ARTE 402  Artistic Development  credit: 3 OR 4 hours.
Historical and contemporary perspectives on children's artistic development, emphasizing relationships between general intellectual growth and the ability to create and respond to works of art. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing, and PSYC 100 and EPSY 201

ARTE 403  Expressive Arts and Design  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 up to 1 time(s). Prerequisite: Senior or graduate standing.

ARTE 490  Senior Honors  credit: 2 TO 5 hours.
Independent guided research and study for honors. May be repeated to a maximum of 5 hours. 2 to 5 undergraduate hours. No graduate credit. 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.
Study of fundamental issues affecting education in the visual arts; examines and explores the educational implications of the nature and value of art, the nature of the artist, and the development of the child as an artist and connoisseur. 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 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. May be repeated. Approved for S/U grading only. Prerequisite: Graduate standing in art education
ARTF 101  **Contemporary Issues in Art**  credit: 2 hours.
Exposes the first year student in an interactive lecture/discussion format to contemporary issues 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 the elements of drawing. This course is open to Art and Design majors only.

ARTF 103  **Design, I**  credit: 3 hours.
Theory and practice in the elements of two dimensional design and the study of color. This course is open to Art and Design Majors only.

ARTF 104  **Drawing, II**  credit: 3 hours.
Continuation of ARTF 102. Theory and practice in the elements of drawing. This course is open to Art and Design majors only. Prerequisite: ARTF 102.

ARTF 105  **Design, II**  credit: 3 hours.
Theory and practice in the elements of three dimensional design. This course is open to Art and Design majors only. 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 and 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.

**ARTH 112  Renaissance and 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. Course may not be repeated for credit.

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. Course may not be repeated for credit. 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: 3 OR 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: Literature and the Arts
UIUC: Non-Western Cultures
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 216  Roman Art  credit: 3 hours.**
Survey of architecture, sculpture, and painting of the Roman world from republican times to the age of Constantine, with brief treatment of later Roman art leading to Byzantine. Same as CLCV 218.

**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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit: 3 hours.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 222</td>
<td>Medieval Art</td>
<td>The arts of Byzantium and Western Europe from the early Christian era to the Renaissance. Same as MDVL 222.</td>
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<tr>
<td>ARTH 230</td>
<td>Italian Renaissance Art</td>
<td>Architecture, painting, and sculpture of Italy during the Renaissance.</td>
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<tr>
<td>ARTH 231</td>
<td>Northern Renaissance Art</td>
<td>Architecture, painting, sculpture, and minor arts of Europe outside Italy in the fifteenth and sixteenth centuries. Same as MDVL 231.</td>
</tr>
<tr>
<td>ARTH 235</td>
<td>Baroque Art</td>
<td>Studies European painting, sculpture, and graphic work during the period 1580 to 1700 with emphasis on major masters such as Bernini, Caravaggio, Poussin, Rembrandt, and Velazquez.</td>
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<tr>
<td>ARTH 240</td>
<td>Art of the Nineteenth Century</td>
<td>Architecture, painting, sculpture, and minor arts of France, Germany, Spain, and England in the nineteenth century.</td>
</tr>
<tr>
<td>ARTH 241</td>
<td>Twentieth-Century European Art</td>
<td>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</td>
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<tr>
<td>ARTH 250</td>
<td>American Art</td>
<td>Surveys American art and architecture from the colonial period to the present.</td>
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<tr>
<td>ARTH 257</td>
<td>History of Photography</td>
<td>Examines a history of photography from its origin to the present, including both documentary and artistic approaches; considers relationships with other arts.</td>
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<td>ARTH 310</td>
<td>African Art and Society I</td>
<td>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.</td>
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<tr>
<td>ARTH 311</td>
<td>African Art and Society II</td>
<td>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.</td>
</tr>
<tr>
<td>ARTH 322</td>
<td>Byzantine Art</td>
<td>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.</td>
</tr>
<tr>
<td>ARTH 348</td>
<td>Spanish Art 1890-Present</td>
<td>Introduces the major artists, movements, and institutions of Spanish modern and contemporary art, including Gaudi, Dali, Miro and Picasso, in their national cultural context.</td>
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<tr>
<td>ARTH 350</td>
<td>American Art 1750-1900</td>
<td>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.</td>
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<tr>
<td>ARTH 351</td>
<td>Early American Modernism</td>
<td>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.</td>
</tr>
<tr>
<td>ARTH 352</td>
<td>Art, Propaganda, and War</td>
<td>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</td>
</tr>
<tr>
<td>ARTH 360</td>
<td>Women and the Visual Arts</td>
<td>credit: 3 hours.</td>
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</table>
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. Course may not be repeated for credit.

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 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. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Junior standing or consent of instructor. Same as MDVL 421.

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. 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. 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 major masters of 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 treatments 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 444  
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 Mondernismo and the advent of Pablo Picasso. Previous introductory level art history course recommended. 3 undergraduate hours. 3 or 4 graduate hours.

ARTH 445  
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 446  
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 447  
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 458  **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 489  **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 490  **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 491  **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 495  **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. Prerequisite: ARTH 395. This course may be repeated up to a maximum of 6 undergraduate hours. 3 Undergraduate hours only.

**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 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 Class 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  **Studies 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 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 599  Thesis Research**  credit: 0 TO 16 hours.
Guidance in research and writing theses for advanced degrees. May be repeated. Approved for S/U grading only. 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. In addition to the required materials charge, there is an additional Facilities Charge of $25. Prerequisite: Sophomore standing in Art and Design.

ARTS 210  **Ceramics, I**  credit: 3 hours.
Introduction to materials and techniques involved in the ceramic process. By achieving technical expertise in clay, students can begin to develop a personal artistic language employing clay as an art medium. Students will explore a variety of assignments employing the potter's wheel and hand-building techniques, as well as investigating various firing processes. Prerequisite: Sophomore standing or consent of instructor.

ARTS 211  **Ceramics, II**  credit: 3 hours.
Investigation and refinement of skills involved in ceramic processes and materials. Further investigation of more complex forms on the potter's wheel as well as hand-built sculptures and vessels will help the student develop a personal identity with the material and its potential. Prerequisite: ARTS 210.

ARTS 220  **Glass, I**  credit: 3 hours.
Introduction to all of the basic processes of glass forming, including blowing, casting and oven work. Focus on the development of the hot form and a working knowledge of the specialized processes, tools, and equipment used with glass as a creative material. Prerequisite: Sophomore standing or consent of instructor.

ARTS 221  **Glass, II**  credit: 3 hours.
Object-making using hot and cold glass. Concentration on the development of personal sensibilities using glass, light and mixed media. Slides, demonstrations and studio time on casting, slumping, fusing, sandblasting and enamelling/painting on glass. This course is directed toward the broad artistic challenge of material expertise and personalized conceptual growth. Prerequisite: ARTS 220.

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 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. Prerequisite: ARTF 102 Drawing I 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 up to 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 Painting I. 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 Painting I.

ARTS 255 Painting, Issues and Methods credit: 2 hours.
Continuation of ARTS 252 with special emphasis on formal organization in Painting. Prerequisite: ARTS 252.

ARTS 256 Watercolor, I credit: 2 hours.
Prerequisite: ARTF 104 & ARTF 105.

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. Student must furnish camera. Prerequisite: Freshman standing in Art and Design; or consent of instructor.

ARTS 261 Photography, II credit: 3 hours.
Uses hand held cameras (35mm and 2-1/4") and black and white processes to express ideas and emotions 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 and Studio 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 transparencies as media 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.
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. Continuation of ARTS 280 Sculpture I. Prerequisite: ARTS 280 Sculpture I.

ARTS 310 Ceramics, III credit: 3 hours.
Introduction to ceramic design for developing basic skills in designing and producing clay products by various hand processes including throwing, handbuilding, and casting. Prerequisite: Junior standing in curriculum in crafts. Additional Class Materials Fee Required.

ARTS 311 Ceramics, IV credit: 3 hours.
Introduction to ceramic glaze calculation; concern with the understanding and application of the knowledge of glaze calculation in a creative way and with applications of creative experiments in glaze and clay bodies. Prerequisite: ARTS 310.

ARTS 312 Kiln Design credit: 3 hours.
Design and construction of a kiln. May be repeated to a maximum of 6 hours. Prerequisite: ARTS 210 and ARTS 211, or consent of instructor.

ARTS 320 Glass credit: 2 TO 4 hours.
Advanced glass design with emphasis on professional development and personal style. Prerequisite: Consent of instructor.

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 hollowware, 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, champane, 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 hollowware through traditional forming processes; emphasis on sinking, angle raising, crimping, stretching, seamng 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. Additional Facilities Charge of $75 Required.

ARTS 350  **Intermediate Studio I**  credit: 4 hours.
Combined painting and sculpture 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 and sculpture. Prerequisite: ARTS 254 or ARTS 281.

ARTS 351  **Intermediate Studio II**  credit: 4 hours.
Continuation of ARTS 350. Combined painting and sculpture 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 and sculpture. 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 353  **Intermediate Painting, II**  credit: 3 hours.
Prerequisite: ARTS 351, 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 380  **Intermediate Sculpture, I**  credit: 2 hours.
A free, experimental, and creative use of permanent and impermanent sculpture materials; clays, wood, pastelines, and plasters. Prerequisite: ARTS 281.

ARTS 381  **Materials and Techniques I**  credit: 3 hours.
Special projects for cast bronze; model preparations, investments, melting, pouring, chasing, and developing of patinas. Prerequisite: ARTS 281; junior standing in curriculum in Sculpture.

ARTS 382  **Intermediate Sculpture, II**  credit: 2 hours.
Special projects in stone carving and malleable sheet metal; lead, copper, brass, and aluminum. Prerequisite: ARTS 380.

ARTS 383  **Materials and Techniques II**  credit: 3 hours.
Special projects in terra cotta; use of various clays; preparation and construction methods; special problems in casting methods and materials; kiln operation; fuels; and glazing. Prerequisite: ARTS 381.
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 literature. Discusses 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 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  **Ceramics, V**  credit: 5 hours.
The application of the combined skills of throwing and creative glaze procedures to produce thrown ceramic products with the emphasis on creative experimentation; also covers plaster and mold making as a creative procedure in producing clay products. 5 undergraduate hours. No graduate credit. Prerequisite: ARTS 311.

ARTS 411  **Ceramics, VI**  credit: 5 hours.
Technical and creative research in ceramic design, with emphasis on reappraisal of the traditional media and the traditional limited production method used by artist potters. 5 undergraduate hours. No graduate credit. Prerequisite: ARTS 410.

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 440  **Image Studio**  credit: 3 OR 4 hours.
Focuses on creative problem solving using new media (primarily web) in the image-making process. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior standing.

ARTS 441  **Multimedia Studio**  credit: 3 hours.
Introduce and explore the structure, language, and programming aspects of time-based media in the art making process. May be repeated. Maximum of 6 undergraduate hours. Prerequisite: Junior standing.

ARTS 442  **Moving Image I**  credit: 3 OR 4 hours.
Explores the potential of time-based media for creative expression and communications within the context of visual art and design. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior standing.

ARTS 443  **Moving Image II**  credit: 3 OR 4 hours.
Explores advanced concepts and techniques of time-based media for creative expression and communications within the context of visual art and design. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 hours. Prerequisite: ARTS 442 or consent of instructor.

ARTS 444  **Experimental Web Studio**  credit: 3 OR 4 hours.
Explores advanced concepts and techniques for using the World Wide Web as a medium of creative expression and communication within the context of visual art. 3 undergraduate hours. 4 graduate hours. May be repeated. 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 450  **Advanced Studio I**  credit: 4 hours.
First of two capstone courses in studio arts practice, individualized study for Painting and Sculpture 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 and Sculpture 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 only. Prerequisite: ARTS 450 Advanced Studio I.

ARTS 452  **Advanced Painting, II**  credit: 3 hours.
Prerequisite: ARTS 450, and senior standing in Painting. Class Schedual Information: Additional Class Materials Fee Required.

ARTS 453  **Advanced Painting Studio, II**  credit: 3 hours.
Advanced creative study and research in various painting and drawing media, individual exhibition, documentation of work, statement of aesthetic objectives. Visiting critic/artist and staff critique student art. 3 undergraduate hours. No graduate credit. Prerequisite: ARTS 451, and senior standing in Painting. Class Schedual Information: Additional Class Materials Fee Required.

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 464  **Video for Artists I**  credit: 3 hours.
Explores the potential of video as a medium for creative expression and communications within the context of visual art. See current Class Schedule for average student materials cost; camera, recording, and editing equipment are furnished. Prerequisite: Junior standing in Art; ARTS 260 or consent of instructor.

ARTS 480  **Advanced Sculpture, I**  credit: 2 hours.
Introduction to plastics and welded metals; projects utilizing the special qualities of these materials. 2 undergraduate hours. No graduate credit. Prerequisite: ARTS 382.

ARTS 481  **Advanced Sculpture I**  credit: 3 hours.
Projects in various permanent materials; special attention given to the relation of sculpture to the allied fields of architecture and landscape architecture. 3 undergraduate hours. No graduate credit. Prerequisite: ARTS 383.

ARTS 482  **Advanced Sculpture, II**  credit: 2 hours.
Projects in permanent materials; special attention given to the relation of sculpture to the allied fields of architecture and landscape architecture. 2 undergraduate hours. No graduate credit. Prerequisite: ARTS 480.

ARTS 483  **Advanced Sculpture II**  credit: 3 hours.
Continuation of ARTS 481 3 undergraduate hours. No graduate credit. Prerequisite: ARTS 481.

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. Maximum of 6 undergraduate or 8 graduate hours. Prerequisite: ARTH 111, ARTH 112, and junior standing.

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 345  **Gov & Pol of SE Asia**  credit: 3 hours.
Same as PS 345. See PS 345.

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, or 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. May be repeated. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.
Astronomy

Chair of Department: Lewis E. Snyder
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. Credit is not given to students with credit in ASTR 121 or ASTR 122; not open to students with credit in PHYS 102, or equivalent. Students with credit in PHYS 102 are encouraged to take ASTR 121 or ASTR 122.
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. Intended for non-science majors; science and Astronomy majors should take ASTR 210. Credit not given to students with credit in ASTR 100 or ASTR 210 or GEOL 116; or in PHYS 212 or higher-level Physics course. Students with credit in PHYS 211 are encouraged to take ASTR 210. Prerequisite: Credit or concurrent enrollment in a Quantitative Reasoning I course.
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. Intended for non-science majors; science and Astronomy majors should take ASTR 210. Credit not given to students with credit in ASTR 100 or ASTR 210, or in PHYS 212 or higher-level physics course. Students with credit in PHYS 211 are encouraged to take ASTR 210. Prerequisite: Credit or concurrent enrollment in a Quantitative Reasoning I course.
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.
May be repeated. Approved for both letter and S/U grading.

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. Credit is not given to students who have credit in ASTR 100 or in ASTR 121 and ASTR 122. Prerequisite: Credit or concurrent registration in PHYS 212.

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

ASTR 230  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). Prerequisite: ASTR 100, ASTR 121, ASTR 122, or ASTR 210; or consent of instructor.

This course satisfies the General Education Criteria for a:
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ASTR 350  Introduction to Cosmology  credit: 3 hours.
Descriptive course on modern cosmological theories. Topics include aspects of special and general relativity; curved spacetime; the Big Bang; inflation; primordial element synthesis; the cosmic microwave background; the formation of galaxies and large scale structure. Prerequisite: ASTR 100, or ASTR 121, or ASTR 122, or ASTR 210, or consent of instructor.

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

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 213 or PHYS 214; or consent of instructor.

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 213 or 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; those in our Local Group, structure of voids and superclusters. Nature of peculiar objects: Seyfert galaxies, starburst galaxies, and quasars. Elementary aspects of physical cosmology. Prerequisite: ASTR 100 or ASTR 121 and ASTR 122 or ASTR 210; and PHYS 211 and PHYS 212

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 242; PHYS 213 or PHYS 214; or consent of instructor. ASTR 210 is recommended.

ASTR 450  Astrochemistry  credit: 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. May be repeated. Approved for both letter and S/U grading. 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 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.
May be repeated. Approved for both letter and S/U grading. Prerequisite: Consent of instructor.

ASTR 599  Thesis Research  credit: 0 TO 16 hours.
Approved for S/U grading only.
Atmospheric Sciences

Atmospheric Sciences
Head of Department: Donald J. Wuebbles
Department Office: 101 Atmospheric Sciences Building, 105 South Gregory Street, Urbana
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ATMS 100  **Introduction to Meteorology**  credit: 3 hours.
Introduces the student to the basic concepts and principles of atmospheric science in a descriptive format; emphasizes the physics responsible for changes in the weather; uses current weather information to illustrate textbook material.

This course satisfies the General Education Criteria for a:
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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.

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, regional drought and nuclear winter; distinguishes anthropogenic influences and natural variability of the earth system; addresses societal impacts, mitigation strategies, policy options and other human responses to global change. Prerequisite: A 100-level course in atmospheric science or chemistry or consent of instructor

This course satisfies the General Education Criteria for a:
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ATMS 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
Special topics each term. May be repeated.

ATMS 300  **Weather Processes**  credit: 3 hours.
Introduction to the mean state of the atmosphere, the fundamental physics of weather processes, and the mechanisms producing daily weather changes, both qualitative and quantitative in nature. Prerequisite: MATH 242 or consent of instructor.

ATMS 401  **Atmospheric Physics**  credit: 4 hours.
Quantitative introduction to atmospheric thermodynamics, cloud physics, and radiative transfer; topics include the structure, stability, and energy balance of the atmosphere, and the formation of clouds and precipitation. Prerequisite: MATH 242; consent of instructor.

ATMS 402  **Atmospheric Dynamics**  credit: 4 hours.
Introduction to those elements of fluid dynamics and thermodynamics essential to understanding the large- and small-scale motions of the neutral atmosphere. Same as PHYS 429. Prerequisite: MATH 380; consent of instructor.

ATMS 403  **Weather Analysis & Forecasting**  credit: 4 hours.
Course provides the student with the necessary skill to conceptualize 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, participate in discussions of weather processes as depicted by weather maps, and learn techniques of forecasting weather. The 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. Numerical weather prediction models and statistical forecasting techniques are reviewed and utilized. Prerequisite: ATMS 300, 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 385 or MATH 386.

ATMS 420  **Atmospheric Chemistry**  credit: 3 hours.
Same as CEE 447, and ENVS 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 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 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 500  **Synoptic 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. Prerequisite: ATMS 401 and ATMS 402.

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 Prerequisite: ATMS 401 and ATMS 402.

ATMS 502  **Numerical Fluid Dynamics**  credit: 4 hours.
Intended to give the student practical numerical techniques for solving those linear and nonlinear differential equations which appear frequently as initial and boundary value problems in hydrodynamics and dynamic meteorology. Same as CS 505, and CSE 566. Prerequisite: MATH 380 or consent of instructor.

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 401.
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 401.

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 401 or equivalent, and ATMS 402.

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 402 or consent of 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 in atmospheric sciences at the university level. Topics covered include: learning styles, syllabus writing and course development, teaching methods and best science teaching practices, incorporating science research in the classroom, technology in the classroom, teaching philosophy, and 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. May be repeated to a maximum of 2 hours. Approved for S/U grading only. 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 TO 4 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. 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.
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. Prerequisite: Consent of director. May be repeated.

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 both letter and S/U grading.

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 26.4 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. 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 6 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 7 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 22 hours of flight training and instruction and three hours 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 five hours of flight simulator instruction, eleven hours of flight instruction and supervised training, four 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, Immelmanns, 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. Prerequisite: AVI 101 and 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; 18 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
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 Rotorcraft-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. Prerequisite: Pilot certificate, and consent of director.

AVI 392  Flight Instructor CFIi 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 emergency 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 Sys Model and Des  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: 2 TO 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. 2 or 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. 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. 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.
Thesis research. May be repeated to a maximum of 36 hours. Prerequisite: Graduate standing and consent of instructor.
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.
Examination of the nature of law and the formation and application of legal principles; the role of law in society; the legal environment in which business operates, particularly government taxation; the regulation of commerce, competition, and labor-management relations; and the concept of property: its creation, transfer, and importance to our business society. 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, commercial paper, security devices, and property. Credit is not given for both BADM 301 and BADM 403. Prerequisite: Junior standing

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: BADM 310, graduate standing, or consent of instructor

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, graduate standing, or consent of instructor

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 BADM 313 and PSYC 245. Prerequisite: BADM 312; ECON 203 and ECON 340

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. 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 Mgmt**  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: Concurrent with 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: BADM 320 or consent of instructor

**BADM 329  New Product Development**  credit: 3 hours.
Course exposes business students to business and marketing decisions in the unique context of new product development and marketing. Prerequisite: BADM 320

**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: CS 105 and at least two of the following: FIN 221, ACCY 201, BADM 310 and BADM 320.

**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: CS 105

**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.

**BADM 365  New Product Marketing**  credit: 3 hours.
Course 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.
Course 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.

**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, or consent of instructor.

**BADM 375  Business Process Management**  credit: 3 hours.
In-depth treatment of decisions involved in designing and implementing productive business processes; particular emphasis on the systematic application of concepts and techniques to achieve the efficient flow of materials and information, and the productive utilization of people and technology.

**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.

**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: BADM 324 or BADM 327. 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: ECON 101.

**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: Junior standing.

**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, products liability, commercial paper, debtor-creditor relations, property, agency and employment, partnership, corporation Prerequisite: BADM 300 or consent of instructor

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. Prerequisite: BADM 322 and BADM 325

BADM 432  **Intro to Mgt Info Systems**  credit: 2 TO 4 hours.
Same as ACCY 432. See ACCY 432.

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; exposes 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: Junior standing in the College of Business or admission to the Master of Business Administration program; or consent of instructor.

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: Consent of instructor

BADM 447  **Legal Strat for Entrepire 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. Prerequisite: Senior standing in College of Business

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.

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.

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.
Course is designed for students enrolled in the Technology and Management program, and 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. 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. May be repeated to a maximum of 4 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: 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 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.
Seminar 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: 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, utility 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: 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  Promotional Strategy**  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: 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.

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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 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 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: 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: 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: 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 queuing theory, Markov chains, and sequential decisions.

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, multicolinearity, 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 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.
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: Ronald Sousa
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 up to 6 hours. Prerequisite: BASQ 401 or consent of instructor.
Biochemistry
Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated.

Gene Expression  credit: 3 hours.
Same as MCB 406. See MCB 406.

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 3-4 topics of high current research activity, each presented by one faculty member. Readings will be based on the primary lecture. Prerequisite: Senior standing in the Biochemistry Specialized Curriculum. MCB 354 and 406 or consent of instructor. 3 Undergraduate credit hours only.

Physical Biochemistry  credit: 3 hours.
Physical properties of biological macromolecules, with special emphasis on proteins and nucleic acids; the use of physical methods for the characterization of such substances. Same as CHEM 472 and MCB 446. Prerequisite: CHEM 440 or CHEM 444; MCB 354 or MCB 450 or equivalent is recommended.

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, protein and DNA sequencing, DNA arrays, Mass spectroscopy, 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.

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.

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.

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.

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.

Thesis Research  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
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 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 course for advanced freshman and sophomore level engineering and life science students. May be repeated
in the same or separate semesters up 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.
Study of selected topics in regular course format; variable content. May be repeated in the same or separate semesters up to a
maximum of 8 hours. Prerequisite: As specified for each topic offering; see Class Schedule or departmental course information.

BIOE 300  Seminar  credit: 0 hours.
Survey lecture course intended to introduce juniors and seniors to a broad range of Bioengineering topics. Approved for S/U grading
only. May be repeated. Prerequisite: Junior or senior standing.

BIOE 397  Individual Study  credit: 1 TO 4 hours.
Special project or reading course for junior and senior level engineering and life science students. Prerequisite: Approved written
application to department as specified by department or instructor.

BIOE 398  Special Topics  credit: 1 TO 4 hours.
Study of selected topics in regular course format; variable content. May be repeated up to 8 hours. Prerequisite: As specified for each
topic offering; see Schedule or departmental course information.

BIOE 406  Veterinary Ortho Biomechanics  credit: 3 hours.
Same as VB 406. See VB 406.

BIOE 414  Biomedical Instrumentation  credit: 3 hours.
Same as ECE 414. See ECE 414.

BIOE 415  Biomedical Instrumentation Lab  credit: 2 hours.
Same as ECE 415. See ECE 415.

BIOE 417  Modeling Neural Systems  credit: 4 hours.
Same as BIOP 417, MCB 417, and NEUR 427. See MCB 417.

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 471  Biomaterials for Engineers  credit: 3 hours.
Same as MSE 471. See MSE 471.
BIOE 472  **Techniques in Biomolecular Eng**  credit: 3 OR 4 hours.
Same as CHBE 472. See CHBE 472.

BIOE 475  **Modeling of Bio-Systems**  credit: 3 OR 4 hours.
Same as ECE 475. See ECE 475.

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: Senior standing; and consent of instructor.

BIOE 497  **Individual Study**  credit: 1 TO 4 hours.
Special project or reading course for senior level and graduate engineering and life science students. May be repeated up to 8 hours in a term to a total of 12. Prerequisite: Approved written application to department as specified by department or instructor.

BIOE 498  **Special Topics**  credit: 1 TO 4 hours.
Study of selected topics in regular course format; variable content. May be repeated to a maximum of 12 hours, but no more than 8 in any one term. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

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 graduate students to a broad range of Bioengineering topics. Approved for S/U grading only. May be repeated up to a total of 2 hours. Prerequisite: Graduate standing in engineering or sciences.

BIOE 501  **Seminar Discussion**  credit: 1 hours.
This course familiarizes graduate students with reading and discussing academic journals in Bioengineering. Approved for S/U grading only. Prerequisite: Graduate student in Bioengineering.

BIOE 597  **Individual Study**  credit: 1 TO 8 hours.
Special project or reading course for graduate engineering and life science students. Prerequisite: Approved written application to department as specified by department or instructor.

BIOE 598  **Special Topics**  credit: 1 TO 4 hours.
Study of selected topics in regular course format; variable content. May be repeated up to 8 hours a term to a total of 12 hours. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

BIOE 599  **Thesis Research**  credit: 0 TO 16 hours.
Bioengineering graduate thesis research. May be repeated. Approved for S/U grading only.
Biology

Integrative Biology, School of
Director of School: Fred Delcomyn
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.
May be repeated. Approved for S/U grading only.
# Biophysics

Biophysics and Computational Biology, Center for  
Director of School: Martin Gruebele  
School Office: 156 Davenport Hall, 607 South Mathews, Urbana  
Phone: 333-1630  
www.life.uiuc.edu/biophysics/

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIOP 401</td>
<td>Introduction to Biophysics</td>
<td>3 hours</td>
</tr>
<tr>
<td>BIOP 417</td>
<td>Modeling Neural Systems</td>
<td>4 hours</td>
</tr>
<tr>
<td>BIOP 419</td>
<td>Brain, Behavior &amp; Info Process</td>
<td>3 hours</td>
</tr>
<tr>
<td>BIOP 420</td>
<td>Molecular Biophysics</td>
<td>3 hours</td>
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<tr>
<td>BIOP 432</td>
<td>Photosynthesis</td>
<td>3 hours</td>
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<tr>
<td>BIOP 470</td>
<td>Computational Chemical Biology</td>
<td>3 OR 4 hours</td>
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<tr>
<td>BIOP 514</td>
<td>Sensory Biophysics</td>
<td>1 OR 2 hours</td>
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<tr>
<td>BIOP 540</td>
<td>Topics in Biophysical Chem</td>
<td>4 hours</td>
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<tr>
<td>BIOP 541</td>
<td>Macromolecular Modeling</td>
<td>4 hours</td>
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<tr>
<td>BIOP 542</td>
<td>Biomedical Magnetic Resonance</td>
<td>3 hours</td>
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<tr>
<td>BIOP 546</td>
<td>Bioenergetics</td>
<td>2 hours</td>
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<tr>
<td>BIOP 550</td>
<td>Biomolecular Physics</td>
<td>4 hours</td>
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<tr>
<td>BIOP 581</td>
<td>Lab Rotation I</td>
<td>2 hours</td>
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</tbody>
</table>

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.

Same as BIOE 417, MCB 417, and NEUR 427. See MCB 417.

Same as MCB 419, BIOE 419 and NEUR 419. See MCB 419.

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.

Same as CHEM 470. See CHEM 470.

Advanced treatment of sensory systems which are approachable in detailed quantitative terms; lectures scheduled for four weeks during the first quarter of the spring term. Normally carries 1 hour credit; however, students may develop a particular topic introduced in the lectures into a term paper for an extra 1 hour credit. Students must consult the instructor before enrolling for 2 hours. Prerequisite: BIOP 401, MCB 401, or consent of instructor.

Same as MCB 554, MCB 450, BIOP 401, or equivalent; or consent of instructor.

Same as CHEM 576, and MCB 556. See CHEM 576.

Same as BIOP 401, MCB 417, and NEUR 427. See MCB 417.

Same as MCB 419, BIOE 419 and NEUR 419. See MCB 419.

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.

Same as CHEM 470. See CHEM 470.

Advanced treatment of sensory systems which are approachable in detailed quantitative terms; lectures scheduled for four weeks during the first quarter of the spring term. Normally carries 1 hour credit; however, students may develop a particular topic introduced in the lectures into a term paper for an extra 1 hour credit. Students must consult the instructor before enrolling for 2 hours. Prerequisite: BIOP 401, MCB 401, or consent of instructor.

Same as CHEM 576, and MCB 556. See CHEM 576.

Principles and analysis of macromolecular structure, dynamics and interactions, and bioinformatics. Includes use of computers and graphics workstations to carry out modeling and simulations of proteins and nucleic acids. Prerequisite: Consent of instructor.

Principles of magnetic resonance and its application to biology and medicine; includes discussion of magnetic resonance imaging and spectroscopy of living systems. Prerequisite: Introductory biology and physical chemistry.

Describes and analyzes the principles of biological energy transduction using diverse examples from prokaryotic and eukaryotic metabolism; includes fermentation, aerobic and anaerobic respiration, methanogenesis, and photosynthesis. Meets during the last half of the spring term. Same as MCB 546. Prerequisite: MCB 354 and CHEM 440, or equivalent; or consent of instructor.

Same as MCB 550, and PHYS 550. See PHYS 550.

Describes and analyzes the principles of biological energy transduction using diverse examples from prokaryotic and eukaryotic metabolism; includes fermentation, aerobic and anaerobic respiration, methanogenesis, and photosynthesis. Meets during the last half of the spring term. Same as MCB 546. Prerequisite: MCB 354 and CHEM 440, or equivalent; or consent of instructor.

Same as MCB 550, and PHYS 550. See PHYS 550.
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. Last five weeks of 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.
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 OR 5 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. Participation in the language laboratory required. Same as AFST 403. 5 undergraduate hours. 4 graduate hours. Prerequisite: BMNA 202.

BMNA 404  **Intermediate Bamana II**  credit: 4 OR 5 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. Participation in the language laboratory required. Same as AFST 404. 5 undergraduate hours. 4 graduate hours. Prerequisite: BMNA 403.
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 hours.
Summer Bridge - Reading.

BR 011  **Summer Bridge-Composition**  credit: 0 hours.
Summer Bridge - Composition.

BR 012  **Summer Bridge-Math**  credit: 0 hours.
Summer Bridge - Math.

BR 013  **Summer Bridge-Computer Skills**  credit: 0 hours.
Summer Bridge - Computer Skills.
Business and Technical Writing

English
Head of Department: Martin J. Camargo
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 253  Bus Admin Comm  credit: 3 hours.
Teaches students to apply the principles of successful professional writing to a range of realistic case problems in routine office communication. Emphasizes flexible problem-solving skills for daily administrative writing tasks. Credit is not given for both BTW 253 and BTW 250, BTW 261, or BTW 263. Prerequisite: Junior standing and completion of campus Composition I requirement.

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. 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

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.
Business

Dean of College: Avijit Ghosh
College Office: 260 Wohlers Hall, 1206 South Sixth, Champaign
Phone: 333-2747
www.business.uiuc.edu

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

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. 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.
CDB 297  Undergrad Sem Cell Devel Biol  credit: 1 hours.
Review and discussion of current literature describing research in molecular, cellular, and structural biology of higher eukaryotes with
an emphasis upon animal systems. May be repeated to a maximum of 4 hours. Prerequisite: MCB 250 and MCB 252, or consent of
instructor.

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. Prerequisite: MATH 230; 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. Prerequisite: credit or concurrent registration in MATH 242 recommended.

CEE 300 Behavior of Materials credit: 4 hours.
Same as TAM 324. See TAM 324.
This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition

CEE 310 Transportation Engineering credit: 3 hours.
An 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 311 Engineering Surveying credit: 4 hours.
Introduction to surveying and photogrammetry. Prerequisite: CEE 202 credit or concurrent registration in CS 101.

CEE 312 Route Surveying credit: 3 hours.
Principles for the design and layout of routes; coverage includes horizontal and vertical alignment, route location, earthwork, computation, ground and photogrammetric survey methods, and special survey methods for highways, railroads, pipelines, tunnels and urban construction. Prerequisite: CEE 311.

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.
Considers the 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; and 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.
Basic topics in the 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: 3 OR 4 hours.
Same as MSE 444. See MSE 444.

CEE 401  Concrete Materials  credit: 3 hours.
Examines the influence of constituent materials (cements, aggregates and admixtures) on the properties of fresh and hardened concrete; mix design handling and placement of concrete; and behavior of concrete under various types of loading and environment; test methods. Laboratory practice is an integral part of the course. 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; and 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. Prerequisite: Senior standing in civil engineering.

CEE 415  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; and highway maintenance planning. Prerequisite: CEE 310.

CEE 416  Traffic Capacity Analysis  credit: 3 OR 4 hours.
Study of 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; and 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 of 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; and 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; and 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.
Examines the characteristics of rivers and lakes which affect the management of domestic and industrial wastewaters; includes assessment of chemical hazards, and introduction to surveillance and biomonitoring, and a review of regulations governing effluents. Prerequisite: CEE 330.

CEE 431 Biomonitoring credit: 3 hours.
Discusses 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; and 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 434 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: 3 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 401.

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.
Course will present 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 ENV 450. Prerequisite: CHEM 104; either CEE 330 or ATMS 401.

CEE 449 Environmental Engineering Lab credit: 3 hours.
Combination of lecture and laboratory designed to provide 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. Prerequisite: CEE 437 or CEE 446.

**CEE 450**  **Surface Hydrology**  credit: 3 hours.
Study of descriptive and quantitative hydrology dealing with the distribution, circulation, and storage of water on the earth's surface; discusses 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: CEE 350.

**CEE 453**  **Urban Hydrology and Hydraulics**  credit: 3 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**  **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; and 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; and 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. 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 385 and TAM 251.

CEE 472 Structural Dynamics 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; and introduction to systems with distributed mass and flexibility. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CEE 360, MATH 385, 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; and 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; senior or graduate standing in civil engineering.

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. 0 undergraduate hours. No graduate credit. Approved for S/U grading only. Prerequisite: Junior standing.

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. Prerequisite: Senior or graduate standing; consent of instructor.

CEE 498 Special Topics credit: 1 TO 4 hours.
Structured presentations of new and developing areas of knowledge in civil engineering offered by the faculty to augment the formal courses available. Prerequisite: Individually identified for each offering under this course number; see Schedule.

CEE 500 Advanced Topics in Materials credit: 1 TO 4 hours.
Lectures and discussions related to advanced topics in the science and technology of materials used in civil engineering construction. May be repeated in the same or separate terms to a maximum of 16 graduate hours. Prerequisite: As specified for each section; see Schedule.
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; and 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); and destructive testing, maintenance strategies, and 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 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 483 and knowledge of probability and statistics.

CEE 516  **Sys Method and Network Techniq**  credit: 4 hours.
Same as IE 512. See IE 512.

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 385, 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  **Multiattribute 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.
Studies 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: MATH 385 and CEE 446.

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 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 380, MATH 385, and TAM 335.

**CEE 557  Groundwater Modeling  credit: 4 hours.**
Examines 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 454 and MATH 385.

**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; and 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.**
Study of the 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 CEE 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.**
Study of the effects of earthquakes on constructed works and of the design of structures to resist earthquake motions; earthquake ground motions and mechanisms; response of structures to earthquake motion; behavior of materials, elements, assemblages, and structures subjected to earthquake motion; principles of earthquake resistant design; and special topics. 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 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; and 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; and 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; and 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; and introduction to stability analyses in rock. Prerequisite: CEE 483.

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; and field instrumentation. Prerequisite: CEE 586.

CEE 588  **Geotechnical Earthquake Engng**  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 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. Prerequisite: Consent of instructor.

CEE 598  **Special Topics**  credit: 1 TO 4 hours.

Structured presentations of new and developing areas of knowledge in civil engineering at an advanced graduate level. Prerequisite: Individually identified for each offering under this course number; see Schedule.

CEE 599  **Thesis Research**  credit: 0 TO 16 hours.

Approved for S/U grading only. May be repeated.
### 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 both letter and S/U grading. Prerequisite: CHEM 102 or 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 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. 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: 4 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 385; 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 385.

**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 460  Process Development**  credit: 3 hours.
Experimental design projects. Topics include statistical design of experiments, parameter estimation, scale-up, design optimization, process simulation, and statistical quality control. Prerequisite: Senior standing in Chemical and Biomolecular 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.
as BIOE 472. 3 undergraduate hours. 4 graduate hours. Prerequisite: CHEM 202, CHEM 203, CHEM 204 or equivalent; MATH 220; PHYS 211, PHYS 214 or equivalent; MCB 350.

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 385 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. May be repeated to a maximum of 6 hours. Prerequisite: Senior standing and consent of instructor. No graduate credit.

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 552  **Non-Newtonian Fluid Mechanics**  credit: 4 hours.
In-depth treatment of continuum and molecular dynamics of non-Newtonian fluids, particularly polymeric systems. Topics include linear and non-linear viscoelasticity, rheometry and rheo-optics, and molecular rheology. Applications to the processing of rheologically complex materials. Prerequisite: CHBE 521.

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 242 and MATH 461; or consent of instructor.

**CHBE 572 Metabolic Systems Engineering** credit: 4 hours.
Prerequisite: MATH 225, MATH 242 and MATH 385; 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. May be repeated. Approved for both letter and S/U grading. 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. Preparatory 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 B (Biological Version): Chemistry of organic and biochemical systems, chemical energetics and equilibrium, chemical kinetics, and reaction mechanisms. Section P (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.
May be repeated. Approved for both letter and S/U grading.

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. Credit toward graduation is received for CHEM 202 only if CHEM 203 is also completed. Prerequisite: Admission by U of I placement test or consent of adviser; credit or concurrent registration in MATH 220; 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 Chemistry 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. 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 but not for CHEM 121. 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 with credit in CHEM 223 cannot receive credit for CHEM 203 or 121. 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 204, CHEM 121 or CHEM 222.

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 232 and CHEM 236. Prerequisite: CHEM 204, CHEM 121 or CHEM 222 through CHEM 232.

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 both letter and S/U grading. 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 both letter and S/U grading. 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 both letter and S/U grading. 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. Class Section Information: Students must register for one lab and one quiz section.

**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 231 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 421 Separation Methods**  credit: 4 hours.

Examines theory, practice, and instrumentation in gas and liquid chromatography, extraction techniques, mass spectrometry as coupled to chromatography, electrophoresis, and separations based on phase equilibria. Prerequisite: Credit or concurrent registration in CHEM 440 or CHEM 442.

**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. Prerequisite: CHEM 121 or CHEM 222 and CHEM 232, or equivalent; PHYS 102; and MATH 242 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, CHEM 121, 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 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.

Same as MSE 401. See MSE 401.
CHEM 488  **Surfaces and Colloids**  credit: 3 OR 4 hours.
Same as MSE 480. See MSE 480.

CHEM 492  **Special Topics in Chemistry**  credit: 2 OR 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 conduction 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 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 Schrodinger 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 552  Chemical Kinetics  credit: 4 hours.
Theoretical and experimental topics in chemical kinetics and chemical dynamics; topics include relation between rates and mechanisms of chemical reactions, collision theory of reaction rates, activated complex theory, theory of unimolecular processes, classical dynamics of reactive scattering, elastic scattering, quantum theory of inelastic scattering or equivalent curve crossing processes, and experimental methods. Prerequisite: CHEM 444.

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. Approved for S/U grading only. 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. Approved for S/U grading only.
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
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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 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 16 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.

CHIN 515  Premodern Fiction and Drama  credit: 4 hours.
Close readings and analysis of selected pre-20th century Chinese works written in the premodern vernacular language. Prerequisite: CHIN 407 or CHIN 408.

CHIN 517  Studies in Literary Chinese  credit: 4 hours.
Close reading and analysis of selected Chinese texts written in the Chinese literary language with emphasis on poetry and artistic prose. Prerequisite: CHIN 407 or CHIN 408.
Community Health

Community Health
Head: Wojtek Chodzko-Zajko
Department Office: 127 Huff Hall, 1206 South Fourth, Champaign
Phone: 333-2307
www.chlth.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  Professional Seminar  credit: 1 hours.
Orientation to department; current views and issues in health fields; career opportunities; and related topics. Approved for both letter
and S/U grading.

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 by a psychiatrist with 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.
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). May be repeated up to a maximum of 6 hours. Approved for both letter and S/U grading. 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.
Same as KIN 390, and LEIS 390. See KIN 390.
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 up to a maximum of 8 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 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, ENVS 431, and IB 485. See IB 485.

CHLH 469  **Environmental Health**  credit: 3 OR 4 hours.
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.

CHLH 474 Principles of Epidemiology credit: 4 hours.
The epidemiology and natural history of infectious and noninfectious diseases, including integrated vector control and host resistance; mental health and public health. Same as ENVS 474, and PATH 574. Prerequisite: One statistics course.

CHLH 485 Community Health Internship credit: 8 hours.
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.

CHLH 494 Special Topics credit: 2 TO 4 hours.
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.

CHLH 501 Issues in Health Education credit: 4 hours.
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.

CHLH 510 Public Health Dev credit: 4 hours.
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.

CHLH 516 Epidemiology Infectious Dis credit: 3 hours.
Same as PATH 516. See PATH 516.

CHLH 517 Principle/Method Epidemiology credit: 4 hours.
Same as PATH 517. See PATH 517.

CHLH 527 Statistics in Epidemiology credit: 4 hours.
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.

CHLH 529 Evaluation of Health Policies credit: 4 hours.
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.

CHLH 540 Health Behavior: Theory credit: 4 hours.
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.

CHLH 550 Health Policy: United States credit: 4 hours.
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.

CHLH 560 Spatial Epidemiology credit: 4 hours.
Same as GEOG 560, and PATH 560. See PATH 560.

CHLH 571 Epidemiology and the Media credit: 1 OR 2 hours.
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 IB 592, and 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
CI 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated. Approved for both letter and S/U grading.

CI 260  **Serving Child in Schools/Comm**  credit: 2 hours.
This service learning course is designed for students interested in working with children (defined as birth through high school), careers serving children, and/or parenthood. Three main topics implied by the title will be explored through reading, writing, and discussion: (1) The concept of "Serving" - an examination of what service means, as well as the kinds of service and satisfaction of service involving children. In this course, service includes not only volunteer service opportunities, but also careers related to serving children; (2) "Children" - a brief look at child development and a deeper analysis of social issues facing American children today; (3) "Schools and Communities" - an overview of institutions serving children, including families, schools, and community agencies. A minimum of two hours per week of approved community service related to children is a requirement of the course. Opportunities for service projects will be available in cooperation with the Office of Volunteer Programs. Students will be given an orientation to working with children in their service assignments.

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 S/U grading only. 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 391  **Thesis**  credit: 2 hours.
Prerequisite: Senior standing.

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.
Exames 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: 1 hours.
Course examines 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. (EDPR 250) Requires concurrent enrollment in EDPR 250, section ELE. 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 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; EPS 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 431**  **Tchg Elementary Mathematics**  credit: 4 hours.
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. Prerequisite: MATH 103; admission to the Elementary Teacher Education Program.

**CI 432**  **Invest Approach Elem Math Inst**  credit: 2 hours.
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.

**CI 433**  **Found of Bilingual Educ**  credit: 2 TO 4 hours.
Analyzes historical, political, and educational influences on bilingual/ESL education, the potential of various program models to promote academic achievement, and the theoretical and practical reasons for bilingual instruction. Attention is given to the research base underlying bilingual education programs. Same as LLS 433. 3 undergraduate hours. 2 or 4 graduate hours.

**CI 435**  **Computer-Assisted Instruction**  credit: 4 hours.
Computer-assisted instruction (CAI) and its relation to classroom teaching; the teacher's role in development, management, and criticism of CAI lessons; treatment of topics including instructional capabilities of CAI systems, instructional programming, and the design of CAI lessons. Same as CS 417. Prerequisite: A 100 level Computer Science course, or consent of instructor.

**CI 436**  **Computer and Mathematics Educ**  credit: 4 hours.
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.

**CI 442**  **Math, Sci, Tech in Early Child**  credit: 5 hours.
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.

**CI 444**  **Social Stud Early Childhood Ed**  credit: 2 hours.
Course emphasizes the place of social studies in early childhood education program (preschool - grade 3). Focuses on several areas of knowledge related to the social life of the community as it is concerned with young children; (1) knowledge from the social sciences, (2) social cognition and social skills learning, and (3) ways of dealing with cultural and social diversity. Prerequisite: CI 420; admission to the Early Childhood Teacher Education Program.

**CI 446**  **Culture in the Classroom**  credit: 2 TO 4 hours.
Overview of the social and cultural factors that affect learning and teaching, and application of cultural information to curriculum development, classroom practices, and evaluation. 3 undergraduate hours. 2 or 4 graduate hours.

**CI 447**  **Iss Prac in Address Diversity**  credit: 1 hours.
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 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, study, and reference skills as they pertain to reading 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.
Developmental reading programs beyond the primary grades; factors related to reading speed and comprehension; vocabulary development, specific comprehension skills, study skills, and reading interests and tastes. 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 474  **Teach Elem Rdg & Lang Arts, I**  credit: 4 hours.
Course examines the basic theories, issues, methods, and materials for a developmental K-8 language arts program. Emphasizes language arts (including reading, as well as 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: 2 hours.
Course examines the basic theories, issues, methods, and materials for a developmental K-8 language arts program. Emphasizes language arts (including reading, as well as 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 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 principle 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 511  Tchng & Learning Tech Soc  credit: 4 hours.
Students will address the challenges and opportunities which electronic technologies bring to the practice of teaching and learning in K-12 environments. Course will address both theoretical issues from a critical studies perspective and practical issues germane to technology adoption and integration.

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: EDPSY 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.
Deals with theories of learning, research studies, curriculum development projects, and other events which 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.
Deals with procedures for developing curricula in the major content areas of mathematics and alternative instructional procedures. Prerequisite: CI 430, or consent of instructor.

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 alternative means of 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 561  **Theory Prac in Child Comp**  credit: 4 hours.
Studies composition or writing, its beginning and progress, gives particular attention to the relationship between creativity and imagination and the basic skills of punctuation, spelling, and other conventions of writing; and examines research studies on functions of writing, motivation, and purposes for writing during the school years. Prerequisite: CI 475 & 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.
Same as ENGL 582. See ENGL 582.

CI 566  **Topics Writ Pedagogy & Design**  credit: 4 hours.
Same as ENGL 583. See ENGL 583.

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 dealt with in a way that provides a historical perspective for evaluating the merit of emerging issues and trends. Prerequisite: CI 475 & CI 476 or equivalent, or consent of instructor.

CI 571  **Field Instruction in Rdg Prog**  credit: 4 hours.
Directed practice in the area of reading; students are placed in an approved and supervised field position for part of the term.

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  **Corrective Rdg Inst in Class**  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  **Clin Diag Remediation in Rdg**  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  **Clin Prac in Corrective Rdg**  credit: 4 hours.
Diagnostic procedures and individual instruction with small groups of children who have reading difficulties. Prerequisite: CI 575 and CI 576.

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, 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.
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: Richard P. Wheeler
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.
(C I C 290)

CIC 500  **CIC Traveling Scholar**  credit: 0 TO 20 hours.
(C I C 400)

CIC 501  **CIC Common Courses & Inst**  credit: 0 TO 20 hours.
(C I C 401)
Cinema Studies

Cinema Studies, Unit for
Director: David Desser
Office Address: 4080 Foreign Language Building, 707 South Mathews, Urbana
Phone: 333-3356
www.uiuc.edu/unit/cinema

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 300 Topics in Film and History credit: 3 hours.
Same as HIST 300. See HIST 300.

CINE 365 Asian American Media and Film credit: 3 hours.
Same as AAS 365 and COMM 365. See AAS 365.

CINE 381 Black Women and Film credit: 3 hours.
Same as AFRO 381. See AFRO 381.
CINE 385  The Jewish Experience in Film  credit: 3 hours.
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.

CINE 395  Special Cinema Studies Topics  credit: 3 hours.
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.

CINE 401  Philosophy and Film  credit: 4 hours.
Same as PHIL 401. See PHIL 401.

CINE 419  Russian & East European Film  credit: 3 OR 4 hours.
Same as COMM 419, and SLAV 419. See SLAV 419.

CINE 461  Film Theory and Criticism  credit: 3 OR 4 hours.
Study of major aesthetic and critical theories about film; study of theory and practice of film criticism. 3 undergraduate hours. 4 graduate hours. Prerequisite: One cinema studies course at the 200 or 300 level and one college course in literature, or consent of instructor.

CINE 466  Japanese Cinema  credit: 3 OR 4 hours.
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.

CINE 470  Topics in Italian Cinema  credit: 3 OR 4 hours.
Same as ITAL 470. See ITAL 470.

CINE 488  French & Comparative Cinema I  credit: 4 hours.
Same as CWL 488, FR 488, and HUM 488. See FR 488.

CINE 489  French & Comparative Cinema II  credit: 4 hours.
Same as CWL 489, FR 489, and HUM 489. See FR 489.

CINE 490  The Films of Ingmar Bergman  credit: 3 hours.
Same as SCAN 490. See SCAN 490.

CINE 492  Swedish Cinema  credit: 3 hours.
Same as SCAN 492. See SCAN 492.

CINE 493  German Cinema I  credit: 3 hours.
Same as GER 493. See GER 493.

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 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
Chair: Kirk Freudenburg
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 110  Introduction to Greek Culture  credit: 2 hours.
Study of social and cultural life in Greece during the classical period. Credit is not given for both CLCV 110 and CLCV 114.

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 112  The Roman Achievement  credit: 2 hours.
Introduction to Roman civilization through the study of the social and cultural life of ancient Rome. Credit is not given for both CLCV 112 and CLCV 116.

CLCV 114  Introduction to Greek Culture  credit: 3 hours.
Studies the social and cultural life in Greece during the classical period. Credit is not given for both CLCV 114 and CLCV 110.

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. Shares two hours of lecture with CLCV 112; additional hour of lecture-discussion for a closer analysis of topics. Credit is not given for both CLCV 116 and CLCV 112.

This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
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.
May be repeated. Approved for both letter and S/U grading.

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 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 up to 1 time(s). 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 Civilization

CLCV 363 Introduction to Oral Tradition credit: 3 hours.
Introduction to the study of oral traditions from around the world. 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 MDVL 415, and SPCM 415. See SPCM 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 Graeco-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.

CLCV 463 Approaches to Oral Tradition credit: 3 hours.
Exploration of theoretical approaches and methodologies of analysis used in the study of oral traditions. Discussion of concepts such as the ethnography of speaking, recetionalism, 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 364. Prerequisite: CLCV 363 or consent of instructor.

CLCV 482 Computer Foreign Lang Tchg credit: 4 hours.
Same as EIL 482, FR 482, GER 482, HUM 482, ITAL 482, LING 486, PORT 482, SLAV 482, and SPAN 482. See HUM 482.

CLCV 490 Topics in Classical Literature credit: 3 OR 4 hours.
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.

CLCV 491 Topics Classic Arch & Civ credit: 1 TO 4 hours.
Study of selected topics; variable content. May be repeated. Prerequisite: Consent of instructor.

CLCV 492 Senior Thesis credit: 2 TO 4 hours.
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.

CLCV 498 Senior Survey credit: 2 TO 4 hours.
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.

CLCV 515 Seminar in Ancient Art credit: 4 hours.
Same as ARTH 515. See ARTH 515.

CLCV 520 Seminar in Class Archaeology credit: 4 hours.
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 Classical Civilization, Art History, Anthropology, Architecture, or History, or consent of instructor.

CLCV 550  Intro to Teaching of Classics  credit: 4 hours.
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.
COMM 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. We look 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. We also consider 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

COMM 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

COMM 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

COMM 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated up to 12 hours in separate semesters, if topics vary.

COMM 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

COMM 202  Social Aspects Info Systems  credit: 3 hours.
Same as INFO 202 and LIS 202. See LIS 202.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

COMM 250  Latina/os on the Bronze Screen  credit: 3 hours.
Same as LLS 250. See LLS 250.

COMM 264  Media, Money and Power  credit: 4 hours.
COMM 264: "Media, Money, and Power" is 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. Approved for S/U grading only.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult
COMM 317  **History of Communication**  credit: 3 hours.
Presented the nature and development of communication systems; history of communication media; history of journalism, advertising, and broadcasting; and communications in the modern world.

COMM 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.

COMM 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

COMM 322  **Politics and the Media**  credit: 3 hours.
Same as PS 312, and SPCM 325. See SPCM 325.

COMM 331  **Media and Democracy**  credit: 3 hours.
Studies the philosophical bases of the functions and the responsibilities of mass communications.

COMM 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.

COMM 352  **Attitude Theory and Change**  credit: 3 hours.
Same as PSYC 352, and SOC 300. See PSYC 352.

COMM 356  **Sex & Gender in Popular Media**  credit: 3 hours.
The course examines the notion that the mass media influence our development as gendered individuals, looking at those who argue for and against this notion. We consider 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 we consider representation of minorities in the dominant media and examine newly created alternative representations. Same as GWS 356.

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

COMM 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

COMM 365  **Asian American Media and Film**  credit: 3 hours.
Same as AAS 365 and CINE 365. See AAS 365.

COMM 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.

COMM 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).

COMM 389  **International Communications**  credit: 3 hours.
Same as PS 389. See PS 389.

COMM 391  **Special Topics**  credit: 1 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: Registration in the College of Communications or consent of college.

**COMM 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 2 courses in Media Studies.

**COMM 408  Cultural Analysis of Media**  credit: 3 OR 4 hours.

Same as SPCM 408. See SPCM 408.

**COMM 410  Media Ethics**  credit: 3 OR 4 hours.

Surveys the major ethical problems in news, publications 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.

**COMM 419  Russian & East European Film**  credit: 3 OR 4 hours.

Same as CINE 419, and SLAV 419. See SLAV 419.

**COMM 423  Language Acquisition**  credit: 3 OR 4 hours.

Same as LING 423, and PSYC 423. See PSYC 423.

**COMM 425  Intro to Psycholinguistics**  credit: 3 OR 4 hours.

Same as LING 425. See LING 425.

**COMM 432  Commodityfing Difference**  credit: 3 OR 4 hours.

Same as LLS 435, AFRO 435, AAS 435, and GWS 435. See LLS 435.

**COMM 435  Adv Interpersonal Comm**  credit: 3 OR 4 hours.

Same as SPCM 435. See SPCM 435.

**COMM 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 college or consent of instructor.

**COMM 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 college or consent of instructor.

**COMM 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.

**COMM 470  Mind, Culture and Society**  credit: 3 OR 4 hours.

Same as ANTH 470, and LING 470. See ANTH 470.

**COMM 491  Literacy in the Info Age**  credit: 0 TO 4 hours.

Same as LIS 491. See LIS 491.

**COMM 512  History of Libraries**  credit: 2 OR 4 hours.

Same as LIS 512. See LIS 512.
COMM 520  Seminar Semantics  credit: 4 hours.
Same as PHIL 520. See PHIL 520.

COMM 524  Dev Psycholinguistics  credit: 2 OR 4 hours.
Same as LING 524, and PSYC 524. See PSYC 524.

COMM 525  Psycholinguistics  credit: 2 OR 4 hours.
Same as LING 525, and PSYC 525. See PSYC 525.

COMM 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. Prerequisite: Graduate standing or consent of instructor.

COMM 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.

COMM 568  Political Economy of Comm  credit: 4 hours.
Analyses 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 College of Communications.

COMM 570  Popular Culture  credit: 4 hours.
Examines problems of cultural analysis related to the media of communications and the social implications of communications research.

COMM 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 College of Communications.

COMM 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 College of Communications.

COMM 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.

COMM 574  Communications Systems  credit: 4 hours.
Analyses the structure and development of communications systems, the role of communication in social change, political movements, and formal organizations.

COMM 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.

COMM 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.

COMM 580  Advanced Interpretive Methods  credit: 4 hours.
Same as SOC 580. See SOC 580.

COMM 590  Special Topics  credit: 2 TO 8 hours.
May be repeated in the same or in multiple semesters, if topics vary.

COMM 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.

COMM 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.

COMM 599  **Thesis Research**  credit: 0 TO 16 hours.
May be repeated to a maximum of 16 hours. Approved for S/U grading only.
Coptic Studies

Classics
Chair: Kirk Freudenburg
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-1008
www.classics.uiuc.edu

COP 401  **Introductory Coptic I**  credit: 3 hours.
Introduction to the principles of Coptic grammar and to the reading of biblical and gnostic texts. Same as LING 414, and RLST 401. A knowledge of classical or koine Greek, though useful, is not required.

COP 402  **Introductory Coptic II**  credit: 3 hours.
Continuation of COP 401; reading of gnostic and postbiblical texts. Same as LING 415, and RLST 402. Prerequisite: COP 401.
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 Herbology  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 417 Crops and Society**  credit: 3 hours.

Interpretations of the role of crop plants in the development of culture and civilizations. Crops are described primarily in terms of their origins, evolution and influence on social and political institutions. Prerequisite: A general biology course and a general chemistry or physical science course, or the consent of the instructor.

**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 549. 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 465  **Ethics in Biotechnology**  credit: 3 hours.
Same as HORT 465. See HORT 465.

CPSC 475  **Insect Pathology**  credit: 4 hours.
Same as IB 483. See IB 483.

CPSC 477  **Biol Control of Insect Pests**  credit: 2 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 484  **Plant Physiology**  credit: 3 hours.
Same as IB 420. See IB 420.

CPSC 485  **Plant Physiology Laboratory**  credit: 4 hours.
Same as HORT 422, and IB 422. See IB 422.

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. 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: 4 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; aspects of multiple regression; use of SAS for all analyses. Prerequisite: CPSC 440 or equivalent.

CPSC 541  **Applied Statistical Methods III**  credit: 4 hours.
Design and analysis of complex experiments; considers combined, non-replicated, confounded and fractional factorials, lattices, mixed models, multivariate, response surface, and quality control design in terms of their characteristics and usefulness in biological and physical experiments. Analysis of actual experimental data with SAS software will be emphasized. Examples are drawn from numerous disciplines. Same as ANSC 541. Offered in alternate years. Prerequisite: CPSC 540 or equivalent.

CPSC 558  **Quantitative Plant Breeding**  credit: 4 hours.
Studied 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 Molecular Cytogenetics** credit: 4 hours.
This class 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 350, 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 ANSCI 445 or equivalent) and familiarity with SAS recommended.

**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 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. See ANSC 542.

**CPSC 585 Plant Biochemical Genetics** credit: 4 hours.
Describes the practice and uses of plant tissue culture in modern plant biology including callus, suspension, protoplasts, anther, embryo and organ culture and their use for basic and applied studies such as propagation, mutant selection, gene amplification, somaclonal variation and transformation. The plant biochemical genetics aspects encompass mutagenesis, mutant selection, mutant characterization and the use of genetic transformation to alter plant biochemistry. The mutations characterized will include photosynthesis, dwarf, viviparous, lipid, seed traits, blue fluorescent and herbicide resistant. A laboratory of three hours per week outside of the regular class time will be arranged for carrying out experimentation predominately with plant tissue culture. Prerequisite: CPSC 352 or MCB 350, or equivalent.

**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, grantmanship 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. Instructor Approval Required.

**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.
CS 100  Freshman Orientation in CS  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 to Computing, Eng & 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. Credit is not given for both CS 101 and either CS 105 or CS 110 section C. Prerequisite: MATH 220.

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

CS 105  Intro to Computing, Non-Tech  credit: 3 hours.
Introduction to computing as an essential tool of academic and professional activities in disciplines other than science and engineering. 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. Students interested in scientific and engineering applications of computing should take CS 101 instead of this course. Prerequisite: MATH 012 or equivalent. Credit is not given for both CS 105 and CS 101.

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

CS 110  Programming Laboratory  credit: 1 hours.
Practical laboratory course in the methods used and skills required for writing and maintaining well-structured software. Extensive practice with a programming language is provided. 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 any given language more than once. (That is, a given section may be taken only 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, or CS 125; or consent of instructor. It is recommended that students enrolling in CS 110 section CP have prior C programming experience or credit for CS 110 section C.

CS 125  Intro to Computer Science  credit: 4 hours.
First course for computer science majors and other students with a deep interest in computing. The course introduces students to basic concepts in computing and fundamental techniques for solving computational problems. 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.
Studies 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 Course in CS  credit: 1 hours.
Course is offered for honors credit in conjunction with other 100-level computer science courses, in which concurrent registration is required. Enrollment is strictly limited to beginning students with superior talents in computer science. 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); or consent of instructor.

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

CS 210  Ethical & Prof’l Issues in CS  credit: 2 hours.
Ethics for the computing profession. Ethical decision-making; licensing; intellectual property, freedom of information, and privacy. Students will be required to make oral presentations. Credit is not given for both CS 210 and ECE 316. Prerequisite: CS 225 and junior standing.

CS 225  Data Structure & Softw Prin  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; or consent of instructor.

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: 3 hours.
Introduction to systems programming: This course will cover 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. Prerequisite: CS 225; CS 231; 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 257  Numerical Methods  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 257. Students with earned credit in CS 450 may not receive additional credit for CS 257 or MATH 257. (Counts for advanced hours in LAS.) Prerequisite: A 100-level computer science course; MATH 225 or MATH 415; MATH 242 or MATH 243.

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

CS 273  Intro to 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; computational complexity and NP-completeness. Prerequisite: CS 125 and either CS 173 or MATH 213.

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

CS 296  Honors Course in CS  credit: 1 hours.
Group projects for honors work in computer science. Sections of this course are offered in conjunction with other 200-level computer science courses, in which concurrent registration is required. 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); or consent of instructor.

CS 397  Individual Study  credit: 1 TO 3 hours.
May be repeated. Prerequisite: 100-level computer science course; consent of instructor.

CS 398  Special Topics in CS  credit: 2 TO 4 hours.
Lecture course in topics of current interest. See Schedule for current topics. May be repeated. Prerequisite: As specified for each topic offering; see Schedule or departmental course description.
CS 400  Data Structures, Non-CS Majors  credit: 4 hours.
Course integrates software engineering principles with data structures implemented in C++. While prior experience with either C, C++ or Java is assumed, C++ will be taught in the first three weeks of the course. Software engineering will be covered 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. Same as CSE 400. Credit is not given for both CS 400 and CS 225. Computer Science and Computer Engineering majors may not receive credit for CS 400. Prerequisite: CS 101 or consent of instructor.

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 or consent of instructor.

CS 412  Intro Data Mining  credit: 3 OR 4 hours.
Introduction to the concepts, techniques, and systems of data warehousing and data mining, including (1) design and implementation of data warehouse and on-line analytical processing (OLAP) systems; and (2) data mining concepts, methods, systems, implementations, and applications. 3 undergraduate hours. 4 graduate hours. Prerequisite: CS 225 or CS 500; or consent of instructor.

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 CS 423.

CS 417  Computer-Assisted Instruction  credit: 4 hours.
Same as CI 435. See CI 435.

CS 418  Computer Graphics  credit: 3 OR 4 hours.
Introduction to basic mathematical tools and computational techniques for modeling, rendering, and animating 3-D scenes. Same as CSE 427. 3 or 4 graduate hours. Prerequisite: CS 225 or CS 400; MATH 225 or MATH 415; MATH 242 or MATH 243.

CS 419  Advanced Comp 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 or 4 graduate hours. Prerequisite: CS 418.

CS 420  Intro to Parallel Programming  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 or 4 graduate hours. Prerequisite: CS 400 or CS 225; or advanced programming experience.

CS 421  Programming Lang and 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 or 4 graduate hours. Prerequisite: CS 225; CS 232 or ECE 390.

CS 422  Programming Language Design  credit: 3 OR 4 hours.
Advanced course in principles of language design. Using imperative and functional programming as unifying themes, major language design paradigms will be explored. Tools in this study will include both practical language processor construction and theoretical models. Emphasis will be on reasoning about programs and languages. 3 or 4 graduate hours. Prerequisite: CS 421.

CS 423  Operating Systems Design  credit: 3 OR 4 hours.
The 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.

**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.
Covers topics needed for a basic understanding of distributed computer systems: 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.

**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. Prerequisite: CS 225 and CS 273; or consent of instructor.

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

**CS 428 Software Engineering, II**  credit: 3 OR 4 hours.
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.
Course is identical to CS 428 except for the additional writing component. See CS 428. Prerequisite: CS 427 Software Engineering, I.

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

**CS 431 Embedded Sys Arch and Software**  credit: 0 TO 4 hours.
Survey of sampled data systems and embedded architecture; overview of the 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 only. 3 or 4 graduate hours only. Prerequisite: CS 241 or CS 243.

**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 or ECE 390.

**CS 435 Intro VLSI System Design**  credit: 3 hours.
Same as CSE 433 and ECE 425. See ECE 425.

**CS 437 VLSI System and Logic Design**  credit: 3 OR 4 hours.
Computer system design of VLSI chips with emphasis on logic design. Overview of VLSI technology; detailed discussion of recent integrated circuit logic families; types of memories and contemporary logic design methods based on them, including various custom design approaches; automated logic synthesizers; Binary Decision Diagrams; Field Programmable Gate Arrays; hardware/software realization of algorithms; and hardware/software tradeoffs for improving system performance and lowering costs. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 231 or ECE 290 or consent of instructor.

**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; one of MATH 461, MATH 463, ECE 413.
CS 440  **Intro Artificial Intelligence**  credit: 3 OR 4 hours.
Introductory description of the major subjects and directions of research in artificial intelligence; topics include 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 390; or consent of instructor.

CS 443  **Introduction to Robotics**  credit: 4 hours.
Same as ECE 470, GE 421, and ME 445. See ECE 470.

CS 446  **Machine Learning & Pattern Rec**  credit: 3 OR 4 hours.
Organized review of basic theoretical concepts and methods of machine learning and recognition; decision space and linguistic and relational representation of objects; statistical and deterministic recognition algorithms; various types of learning, including adaptive, procedural, and inductive; selected applications; and medical consulting, determination of cost-optimal classification rules, inferential information systems, and computer vision. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 273 and CS 440.

CS 450  **Intro to 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. Prerequisite: CS 101 or CS 125; CS 257 or MATH 415; one of MATH 385, MATH 386, MATH 441; or consent of instructor.

CS 455  **Numerical Methods for PDEs**  credit: 3 OR 4 hours.
Introduction to numerical techniques for initial and boundary value problems in partial differential equations; includes 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 411, and MATH 455. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 257; one of MATH 380, MATH 385, MATH 386, MATH 441.

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 or consent of instructor.

CS 459  **Numerical Approx and ODEs**  credit: 3 OR 4 hours.
Polynomial and spline interpolation; least squares and uniform approximation; numerical differentiation and integration; initial-value and boundary-value problems in ordinary differential equations. Same as CSE 413, and MATH 459. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 257; one of MATH 385, MATH 386, MATH 441; or consent of instructor.

CS 462  **Logic Design**  credit: 3 hours.
Same as ECE 462 and MATH 491. See ECE 462.

CS 465  **Princ of User Interface Design**  credit: 3 OR 4 hours.
This is a project-focused course that covers fundamental principles of user interface design, implementation, and evaluation. Students work in small teams 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; and implementation of the final prototype. Students from non-technical disciplines 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; or consent of instructor.

CS 473  **Algorithms**  credit: 3 OR 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 273; or consent of instructor.

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 273 or consent of instructor.

CS 476  **Program Verification**  credit: 3 OR 4 hours.
Examines formal methods for demonstrating correctness and other properties of programs; includes an overview of predicate calculus. Topics include: invariant assertions, Hoare axiomatics, well-founded orderings for proving termination, structural induction,
computational induction, data structures, and parallel programs. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 225; CS 273 or MATH 414.

**CS 477  Formal Software Dev 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 273 or MATH 414.

**CS 484  Computer Data Acquisition Sys**  credit: 3 OR 4 hours.
Theory, operation, and design of computer data acquisition systems; analog and digital aspects, conversions between representations, interfacing and systems considerations. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: CS 231 or ECE 290; ECE 205 or ECE 440.

**CS 491  Seminar in Computer Science**  credit: 0 TO 4 hours.
Seminar course for advanced undergraduate and graduate students. Topics will vary. Approved for S/U grading only. May be repeated to a maximum of 4 hours. May be repeated if topics vary. Prerequisite: Varies with course topic; consent of instructor.

**CS 492  Senior Project in CS, 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. Students must enroll for a two term sequence, CS 492 and either CS 493 or CS 494. 3 undergraduate hours. Credit is not given for both CS 492 and a project course in another engineering department for the same project. Prerequisite: Senior standing in CS or consent of instructor.

**CS 493  Senior Project in CS II, ACP**  credit: 3 hours.
Course is identical to CS 494 except for the additional writing component. See CS 494. 3 undergraduate hours. Students must enroll for a two term sequence, 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 in CS II**  credit: 3 hours.
Continuation 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. 3 undergraduate hours. Students must enroll for a two term sequence, CS 492 and either CS 493 or CS 494. 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 in CS**  credit: 0 TO 4 hours.
Lectures in topics of current interest. See Schedule for current topics. May be repeated. Prerequisite: As specified for each topic offering, see Schedule or departmental course description.

**CS 499  Senior Thesis in CS**  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  Adv Database Mgt Systems**  credit: 4 hours.
Advanced concepts in database management system design and implementation, and an introduction to the major recent developments in the field. Topics include the relational roots, distributed and parallel databases, object databases and extensibility, semi-structured data and XML, web research, benchmarks, and current directions in the field. Prerequisite: CS 411.

**CS 512  Data Mining Principles**  credit: 4 hours.
Advanced course on principles and algorithms of data mining. Topics include 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; and research frontiers. Prerequisite: CS 412 or consent of instructor.

**CS 519  Scientific Visualization**  credit: 4 hours.
Detailed study of visualization techniques useful in analysis of engineering and scientific data. Topics include study of 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; and interactive steering. Same as CSE 418. Prerequisite: CS 418.

CS 522 **Programming Language Semantics** credit: 4 hours. 
Topics in 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. Topics include: 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; or consent of instructor.

CS 524 **Concurrent Prog Lang and Sys** credit: 4 hours. 
Introduction to the theory of concurrency and concurrent programming languages. Topics include formal models of concurrent computation such as process algebras, nets and actors; high level concurrent programming languages and their operational semantics; and methods for reasoning about correctness and complexity of concurrent programs. Prerequisite: CS 422; CS 475 or CS 476.

CS 526 **Adv Topics in Compiler Constr** credit: 4 hours. 
Advanced topics in compiler construction, including incremental and interactive compiling, error correction, code optimization, models of code generators, etc. Same as CSE 526. Prerequisite: CS 426.

CS 527 **Adv Topics in Software Eng** credit: 4 hours. 
Advanced topics in software engineering, including fault-tolerant software, software architecture, software patterns, multi-media software, and knowledge-based approaches to software engineering. Course also includes a number of case studies. Same as CSE 529. Prerequisite: CS 428 or CS 429 or consent of instructor.

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; and overall computer system ideas. Same as CSE 522 and ECE 533. Prerequisite: Consent of instructor.

CS 536 **Design Fault-Tolerant Dig Syst** credit: 4 hours. 
Same as ECE 542. See ECE 542.

CS 541 **Computer Systems Analysis** credit: 4 hours. 
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 CSE 524 and ECE 541. Prerequisite: MATH 461 or MATH 463; ECE 413 or equivalent.

CS 542 **Artificial Neural Networks** credit: 4 hours. 
Comprehensive treatment of neural network architectures and learning algorithms balanced with theory and application examples. Prerequisite: CS 440; one of MATH 385, MATH 386, MATH 441; MATH 415; or consent of instructor.

CS 543 **Computer Vision** credit: 4 hours. 
Same as ECE 549. See ECE 549.

CS 545 **Systems Modeling & Simulation** credit: 4 hours. 
Same as BADM 575. See BADM 575.

CS 548 **Comp Models of Cognitive Proc** 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; and 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 550 **Iterative & Multigrid Solvrs** credit: 4 hours.
A comprehensive treatment of algebraic and multigrid iterative solvers for systems of equations, primarily linear equations arising from discretization of partial differential equations. Same as CSE 511. Prerequisite: CS 450 or consent of instructor.

**CS 554 Parallel Numerical Algorithms**  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 455, CS 458, or CS 459; or consent of instructor.

**CS 558 Topics in Numerical Analysis**  credit: 4 hours.
Same as CSE 513. May be repeated. Prerequisite: Consent of instructor.

**CS 565 Topics in Human-comp Interact**  credit: 4 hours.
This course provides 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 bimannual input, and usability evaluation techniques. The class meetings will consist of traditional classroom lectures along with group discussions. In the course, students will complete a research-oriented semester project of their choosing. Prerequisite: CS 465 or consent of instructor.

**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). Topics include complexes, subdivisions, Delaunay triangulations, randomized algorithms, homology groups, splines and surfaces. Same as CSE 514. Prerequisite: CS 473 or consent of instructor.

**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; topics include sorting, searching, selection, polynomial evaluation, matrix multiplication, and multiplication of real numbers. Same as CSE 515. May be repeated. Prerequisite: CS 473 or consent of instructor.

**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. Prerequisite: Consent of instructor.

**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.
Same as ECE 579 and MATH 578. See ECE 579.

**CS 591 Advanced Seminar in CS**  credit: 0 TO 4 hours.
Seminar on topics of current interest. Subjects will be announced in the Schedule. Approved for both letter and S/U grading. May be repeated in the same or subsequent terms as topics vary. Prerequisite: Consent of instructor.

**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 in CS**  credit: 2 TO 4 hours.
Lecture course in topics of current interest. See Schedule for current topics. May be repeated. Prerequisite: As specified for each topic offering, see Schedule or departmental course description.

**CS 599 Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only. Prerequisite: Consent of instructor.
CSE 400  Data Structures, Non-CS Majors  credit: 4 hours.
Same as CS 400. See CS 400.

CSE 401  Intro to Numerical Analysis  credit: 3 OR 4 hours.
Same as CS 450, ECE 491, and MATH 450. See CS 450.

CSE 402  Intro to Parallel Programming  credit: 3 OR 4 hours.
Same as CS 420 and ECE 492. See CS 420.

CSE 411  Numerical Methods for PDEs  credit: 3 OR 4 hours.
Same as CS 455 and MATH 455. See CS 455.

CSE 412  Numerical Linear Algebra  credit: 3 OR 4 hours.
Same as CS 458, and MATH 458. See CS 458.

CSE 413  Numerical Approx and ODEs  credit: 3 OR 4 hours.
Same as CS 459 and MATH 459. See CS 459.

CSE 414  Algorithms  credit: 3 OR 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  Computer Graphics  credit: 3 OR 4 hours.
Same as CS 418. See CS 418.

CSE 428  Advanced Comp 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 VLSI System Design  credit: 3 hours.
Same as CS 435 and ECE 425. See ECE 425.
<table>
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<tr>
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<th>Course Title</th>
<th>Credit Hours</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>CSE 441</td>
<td>Introduction to Optimization</td>
<td>3 OR 4</td>
<td>Same as ECE 490. See ECE 490.</td>
</tr>
<tr>
<td>CSE 450</td>
<td>Computational Mechanics</td>
<td>3 OR 4</td>
<td>Same as TAM 470. See TAM 470.</td>
</tr>
<tr>
<td>CSE 451</td>
<td>Intro to Finite Element Anlys</td>
<td>3 OR 4</td>
<td>Same as AE 420 and ME 471. See ME 471.</td>
</tr>
<tr>
<td>CSE 461</td>
<td>Computational Aerodynamics</td>
<td>3 OR 4</td>
<td>Same as AE 410. See AE 410.</td>
</tr>
<tr>
<td>CSE 462</td>
<td>Safety Anlys Nucl Reactor Sys</td>
<td>3 OR 4</td>
<td>Same as NPRE 457. See NPRE 457.</td>
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<tr>
<td>CSE 472</td>
<td>Phys and Soc Sci Simulation</td>
<td>3</td>
<td>Same as ECON 474 and MSE 482. See MSE 482.</td>
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<tr>
<td>CSE 485</td>
<td>Atomic Scale Simulations</td>
<td>3 OR 4</td>
<td>Same as MSE 485 and PHYS 466. See MSE 485.</td>
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<tr>
<td>CSE 491</td>
<td>Computer Methods</td>
<td>3 OR 4</td>
<td>Same as CEE 490. See CEE 490.</td>
</tr>
<tr>
<td>CSE 511</td>
<td>Iterative &amp; Multigrid Solvrs</td>
<td>4</td>
<td>Same as CS 550. See CS 550.</td>
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<tr>
<td>CSE 512</td>
<td>Parallel Numerical Algorithms</td>
<td>4</td>
<td>Same as CS 554. See CS 554.</td>
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<tr>
<td>CSE 513</td>
<td>Topics in Numerical Analysis</td>
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<td>Same as CS 558. See CS 558.</td>
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<tr>
<td>CSE 514</td>
<td>Mesh Generation</td>
<td>4</td>
<td>Same as CS 570. See CS 570.</td>
</tr>
<tr>
<td>CSE 515</td>
<td>Topics in Algorithms</td>
<td>4</td>
<td>Same as CS 573. See CS 573.</td>
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<td>CSE 517</td>
<td>Adv Finite Element Methods</td>
<td>4</td>
<td>Same as TAM 574. See TAM 574.</td>
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<tr>
<td>CSE 521</td>
<td>Computer Architecture</td>
<td>4</td>
<td>Same as ECE 511. See ECE 511.</td>
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<td>CSE 522</td>
<td>Parallel Computer Architecture</td>
<td>4</td>
<td>Same as CS 533 and ECE 533. See CS 533.</td>
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<td>CSE 523</td>
<td>Advanced Operating Systems</td>
<td>4</td>
<td>Same as CS 523. See CS 523.</td>
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<td>CSE 524</td>
<td>Computer Systems Analysis</td>
<td>4</td>
<td>Same as CS 541 and ECE 541. See CS 541.</td>
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<td>CSE 526</td>
<td>Adv Topics in Compiler Constr</td>
<td>4</td>
<td>Same as CS 526. See CS 526.</td>
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<tr>
<td>CSE 527</td>
<td>Scientific Visualization</td>
<td>4</td>
<td>Same as CS 519. See CS 519.</td>
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<td>CSE 528</td>
<td>Computer Microarchitecture</td>
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<td>Same as ECE 512. See ECE 512.</td>
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<td>CSE 529</td>
<td>Adv Topics in Software Eng</td>
<td>4 hours</td>
<td>Same as CS 527. See CS 527.</td>
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<tr>
<td>CSE 530</td>
<td>Computational Electromagnetics</td>
<td>4 hours</td>
<td>Same as ECE 540. See ECE 540.</td>
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<td>CSE 532</td>
<td>Numerical Circuit Analysis</td>
<td>4 hours</td>
<td>Same as ECE 552. See ECE 552.</td>
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<td>CSE 534</td>
<td>Adv Theory Semicond &amp; Devices</td>
<td>4 hours</td>
<td>Same as ECE 539. See ECE 539.</td>
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<td>CSE 542</td>
<td>Digital Signal Processing II</td>
<td>4 hours</td>
<td>Same as ECE 551. See ECE 551.</td>
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<tr>
<td>CSE 543</td>
<td>Topics in Image Processing</td>
<td>4 hours</td>
<td>Same as ECE 547. See ECE 547.</td>
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<tr>
<td>CSE 544</td>
<td>Power System Dyn &amp; Stability</td>
<td>4 hours</td>
<td>Same as ECE 576. See ECE 576.</td>
</tr>
<tr>
<td>CSE 545</td>
<td>Power System Control</td>
<td>4 hours</td>
<td>Same as ECE 573. See ECE 573.</td>
</tr>
<tr>
<td>CSE 551</td>
<td>Finite Element Methods</td>
<td>4 hours</td>
<td>Same as CEE 570. See CEE 570.</td>
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<tr>
<td>CSE 560</td>
<td>Computational Fluid Mechanics</td>
<td>4 hours</td>
<td>Same as TAM 570. See TAM 570.</td>
</tr>
<tr>
<td>CSE 561</td>
<td>Computational Process Modeling</td>
<td>4 hours</td>
<td>Same as ME 554. See ME 554.</td>
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<tr>
<td>CSE 564</td>
<td>Surface Water Quality Modeling</td>
<td>4 hours</td>
<td>Same as CEE 534. See CEE 534.</td>
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<tr>
<td>CSE 565</td>
<td>Groundwater Modeling</td>
<td>4 hours</td>
<td>Same as CEE 557. See CEE 557.</td>
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<td>CSE 566</td>
<td>Numerical Fluid Dynamics</td>
<td>4 hours</td>
<td>Same as ATMS 502 and CS 505. See ATMS 502.</td>
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<td>CSE 567</td>
<td>Dynamical Weather Prediction</td>
<td>4 hours</td>
<td>Same as ATMS 503. See ATMS 503.</td>
</tr>
<tr>
<td>CSE 568</td>
<td>Global Atmospheric Modeling</td>
<td>4 hours</td>
<td>Same as ATMS 530. See ATMS 530.</td>
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</table>
Creative Writing

English
Head of Department: Martin J. Camargo
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 204 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 Editing Practicum  credit: 0 TO 4 hours.
May be repeated up 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.
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.
Comparative and World Literature

Comparative and World Literature
Director of Program: Nancy Blake
Program Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-4987
www.complit.uiuc.edu

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: Non-Western Cultures
UIUC: Literature and the Arts
UIUC: Western Composition

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 155  French Masterpieces in Trans credit: 3 hours.
Same as FR 155. See FR 155.

CWL 189  Classics Non-West Culture I credit: 3 hours.
Analysis of representative works from the Middle East and Asia through the seventeenth century, portraying literary, philosophical and religious achievements of the Islamic, Hindu, Buddhist and Confucian traditions, and emphasizing comparative perspectives both within the range of non-Western traditions and in juxtaposition to Western thinking. All readings in English.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

CWL 190  Classics Non-West Culture II credit: 3 hours.
Analysis of representative works from the Middle East and Asia of the eighteenth to twentieth centuries, portraying literary, philosophical and religious achievements of the Islamic, Hindu, Buddhist and Confucian traditions and emphasizing comparative perspectives both within the range of non-Western traditions and in juxtaposition to Western thinking. 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 up to 1 time(s). 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 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: Non-Western Cultures
UIUC: Literature and the Arts

CWL 213  African Oral Literature  credit: 3 hours.
Same as AFST 213, and ANTH 213. See AFST 213.

CWL 215  Scandinavian Prose Fiction  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:
CWL 222  Intro to Francophone Lit  credit: 3 hours.
Same as FR 219.

CWL 223  Qur'an Structure and Exegesis  credit: 3 hours.
Same as RLST 223. See RLST 223.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Non-Western Cultures

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 & Renais  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  Masterpieces West Culture I  credit: 3 hours.
Comparative study of selected works reflecting main currents of western literature and thought, such as biblical stories, Homer, Greek drama, Vergil, medieval romance and love lyrics, Dante, Boccaccio, Chaucer, Petrarch, Rabelais, Cervantes, 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 Comparv Cult
UIUC: Advanced Composition

CWL 242  Masterpieces West Culture II  credit: 3 hours.
Comparative study of selected works reflecting main currents of western literature and thought, such as Moliere, Voltaire, Swift, Goethe, romantic lyrics, Melville, Flaubert, Dostoevsky, Ibsen, Joyce, Kafka, and Camus. 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 Comparv Cult
UIUC: Advanced Composition

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:
UIUC: US Minority Culture(s)

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 Compartv 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 Compartv 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

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 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

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: Literature and the Arts
UIUC: Non-Western Cultures

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: Non-Western Cultures
UIUC: Literature and the Arts

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: Non-Western Cultures
UIUC: Literature and the Arts

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: Literature and the Arts
UIUC: Non-Western Cultures

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.
Same as CLCV 323. See CLCV 323.

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

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 344  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 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 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  Afro-Diasporic Lit in 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.
Same as EALC 413, and THEA 488. See EALC 413.

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 475 Women and Society in Scan Lit credit: 3 hours.
Same as GWS 475, and SCAN 475. See SCAN 475.

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 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 Same as MDVL 551. 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: 3 OR 4 hours.**  
Same as RUSS 576. See RUSS 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.**  
(C LIT 493)

**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. May be repeated to a maximum of 8 graduate hours. Approved for S/U grading only.
Czech

Slavic Languages and Literature
Head of Department: Harriet Murav
Department Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-0680

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 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 hours.
Reading and analysis of selected texts. Prerequisite: CZECH 483, or consent of instructor.
Dance

Interim Head of Department: Rebecca Nettl-Fiol
Department Office: 907 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).
DANC 150  Orientation to Dance  credit: 2 hours.
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.

DANC 160  Beginning Modern Tech Core  credit: 1 TO 3 hours.
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.

DANC 161  Beginning Modern Tech Elect  credit: 1 TO 3 hours.
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. May be repeated to a maximum of 18 hours. Prerequisite: Major standing in Dance or consent of instructor.

DANC 162  Improvisation I  credit: 1 hours.
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.

DANC 163  Improvisation II  credit: 1 hours.
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

DANC 166  Beginning Ballet Tech Core  credit: 1 OR 2 hours.
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.

DANC 167  Beginning Ballet Tech Elect  credit: 1 OR 2 hours.
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.

DANC 175  Production in Dance  credit: 2 hours.
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.

DANC 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated to a maximum of 9 hours.

DANC 220  Perf Pract Student Works I  credit: 1 TO 3 hours.
Performance laboratory involving the rehearsal and performance of student works under faculty supervision. Approved for S/U grading only. Prerequisite: Consent of instructor, maximum of 16 hours of performance credit may be counted toward degree requirements.

DANC 221  Perf Pract I  credit: 1 TO 3 hours.
Performance laboratory involving the rehearsal and performance of student works under faculty supervision performed in MFA Thesis concert. Prerequisite: Consent of instructor, maximum of 16 hours of performance credit may be counted toward degree requirements.

DANC 222  Perf Pract November I  credit: 1 TO 3 hours.
Performance laboratory involving the rehearsal and performance of works by faculty and visiting artists performed in November Playhouse Dance. Prerequisite: Consent of instructor, maximum of 16 hours of performance credit may be counted toward degree requirements.

DANC 223  Perf Pract Festival I  credit: 1 TO 3 hours.
Performance laboratory involving the rehearsal and performance of works by faculty and visiting artists performed in Festival Dance. Prerequisite: Consent of instructor, maximum of 16 hours of performance credit may be counted toward degree requirements.

DANC 231  Production Practicum II  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).

DANC 232  Lec Dem in the Community  credit: 1 OR 2 hours.
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.

DANC 260  Intermediate Modern Tech Core  credit: 1 TO 3 hours.
Progressive development of the concepts in DANC 160 and 161, with emphasis on the qualitative and definitive performance of a variety of technical styles. May be repeated to a maximum of 18 hours. Prerequisite: Major standing in Dance or consent of instructor; or departmental placement.

DANC 261  Intermediate Modern Tech Elect  credit: 1 TO 3 hours.
Progressive development of the concepts in DANC 160 and 161, with emphasis on the qualitative and definitive performance of a variety of technical styles. May be repeated to a maximum of 18 hours. Prerequisite: Major standing in Dance or consent of instructor or departmental placement.

DANC 262  Composition I  credit: 2 hours.
Theory and practice in principles of dance composition; emphasis on solo creative work using various approaches to composition. Prerequisite: DANC 163 or consent of instructor.

DANC 263  Composition II  credit: 2 hours.
Experience in choreographing a minimum of one solo and two small group works utilizing various approaches to choreographic form. Prerequisite: DANC 262 or consent of instructor.

DANC 266  Intermediate Ballet Tech Core  credit: 1 OR 2 hours.
Intermediate ballet for dance majors; a progressive development of movement concepts and vocabulary in DANC 166 and DANC 167, with emphasis on technical development and extended movement combinations. May be repeated to a maximum of 8 hours. Prerequisite: Major standing in Dance or consent of instructor; or departmental placement.

DANC 267  Intermediate Ballet Tech Elect  credit: 1 OR 2 hours.
Intermediate ballet for dance majors; a progressive development of movement concepts and vocabulary in DANC 166 and DANC 167, with emphasis on technical development and extended movement combinations. May be repeated to a maximum of 8 hours. Prerequisite: Major standing in Dance or consent of instructor; or departmental placement.

DANC 268  Music Theory for Dancers  credit: 3 hours.
Introduction to basic music theory with a concentration on rhythm. The first half of the term will concentrate on 1) learning, understanding, and being conversant in basic music parameters; 2) analytical listening; 3) notation; 4) transcripts; 5) reading notation/following a score; 6) performance of simple rhythm patterns. The second half will deal with form and formal analysis as it relates to choreography, as well as more advanced parameters of music theory. Prerequisite: Major standing in Dance or consent of instructor.

DANC 269  Music Literature for Dancers  credit: 3 hours.
Basic analysis of representative pieces from the Renaissance, Baroque, Classical, Romantic, and Modern periods, emphasizing music of the twentieth century. Students learn to recognize general stylistic characteristics of each period and to understand dance forms related to the music. Prerequisite: DANC 268 or equivalent, or consent of instructor.

DANC 331  Production Practicum III  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, DANC 231 or equivalent, and consent of instructor.

DANC 340  Dancing Black Popular Cult  credit: 3 hours.
Introduces students to black dance aesthetics and its interconnectedness with American popular culture. By exploring its cultural, political and historical roots, coupled with theoretical concepts of "the popular" and ties to the vernacular, the course will be organized around significant markers that have shaped black dance's development. Same as AFRO 340.

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

DANC 350  Creative Dance for Children  credit: 3 hours.
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. May be repeated to a maximum of 4 hours. Approved for S/U grading only.

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. May be repeated to a maximum of 16 hours. Approved for S/U grading only. 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. 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.
Survey of Dance from its beginning in primitive societies through the early Nineteenth century. 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 permission of the 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 447 Labanotation I**  credit: 3 OR 4 hours.
Fundamentals of Labanotation, including theory, reading, and writing; introduction to effort/shape analysis. 3 undergraduate hours. 4 graduate hours. Prerequisite: DANC 260 or DANC 261 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 and 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. 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 Choreo for the Video Camera**  credit: 2 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. May be repeated to a maximum of 3 hours. 1 to 3 undergraduate hours. No graduate credit. 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. Approved for both letter and S/U grading. 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. Approved for both letter and S/U grading. 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. Prerequisite: DANC 440. This course may not be repeated for credit.

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 599  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.
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. This course does not fulfill the campus foreign language requirement. Approved for both letter and S/U grading.

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
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 281  Chinese Culture and Society  credit: 3 hours.
Same as ANTH 281. See ANTH 281.

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EALC 305</td>
<td>Japan Lit in Translation I</td>
<td>3</td>
<td>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</td>
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<tr>
<td>EALC 306</td>
<td>Japan Lit in Translation II</td>
<td>3</td>
<td>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: Non-Western Cultures UIUC: Literature and the Arts</td>
</tr>
<tr>
<td>EALC 307</td>
<td>Classical Chinese Lit</td>
<td>3</td>
<td>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</td>
</tr>
<tr>
<td>EALC 308</td>
<td>Chinese Popular Lit</td>
<td>3</td>
<td>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: Non-Western Cultures UIUC: Literature and the Arts</td>
</tr>
<tr>
<td>EALC 316</td>
<td>Chinese Classics Through Film</td>
<td>3</td>
<td>Introduces students to an array of Chinese literary classics with the aid of films. It entails the close reading of classics such as Confucius’ Analects, Daoist classics of Lao Zi and Zhuang Zi, the Buddhist Platform Sutra, Tang Poetry, a Yuan novel, the drama Peony Pavilion, and several Ming-Qing novels.</td>
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<tr>
<td>EALC 318</td>
<td>Japanese Hero Types</td>
<td>3</td>
<td>Analysis of Japanese hero and heroine archetypes in comparison with their Western counterparts: from shaman ruler, Don Juan, samurai romantic, and feudal paragons to modern superfluous hero and self-destructive hollow man. Discussion with readings and films. Same as CWL 318. No knowledge of Japanese required.</td>
</tr>
<tr>
<td>EALC 319</td>
<td>Women in Japanese Lit</td>
<td>3</td>
<td>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</td>
</tr>
<tr>
<td>EALC 343</td>
<td>Gov &amp; Pol of China</td>
<td>3</td>
<td>Same as PS 343. See PS 343.</td>
</tr>
<tr>
<td>EALC 344</td>
<td>Gov &amp; Pol of Japan</td>
<td>3</td>
<td>Same as PS 344. See PS 344.</td>
</tr>
<tr>
<td>EALC 361</td>
<td>Women in East Asia</td>
<td>3</td>
<td>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</td>
</tr>
</tbody>
</table>
UIUC Social Sciences

EALC 362  **Popular Culture China & Japan**  credit: 3 hours.
Introduction to the popular cultural traditions of China and Japan; examines popular morality, cosmology, religion, secret societies, the "way of the samurai," body and health (acupuncture, meditation, Zen, T'ai-chi chuan), aesthetics (poetry, painting, tea ceremony), and the world of the courtesan using a variety of documentary, fictional, and visual sources.

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

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 392  **Chinese Foreign Policy**  credit: 3 hours.
Same as PS 392. See PS 392.

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 422 **Classical Japanese Poetry** credit: 3 hours.
Surveys Japanese poetry from early times (7th c.) to the early modern period (19th c.), from choka and tanka, through various linked verse forms, and up to haiku, which is practiced popularly even today. Topics include poetic technique, social context, and the presence of poetry in other literary kinds. Main texts are poetry collections and narratives in English translation. Same as CWL 422. Requires no knowledge of Japanese. Prerequisite: EALC 275, EALC 305, EALC 306, or equivalent, or consent of instructor.

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 433 **Language in Japanese Society** credit: 3 OR 4 hours.
Examines aspects of language use in contemporary Japanese society, including cross-cultural communication, social/regional variations, and problems surrounding linguistic/ethic minorities in Japanese society. Requires no knowledge of Japanese. 3 undergraduate hours. 4 graduate hours. Approved for both letter and S/U grading. Prerequisite: Junior standing or consent of instructor.

EALC 436 **Japanese Syntax** credit: 3 OR 4 hours.
Course aims to provide advanced students of Japanese with a basic knowledge of syntactic characteristics of Japanese. By reading some classic literature along with more current work, we critically examine the analyses of a particular syntactic phenomenon in Japanese. 3 undergraduate hours. 4 graduate hours. May be repeated to a maximum of 6 undergraduate hours, or 8 graduate hours. Prerequisite: Two years of modern Japanese language for undergraduate students; LING 400 or LING 430 for graduate students.

EALC 450 **East Asian Research Methods** credit: 2 OR 4 hours.
Introduces research methods and reference works for East Asian studies through practical exercises and assignments. Students registering for 2 hours (Part I) use only Western sources; students registering for 4 hours (Parts I and II), use Chinese or Japanese sources for the second part of the course.

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 462, 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 466  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 483  Contemporary Japan  credit: 3 OR 4 hours.
Same as ANTH 483. See ANTH 483.

EALC 484  Buddhist Meditation  credit: 3 hours.
Same as RLST 484. See RLST 484.

EALC 485  Family and Gender in China  credit: 3 OR 4 hours.
Same as ANTH 485. See ANTH 485.

EALC 487  Ethnicity in China  credit: 3 OR 4 hours.
Same as ANTH 487. See ANTH 487.

EALC 490  Individual Study  credit: 2 TO 12 hours.
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.

EALC 495  Topics in Asian Religions  credit: 3 OR 4 hours.
Same as RLST 495. See RLST 495.

EALC 500  Proseminar in EALC  credit: 4 hours.
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.

EALC 501  Seminar in Chinese Art  credit: 4 hours.
Same as ARTH 501. See ARTH 501.

EALC 520  Problems in Chinese History  credit: 4 hours.
Same as HIST 520. See HIST 520.

EALC 521  Seminar in Chinese Literature  credit: 4 hours.
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.
EALC 522  **Seminar in Chinese History**  credit: 4 hours.
Same as HIST 521. See HIST 521.

EALC 526  **Problems in Japanese History**  credit: 4 hours.
Same as HIST 526. See HIST 526.

EALC 527  **Seminar in Japanese History**  credit: 4 hours.
Same as HIST 527. See HIST 527.

EALC 531  **Seminar in Japanese Lit**  credit: 4 hours.
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.

EALC 550  **Seminar in EALC**  credit: 4 hours.
Seminar on selected topics. Topic varies with instructor. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

EALC 560  **East Asian Language Pedagogy**  credit: 4 hours.
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 enroll only with consent of instructor, and the Graduate College. Prerequisite: Native or near-native fluency in Japan, Chinese, or Korean.

EALC 562  **Topics in Korean History**  credit: 4 hours.
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.

EALC 575  **Problems in Japanese Society**  credit: 4 hours.
Introduction to social, cultural, and intellectual issues that have shaped modern Japan. A variety of methodologies are employed, including those of intellectual history, anthropology, and literary criticism. May be repeated in same or subsequent terms as topics vary to a maximum of 12 hours. Prerequisite: A reading knowledge of Japanese or consent of instructor.

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, 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 Tech  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 students enrolled in Electrical or Computer Engineering.
This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences

ECE 110  Intro Elec & Comp Engng  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 registration in MATH 220.

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. Credit is not given for both ECE 190 and CS 125.

ECE 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated. Approved for both letter and S/U grading.

ECE 200  Seminar  credit: 0 hours.
Discussions of educational programs, career opportunities, and other topics in electrical and computer engineering. For ECE students. Approved for S/U grading only.

ECE 205  Intro Elec & Electr 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. ECE students may not receive credit for this course. Prerequisite: PHYS 212.

ECE 206  Intro Elec & Electr Ckts Lab  credit: 1 hours.
Laboratory instruments and basic measurement techniques, electric circuits, CMOS logic circuits, DTL and TTL circuits, and op-amps. ECE students may not receive credit for this course. 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. Prerequisite: ECE 110 and PHYS 212; credit or concurrent registration in MATH 385.

ECE 211  Topics Analog Ckts & 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. Students may not receive credit for both ECE 211 and ECE 210. Prerequisite: ECE 110 and PHYS 212; credit or concurrent registration in MATH 385.

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 385, PHYS 212; or consent of instructor.

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: One of CS 101, CS 125, ECE 110, ECE 190.

ECE 307  Techniques for Engin Decisions  credit: 3 hours.
The course is concerned with the modeling of decisions in engineering work and the analysis of models to develop a systematic approach to making decisions. The course aims to teach students to think structurally about decision-making problems. Fundamental concepts in linear and dynamic programming, probability theory, and statistics serve as the mathematical basis for the development of techniques for solving typical problems faced in making engineering decisions in industry and government. Topics include resource allocation, logistics, scheduling, sequential decision making, siting of facilities, investment decisions, application of financial derivatives, and other problems for decision making under uncertainty. Extensive use of case studies from actual industrial applications gets students involved in real-world decisions. Prerequisite: ECE 210; credit or concurrent registration in ECE 413 or equivalent.

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; case studies. Same as PHIL 316. Prerequisite: Junior standing; RHET 105.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Advanced Composition

ECE 317  Intro ECE Tech & Management  credit: 3 hours.
The goal of this course is to equip non-engineering business-oriented students with the technical skills to become competitive as businesspersons in a technology-driven market. To accomplish this goal, this course will aim to provide a basic understanding of electrical and computer engineering concepts. An incomplete list of topics includes: basic circuit components, dc fundamentals, ac fundamentals, semiconductors, operational amplifiers, device fabrication, power distribution, digital devices, and computer architecture (including microprocessors). A relatively low level of mathematical ability (first term calculus) is assumed. This course is designed for the Business Majors in the Technology and Management program. Credit is not given to students enrolled in Electrical or Computer Engineering. Prerequisite: MATH 220 or MATH 234 or consent of instructor.

ECE 328  Comp Soln EM Pros, I  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; and time-domain analysis of waves. Prerequisite: ECE 205 or ECE 210.

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. Prerequisite: ECE 290 or CS 331. Recommended: ECE 190.

ECE 395  Adv 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 or consent of instructor.

ECE 396  Honors Project  credit: 1 TO 4 hours.
Special project or reading course for James Scholars in engineering. May be repeated. Prerequisite: James Scholar in engineering; consent of instructor.

ECE 397  Individual Study in ECE  credit: 0 TO 4 hours.
Individual Projects. Prerequisite: Approved written application to department as specified by department or instructor.
ECE 398  **Special Topics in ECE**  credit: 0 TO 4 hours.

Lectures and discussions relating to new areas of interest. May be repeated if topics vary. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

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. Prerequisite: James Scholar in engineering; 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 or equivalent; ECE 290; 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; and topics in digital audio. Prerequisite: ECE 290, ECE 410, and ECE 473; or consent of instructor.

ECE 410  **Digital Signal Processing, I**  credit: 4 hours.

Introduction to discrete-time systems and digital signal processing: discrete-time linear systems, difference equations, z-transform, discrete convolution, stability, discrete-time Fourier transform, analog-to-digital and digital-to-analog conversion, interpolation and decimation, digital filter design, discrete Fourier transform, fast Fourier transform, spectral analysis, and applications of digital signal processing. Prerequisite: ECE 210 or consent of instructor.

ECE 411  **Comp Organization & Design**  credit: 4 hours.

Basic computer organization and design, computer arithmetic, control design and microprogramming, memory organization, I/D design, and reliability/performance evaluation; laboratory for computer design implementation, simulation, and layout. Credit is not given toward graduate degrees in Electrical Engineering. Prerequisite: ECE 390 or CS 232.

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; and open lab format. Prerequisite: ECE 385; ECE 390 or CS 232. Recommended: credit or concurrent registration in ECE 411.

ECE 413  **Probability with Engrg Applic**  credit: 3 hours.

Introduction to probability theory with applications to engineering problems such as the reliability of circuits and systems and to statistical methods for hypothesis testing, decision making under uncertainty, and parameter estimation. Credit is not given toward graduate degrees in Electrical Engineering. Prerequisite: ECE 210.

ECE 414  **Biomedical Instrumentation**  credit: 3 hours.

Introduction to engineering aspects of the detection, acquisition, processing, and display of signals from living systems; biomedical transducers for measurements of biopotentials, ions and gases in aqueous solution, force, displacement, blood pressure, blood flow, heart sounds, respiration, and temperature; and therapeutic and prosthetic devices. Same as BIOE 414. Prerequisite: ECE 205 or ECE 210 or consent of instructor.

ECE 415  **Biomedical Instrumentation Lab**  credit: 2 hours.

Laboratory to accompany ECE 414. Studies medical instrumentation and transducers for static and dynamic nonbiological inputs and measures actual biomedical signals; requires some animal experiments. Same as BIOE 415. Prerequisite: Credit or concurrent registration in ECE 414.

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; and 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 413, STAT 400, IE 300, MATH 461; MATH 415; and experience with C programming language.

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.
ECE 425  Intro 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; and
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 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 Window 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. 3 undergraduate hours; or 3 to 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.
This course gives senior and graduate students in ECE 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 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; and introduction to integrated circuits. Credit is not given toward graduate degrees in Electrical
Engineering. Prerequisite: PHYS 214; credit or concurrent registration in ECE 329.

ECE 441  Physcs & Modeling Semicond Dev  credit: 3 hours.
Detailed presentation of advanced concepts such as generation-recombination, hot electron effects, and breakdown mechanisms;
esential 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 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 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 Engineering. Prerequisite: Senior standing in ECE.

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  **Intro Artificial Intelligence**  credit: 3 OR 4 hours.
Same as CS 440. See CS 440.

ECE 449  **Comp Soln EM Problems, II**  credit: 1 hours.
Solution of selected electromagnetics problems at the ECE 450 level using personal computers. Credit is not given toward graduate degrees in Electrical Engineering. Prerequisite: ECE 328; credit or concurrent registration in ECE 450; or consent of instructor.

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; and radiation. Credit is not given toward graduate degrees in Electrical 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  **Radio Communication Circuits**  credit: 4 hours.
Design of a radio system for transmission of information; types of receivers, matching techniques, receiver and antenna noise, types of modulation, high-frequency circuitry, and point-to-point and satellite communications. Prerequisite: ECE 442; credit or concurrent registration in ECE 450.

ECE 454  **Antennas**  credit: 3 hours.
Antenna parameters; polarization of electromagnetic waves; basic antenna types; antenna arrays; broadband antenna design; and antenna measurements. Prerequisite: ECE 450 or consent of instructor.

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); and application of optical devices. 3 undergraduate hours. 4 graduate hours. Prerequisite: ECE 450 or PHYS 436 or consent of instructor.

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 or equivalent; ECE 450 or equivalent.

ECE 458  **Applic of Rad Wave Propagation**  credit: 3 hours.
Terrestrial atmosphere, radio wave propagation, and applications to radio sensing and radio communication. Prerequisite: ECE 450 or consent of instructor.

ECE 459  **Communications, I**  credit: 3 hours.
Introduction to analog and digital modulation techniques, random processes, and power spectral density. Effects of noise on, and bandwidth requirements of, different modulation schemes. Prerequisite: ECE 413 or equivalent.

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 413 or STAT 400.
ECE 461  Communications, II  credit: 3 hours.
Digital communication systems, modulation, demodulation, channel models, bit error rate, spectral occupancy, synchronization, equalization, and trellis-coded modulation. Prerequisite: ECE 459.

ECE 462  Logic Design  credit: 3 hours.
Design of combinational networks, hazards, finite state testing 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.
The focus of this laboratory course is digital communications systems. Students will gain hands-on experience in the configuration and performance evaluation of digital communication systems employing both radio and optical signals. Prerequisite: ECE 459 or equivalent. Credit or concurrent registration in ECE 461 recommended.

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 413 and ECE 450. Recommended: credit or concurrent registration in ECE 459 and ECE 466.

ECE 466  Optical Communications Lab  credit: 1 hours.
Laboratory course in optical communication systems: 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 468  Optical Remote Sensing  credit: 3 hours.
Introduction to Optical Remote Sensing. 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: PHYS 214, ECE 210, ECE 329, and a course in probability or statistics; or consent of instructor.

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 or consent of instructor; 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; or consent of instructor.

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 385 or equivalent.

ECE 474  Ultrasonic Techniques  credit: 3 OR 4 hours.
Ultrasonic wave propagation, generation, detection, and measurement in liquid and solid media, acoustic impedance concepts, ultrasonic absorption and velocity measurement techniques, piezoelectricity, and discussion of industrial, experimental, bioengineering, and medical applications. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ECE 473 or equivalent or consent of instructor.

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; and optional project laboratory. Same as BIOE 475. Prerequisite: GE 320 or ECE 210 or consent of instructor.

ECE 476  Power System Analysis  credit: 3 hours.
Examines the development of power system equivalents, per phase network analysis, load flow, symmetrical components, sequence networks, fault analysis, and digital simulation. Prerequisite: ECE 430.

**ECE 477  Power Syst Operation & Control**  credit: 3 hours.
Studies economic operation of power systems, system protection, power system stability, dynamics and control of power systems, high voltage DC transmission, load flow interface, and digital simulation. Prerequisite: ECE 476.

**ECE 478  Formal Software Dev Methods**  credit: 3 OR 4 hours.
Same as CS 477. See CS 477.

**ECE 478  Formal Software Dev Methods**  credit: 3 OR 4 hours.
Studies economic operation of power systems, system protection, power system stability, dynamics and control of power systems, high voltage DC transmission, load flow interface, and digital simulation. Prerequisite: ECE 476.

**ECE 478  Formal Software Dev 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. Approved for both letter and S/U grading. Prerequisite: ECE 410 recommended.

**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; and 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 482  Digital 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.
Teaches seniors and first year graduate students in Electrical Engineering advanced topics in semiconductor device processing. Covers the 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 semiconductor materials with special emphasis on compound semiconductors. Issues in computer simulation of processes and the manufacturing of devices and circuits are also covered. Prerequisite: ECE 444.

**ECE 485  Intro MEM Devices & Systems**  credit: 3 hours.
Course presents an introduction to the principles, fabrication techniques, and applications of microelectromechanical systems (MEMS). Students will gain an in-depth understanding of sensors and actuator principles and integrated microfabrication techniques for MEMS. It also consists of a comprehensive investigation of the state-of-the-art MEMS devices and systems. Same as IE 485 and ME 485. Prerequisite: Senior standing in the College of Engineering.

**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 or consent of instructor.

**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; and incidental quantum ideas bearing on electronics. Prerequisite: PHYS 485 or consent of instructor.

**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; ECE 450 or consent of instructor.

**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; and 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 380; or consent of instructor.

**ECE 491  Intro to Numerical Analysis**  credit: 3 OR 4 hours.
Same as CS 450, CSE 401, and MATH 450. See CS 450.

**ECE 492  Intro to Parallel Programming**  credit: 3 OR 4 hours.
Same as CS 420 and CSE 402. See CS 420.
ECE 495  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 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. No graduate credit. Prerequisite: Senior standing; 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.
Lectures and discussions relating to new areas of interest. May be repeated if topics vary. Prerequisite: As specified for each topic
offering; see Schedule or departmental course information.

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. Approved for both letter and S/U grading. No graduate credit. Prerequisite: ECE 497 and consent
of instructor.

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

ECE 500  Graduate Seminar  credit: 0 hours.
Required of all graduate students. Approved for S/U grading only.

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; and focuses on hardware alternatives in detail and their
relation to system performance/cost. Same as CSE 521. Prerequisite: ECE 411 or CS 433 or consent of instructor.

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; CS 426 or
equivalent.

ECE 513  Signal & Spectral Analysis  credit: 4 hours.
Fundamentals of linear least squares estimation of discrete-time signals and their spectra; minimum-norm least squares and total least
squares solutions; singular value decomposition; Wiener and Kalman filtering; autoregressive spectral analysis; and the maximum
entropy method. Prerequisite: ECE 410, ECE 413, MATH 418 or equivalent; or consent of instructor.

ECE 515  Control Syst Theory & Design  credit: 4 hours.
Synthesis of feedback control systems to meet design specifications, including sensitivity; multivariable systems; introduction to
systems with random inputs; state variable techniques; and nonlinear systems. Prerequisite: ECE 486 or equivalent; or consent of
instructor.

ECE 517  Nonlinear & Adaptive Control  credit: 4 hours.
Studies design of nonlinear control systems based on stability considerations; examines 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, I**  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, which are used in the areas of gaseous electronics, gas and solid plasmas, controlled fusion, aeronomy, gas lasers, and magnetohydrodynamics. Prerequisite: PHYS 485 or ECE 452 or equivalent; or consent of instructor.

ECE 525  **Nucl-Electr Energy Conversion**  credit: 4 hours.
Same as NPRE 525. See NPRE 525.

ECE 528  **Analysis of Nonlinear Systems**  credit: 4 hours.
First-level graduate course on the analysis on nonlinear dynamical systems, covering topics such as 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 or equivalent; MATH 385; or consent of instructor.

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; and optical waveguides. Prerequisite: ECE 520; MATH 556 recommended.

ECE 532  **Compound Semiconductors**  credit: 4 hours.
Properties of III-V and II-VI compound semiconductors and the devices which are unique to these materials; emphasis on materials such as GaAs, Ga(AsP), GaP, CdSe, Cd(SeS), etc., and on luminescence, semiconductor lamps, and semiconductor lasers. Prerequisite: Graduate standing in electrical engineering with some background in modern physics; elementary quantum mechanics; elementary semiconductor theory or equivalent.

ECE 533  **Parallel Computer Architecture**  credit: 4 hours.
Same as CS 533 and CSE 522. See CS 533.

ECE 534  **Random Processes**  credit: 4 hours.
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 413, MATH 461, STAT 400; or consent of instructor.

ECE 535  **Theory Semicond & Devices**  credit: 4 hours.
Introductory quantum mechanics of semiconductors; energy bands; dynamics of Block electrons in static and high-frequency electric and magnetic fields; equilibrium statistics; transport theory, diffusion, drift, and thermoelectric effects; and characteristics of p-n junctions, heterojunctions, and transistor devices. Same as PHYS 565. Prerequisite: Senior-level course in quantum mechanics or atomic physics.

ECE 536  **Integ Optics & Optoelectronics**  credit: 4 hours.
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; ECE 488 recommended.

ECE 537  **Speech Processing**  credit: 4 hours.
Introduction to the theory and techniques in speech processing and recognition; includes speech production model, spectral analysis, pattern comparison techniques, hidden Markov models (HMM), and HMM-based automatic speech recognition; also includes computer laboratory. Prerequisite: ECE 410 and ECE 534; experience with C programming and UNIX systems.

ECE 539  **Adv Theory Semicond & Devices**  credit: 4 hours.
Selected advanced topics of current interest in the physics of semiconductors and solid-state devices. Same as CSE 534. Prerequisite: ECE 535.

ECE 540  **Computational Electromagnetics**  credit: 4 hours.
Course will cover basic computational techniques for numerical analysis of electromagnetics problems, including the finite difference, finite element, and moment methods. Emphasis will be 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: ECE 520 or concurrent registration in ECE 520; CS 257 or equivalent; or consent of instructor.
ECE 541  Computer Systems Analysis  credit: 4 hours.
Same as CS 541 and CSE 524. See CS 541.

ECE 542  Design Fault-Tolerant Dig Syst  credit: 4 hours.
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 or equivalent.

ECE 543  Dig Testing & Design for Test  credit: 4 hours.
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 or equivalent.

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; and absorption and dispersion. Same as TAM 515. Prerequisite: One of ECE 473, ECE 520, TAM 418, or equivalent; or consent of instructor.

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 410 and ECE 413; or equivalent.

ECE 548  Comp Models of Cognitive Proc  credit: 4 hours.
Same as CS 548. See CS 548.

ECE 549  Computer Vision  credit: 4 hours.
Examines 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 or consent of instructor.

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. Approved for both letter and S/U grading. Prerequisite: CS 473 or equivalent; graduate standing.

ECE 551  Digital Signal Processing II  credit: 4 hours.
Reviews basic concepts of digital signals and systems; examines computer-aided digital filter design, quantization effects, decimation and interpolation, and fast algorithms for convolution and the DFT; and introduces adaptive signal processing. Same as CSE 542. Prerequisite: ECE 410 and ECE 413; or equivalent.

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.
Formulation of the optimization problem; controllability; observability; stability; Lyapunov's second method; application of variational calculus, maximum principle, and principle of optimality to control problems; stochastic control; and adaptive control. Prerequisite: 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.
General discussion on 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 or equivalent or consent of instructor.

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 410 and ECE 413; or equivalent.

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 as topics vary. To a maximum of 12 graduate hours; may be repeated in separate terms as topics vary, to a maximum of 16 graduate hours. Two or more sections of this course may be offered in a term with different outlines. Students registering in more than one section should receive separate credit. Students will not receive additional credit toward a degree from multiple offerings of this course if those offerings have significant overlap, as determined by the Electrical and Computer Engineering department. Prerequisite: Specified each semester or consent of instructor. (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 allow students to 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; and parameter estimation, linear and nonlinear estimation, and filtering. Prerequisite: ECE 534 or equivalent or consent of instructor.

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: MATH 466 or ECE 534 or consent of instructor.

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; ECE 534 or MATH 466; or consent of instructor.

ECE 568  Model & Ctrl Electromech Syst  credit: 4 hours.
Examines 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; or consent of instructor.

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 or consent of instructor.

ECE 570  Nonlinear Optics  credit: 4 hours.
Light propagation in anisotropic crystals; second- and third-order nonlinear susceptibility and electro-optic effect; and 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; and inverse problems. Prerequisite: MATH 446; ECE 520 or PHYS 505 or equivalent.

ECE 572  Quantum Electronics  credit: 4 hours.
Brief 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.
Studies 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 or consent of instructor.
ECE 576  **Power System Dyn & 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 or consent of instructor. Concurrent registration in ECE 515 recommended.

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 578  **Adv EM Diffraction & Radiation**  credit: 4 hours.
Asymptotic solutions of Maxwell's equations, geometrical optics, edge diffraction, uniform theories, creeping waves, advanced antenna theory, and topics of current interest. Prerequisite: ECE 520 or PHYS 505; ECE 577 recommended.

ECE 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 CS 579 and MATH 578. Prerequisite: CS 473 or CS 475 or consent of instructor.

ECE 580  **Optimization by Vector Methods**  credit: 4 hours.
Same as MATH 587. See MATH 587.

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 584  **IC Reliability Engineering**  credit: 4 hours.
Description of the algorithms and procedures required to study the reliability of integrated circuit products. Covers reliability modeling, physical causes of semiconductor device failure, reliability model development and calibration, model-based reliability prediction, product testing and measurement, and failure diagnosis. Coverage emphasizes application to integrated circuit technology. Prerequisite: ECE 413 and ECE 440; or consent of instructor.

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 or equivalent.

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 semester, and up to 20 hours total for the course. Students may not receive additional credit towards a degree from multiple offerings of this course if those offerings have significant overlap, as determined by the ECE department. Prerequisite: As specified each semester of consent of instructor. 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 413, and ECE 476; or consent of instructor.

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. May be repeated. Approved for S/U grading only. Prerequisite: Advanced standing; 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. Students will use the methods to build components of
a speech understanding system. Same as LING 594. For 4 hours credit, an extended project is required. Prerequisite: ECE 537 or consent of instructor.

ECE 596  **Master's Project**  credit: 1 TO 8 hours.
Graduate-level 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. Prerequisite: Graduate standing in ECE. 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. Prerequisite: Consent of instructor.

ECE 598  **Special Topics in ECE**  credit: 0 TO 4 hours.
Lectures and discussions relating to new areas of interest. May be repeated if topics vary. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

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

Head of Department: Steven Williams
Department Office: Graduate Department Office: 330 Wohlers Hall, 1206 South Sixth, Champaign; Undergraduate Department Office: 325 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 promoting 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 MATH 234 or equivalent.

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; MATH 234 or equivalent.

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 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; 
MATH 125 and MATH 234 or equivalent are recommended.

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 and ECON 103 or 
equivalent; MATH 125 and MATH 234 or equivalent are recommended.

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. May be repeated. Approved for both letter and S/U grading. Prerequisite: Junior or senior standing. ECON 101 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 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
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.
Focuses 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 454  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 455  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: MATH 125, MATH 225, or MATH 415; MATH 242 or equivalent; ECON 302.

ECON 472  Phys and Soc Sci Simulation  credit: 3 hours.
Same as CSE 472, and MSE 482. See MSE 482.

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 or consent of instructor.

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 is recommended.

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  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: implicit 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, equivalent, or instructor's permission.

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 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. Professional credit only applicable to LAW 665.

ECON 545  Econ of Ed, Hlth & Hum Capital  credit: 4 hours.
Same as EOL 518. See EOL 518.

ECON 550  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 551  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 552  Computable GE 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. Prerequisites: ECON 500 and ECON 509 or equivalent; MATH 220 or equivalent.

ECON 555  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 561  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 562  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 563  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 564  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 565  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.

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. May be repeated. Approved for S/U grading only.
Educational Practice

Teacher Education, Council on
Executive Director: Chris Roegge
Phone: See web site for phone numbers.
www.ed.uiuc.edu/cte

EDPR 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
May be repeated. Approved for S/U grading only.

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.ed.uiuc.edu/cte/cap).

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.ed.uiuc.edu/cte/cap).

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. May be repeated twice. Sections ALC, ALE, ALM, ALD may be repeated one time. 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.ed.uiuc.edu/cte/cap),
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.
English as an International Language

English as an International Language
Director: Numa P. Markee
Division Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-1506
www.deil.uiuc.edu

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. 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 467  Task-Based Language Teaching  credit: 3 OR 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. 3 undergraduate hours. 4 graduate hours. Prerequisite: EIL 489, or consent of instructor.

EIL 482  **Computer Foreign Lang Tchg**  credit: 4 hours.
Same as CLCV 482, FR 482, GER 482, HUM 482, ITAL 482, LING 486, PORT 482, SLAV 482, and SPAN 482. See HUM 482.

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 520  **Intro to General Linguistics**  credit: 4 hours.
Same as ANTH 500, and LING 500. See LING 500.

EIL 522  **Pedagogical Grammar**  credit: 4 hours.
A survey of English grammar and texts for teaching grammar in ESL/EFL. Covers topics usually taught to adults, emphasizing the causes of grammatical errors as revealed by second language acquisition research, and provides practice in developing classroom activities for teaching English grammar. Same as LING 513. Prerequisite: EIL 422, or consent of instructor.

EIL 535  **Sem Neuroling of Bilingualism**  credit: 4 hours.
Same as LING 535, and SLS 535. See LING 535.

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: 3 hours.
Same as FR 580, GER 580, ITAL 580, PORT 580, SLS 580, and SPAN 580. See SPAN 580.

EIL 581  **Ling Psych Found of Lang Tchg**  credit: 4 hours.

EIL 584  **Theories in SLA**  credit: 4 hours.
Same as CI 584, EALC 584, EPSY 563, FR 582, GER 584, ITAL 584, LING 584, PORT 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. May be repeated to a maximum of 8 hours. Approved for S/U grading only. Prerequisite: Consent of thesis supervisor.
Engineering

Engineering
Program Administrator: Keith Hjelmstad
Program Office: 206 Engineering Hall, 1308 West Green, Urbana
Phone: 333-2280
www.engr.uiuc.edu

ENG 100  Engineering Lecture  credit: 0 hours.
Engineering lecture for freshmen; selected topics each week. Required of freshmen in the College of Engineering. Approved for S/U grading only.

ENG 199  Undergraduate Open Seminar  credit: 0 TO 5 hours.
May be repeated.

ENG 201  Cooperative Engr Seminar  credit: 0 hours.
Discussion seminar for on-campus cooperative education students. Topics include industrial work reports, online company card reports, on-line ABET reports, the Co-op/Internship Job Fair, the Co-op Information Night, the Co-op Society, and membership in the Co-op Honor Society. Approved for S/U grading only. Prerequisite: Enrollment as a cooperative education student

ENG 202  Cooperative Engr Practice  credit: 0 hours.
Off-campus practice of engineering in government or industry. Approved for S/U grading only. Prerequisite: Enrollment as a cooperative education student.

ENG 210  Engineering Apprenticeship  credit: 0 hours.
Part-time practice of engineering science in an on-campus research laboratory environment; summary report required. May be repeated. Approved for both letter and S/U grading. Prerequisite: Completion of freshman year and consent of the Director of College of Engineering Work Experience Programs.

ENG 299  Engineering Study Abroad  credit: 0 TO 15 hours.
Provides campus credit for foreign study and/or provides a mechanism for engineering students to maintain continuous enrollment on this campus. If objective is study abroad for credit, a detailed proposal must be submitted by the student for approval by a committee of 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 student's degree is made after a review of the student's work abroad by the above committee and the college office. (Summer Session, 0 to 7.5 hours). Prerequisite: Completion of sophomore year in engineering; approval of student's proposed study program by his department and the college office.

ENG 300  Engineering Transfer Lecture  credit: 0 hours.
Required of off-campus transfer students in the College of Engineering. Meets for first three weeks of each term; selected topics. Approved for S/U grading only.

ENG 310  Engineering Internship  credit: 0 hours.
Full-time practice of engineering in an off-campus industrial or research laboratory environment. Work report, on-line Company Card Report, and on-line ABET report required. Approved for S/U grading only. Prerequisite: Completion of freshman year or consent of Director of the College of Engineering Work Experience Programs.

ENG 395  Executives in the Tech World  credit: 1 hours.
Offers a series of seminars by executives from industrial and technical organizations; provides students an opportunity to better understand the role of the technological executive as a decision-maker in the contemporary world; and discusses current trends, practices, economic conditions, productivity, government regulation, and foreign trade from the viewpoint of a wide range of industries such as transportation, steel, energy, and electronics. Prerequisite: Junior or senior standing in engineering, or consent of instructor.

ENG 491  Interdisciplinary Design Proj  credit: 1 TO 4 hours.
The course objective is to provide a disciplined, multi-department project design experience. Teams work on projects with team objectives that have an overall (or major phase) completion date at the end of the semester. Students participate in engineering activities with individual as well as team responsibilities. The projects involve project 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). Presentations are made and reports are given at the end of each semester. Lecture-lab format. Prerequisite: Senior standing; consent of section instructor. 1 to 4 undergraduate hours. May be repeated once.

ENG 510  Engineering Practice  credit: 0 hours.
Practice type course. May be repeated. Approved for S/U grading only. Prerequisite: Graduate student standing or consent of Director of College of Engineering Work Experience Programs.
Engineering Honors

Executive Secretary of Program: H. G. Wenzel
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 sequence and/or discussion groups for freshman James Scholars to enable them to explore at their own level various aspects of technology that are of interest to them. Prerequisite: Honors student in the University.

ENGH 397  Honors Independent Study  credit: 1 TO 4 hours.
Special lecture sequences and/or discussion groups arranged each term in special interdisciplinary subjects of current interest for James Scholars in engineering. Prerequisite: James Scholar in engineering or 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. Course
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 up to 1 time(s) if topics vary.

ENGL 107  Intro to Poetry-ACP  credit: 3 hours.
Course is identical to ENGL 101 except for the additional writing component. Credit is not given for both ENGL 107 and ENGL 101.
Prerequisite: Completion of campus Composition I general education requirement.

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 this course 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
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 English 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 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 up to 1 time(s). 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 up to 1 time(s) if topics vary. Prerequisite: James Scholar standing or other designation as a superior student.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

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 Lit Study for Majors  credit: 3 hours.
Introduction to literary genres and literary interpretation, with an emphasis on close reading.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

ENGL 201  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 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  **English Lit to 1798**  credit: 3 hours.
Historical and critical study of selected works of English literature to 1798 in chronological sequence. 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 210  **English Lit 1798 to Present**  credit: 3 hours.
Historical and critical study of selected works of English literature after 1798 in chronological sequence. 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 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 222 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
UIUC: Western Compartv Cult

**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 246 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
UIUC: Western Compartv Cult

**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, Dostoevsky, 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 or 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 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 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  Intermediate Film Studies  credit: 3 hours.
Critical study of narrative films, with viewing and discussion of a major film each week; in-depth study of selected directors, genres, and themes; emphasis on aspects of film aesthetics, criticism, and history. 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 280  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 281  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 283  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 284  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 285  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, Mahesweta 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: Non-Western Cultures
UIUC: Literature and the Arts

ENGL 286  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 290  Individual Study  credit: 0 TO 3 hours.
Study of selected topics. May be repeated to a maximum of 6 hours. Students may register in more than one section per term. Prerequisite: Consent of instructor.

ENGL 300  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 359  Lit Responses to the Holocaust  credit: 3 hours.
Same as CWL 320, RLST 320, and YDSH 320. See YDSH 320.
This course satisfies the General Education Criteria for a:
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.

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

ENGL 391  **Honors Individual Study**  credit: 1 TO 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 studies 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 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 422 Milton**  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature, or consent of instructor.

**ENGL 423 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 424 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 425 English 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 426 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 427 English Romantic Literature**  credit: 3 OR 4 hours.
3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature, or consent of instructor.

**ENGL 428 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 429 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 430 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 431 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 432 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 433 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 434 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 435 Topics in Modern Fiction**  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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ENGL 463</td>
<td>Approaches to Oral Tradition</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Same as CLCV 463 and CWL 466. See CLCV 463.</td>
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<tr>
<td>ENGL 465</td>
<td>Stage Comedy</td>
<td>3 OR 4</td>
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<tr>
<td></td>
<td>History and theory of stage comedy. Same as CWL 465.</td>
<td>3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature, or consent of instructor.</td>
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<tr>
<td>ENGL 466</td>
<td>Topics in Modern Drama</td>
<td>3 OR 4</td>
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<td></td>
<td>3 undergraduate hours. 4 graduate hours. May be repeated if topics vary. Prerequisite: One year of college literature, or consent of instructor.</td>
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<tr>
<td>ENGL 470</td>
<td>Modern African Fiction</td>
<td>3 OR 4</td>
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<td></td>
<td>Same as AFST 410, CWL 410, and FR 410. See AFST 410.</td>
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<tr>
<td>ENGL 473</td>
<td>Special Topics in Film Studies</td>
<td>0 TO 4</td>
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<td></td>
<td>Extended investigation of major subjects and issues in narrative film; topics vary and typically include studies of author/directors, genres, historical movements, critical approaches, and themes. 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 college-level film studies course and one additional college-level course in film studies or literature, or consent of instructor.</td>
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<tr>
<td>ENGL 475</td>
<td>Lit and Other Disciplines</td>
<td>3 OR 4</td>
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<td></td>
<td>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.</td>
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<tr>
<td>ENGL 481</td>
<td>Comp Theory and Practice</td>
<td>3 OR 4</td>
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<tr>
<td></td>
<td>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.</td>
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<tr>
<td>ENGL 482</td>
<td>Writing Technologies</td>
<td>3 OR 4</td>
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<td></td>
<td>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.</td>
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<tr>
<td>ENGL 483</td>
<td>Lit Crit From 1800 to Present</td>
<td>3 OR 4</td>
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<td></td>
<td>Same as CWL 483. 3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature, or consent of instructor.</td>
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<tr>
<td>ENGL 485</td>
<td>Literature for the High School</td>
<td>3 OR 4</td>
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<td></td>
<td>3 undergraduate hours. 4 graduate hours. Prerequisite: One year of college literature, or consent of instructor.</td>
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<tr>
<td>ENGL 500</td>
<td>Intro to Criticism &amp; Research</td>
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<td>Introductory course in methods and techniques in research and literary criticism.</td>
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<tr>
<td>ENGL 503</td>
<td>Historiography of Cinema</td>
<td>4</td>
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<td></td>
<td>Same as CINE 503, and CWL 503. See CINE 503.</td>
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<tr>
<td>ENGL 504</td>
<td>Theories of Cinema</td>
<td>4</td>
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<tr>
<td></td>
<td>Same as CINE 504, and CWL 504. See CINE 504.</td>
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<tr>
<td>ENGL 505</td>
<td>Writing Studies I</td>
<td>4</td>
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<tr>
<td></td>
<td>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.</td>
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<tr>
<td>ENGL 506</td>
<td>Writing Studies II</td>
<td>4</td>
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<td>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. Prerequisite: ENGL 505 or consent of instructor.</td>
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</tbody>
</table>
ENGL 507  Old English  credit: 4 hours.
Introduction to the language before 1000 A.D. Same as MDVL 507.

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 studies, 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.
May be repeated by Ph.D. candidates as the 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. Approved for both letter and S/U grading. 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. Prerequisite: Doctoral candidate standing. Course may be repeated up to a maximum of 16 hours.
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. May be repeated. Approved for S/U grading only.
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 218 Politics of Environ Protection credit: 3 hours.
Same as UP 218. See UP 218.

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.
Prerequisite: Consent of Instructor.

ENVS 301 Environmental Studies Seminar credit: 2 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.
ENVS 330  Environmental Communications  credit: 3 hours.
Same as ACE 310, and NRES 310. See ACE 310.

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: 3 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 451  Environmental Organic Chem  credit: 3 hours.
Same as NRES 451. See NRES 451.

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 574. See CHLH 474.

ENVS 480  Basic Toxicology  credit: 3 hours.
Same as CPSC 433, FSHN 480, and VB 549. See FSHN 480.

ENVS 482  Current Problems in Env Geol  credit: 4 hours.
ENVS 510  **Adv Natural Resource Economics**  credit: 4 hours.
Same as GEOL 482. See GEOL 482.

ENVS 511  **Environmental Economics**  credit: 4 hours.
Same as ACE 510, ECON 515, and NRES 510. See ACE 510.

ENVS 514  **Neurotoxicology**  credit: 3 hours.
Same as PSYC 515, and VB 514. See VB 514.

ENVS 516  **Developmental Toxicology**  credit: 3 hours.
Introduction to 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 developmental toxicants. Examples emphasize developmental toxicants that are present in the human environment. Laboratory demonstrations will illustrate lecture material whenever feasible. Same as VB 516. Prerequisite: ENVS 480, or one course in neurobiology or consent of instructor.

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 440, NRES 540, RSOC 540, and UP 440. 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 up to 20 hours. Prerequisite: HDES Scholar status or permission of instructor.

ENVS 596  **Interdisciplinary Tox Sem**  credit: 1 hours.
Same as VB 596, and PATH 596. See PATH 596.
Educational Organization and Leadership

Educational Organization and Leadership
Head of Department: Debra Bragg
Department Office: 333 Education Building, 1310 South Sixth, Champaign
Phone: 333-2155
www.ed.uiuc.edu/EOL

EOL 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated in the same or separate terms as topics vary. Approved for both letter and S/U grading.

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. Not open to experienced administrators nor to students who have taken any of the following (or equivalents): EOL 542, EOL 543, EOL 565, EOL 546, EOL 566.

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: Graduate standing 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: Teaching experience required.

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 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 an EOL program and, if seeking the Superintendent Endorsement, must hold a Type 75 Administrative Certificate with General Administrative Endorsement.

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 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: 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: An undergraduate course in political science, or an introductory course in the politics of education such as EPS 423, 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: 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 both letter and S/U grading. May be repeated to a maximum of 12 hours. No more than 4 hours earned at the master's level.

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 547.

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 an EOL program and, if seeking the Superintendent Endorsement, must hold a Type 75 Administrative Certificate with General Administrative Endorsement.

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 an EOL program and, if seeking the Superintendent Endorsement, must hold a Type 75 Administrative Certificate with General Administrative Endorsement.

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: Students must be admitted to an EOL program and, if seeking the Superintendent Endorsement, must hold a Type 75 Administrative Certificate with General Administrative Endorsement.

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 equivalent 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 TO 8 hours.
Open only to persons who have been admitted to doctoral study in the Department of Educational Organization and Leadership. Prerequisite: 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 580  **Critical Issues in Higher Ed**  credit: 4 hours.
The examination of critical trends that impact higher education from various perspectives, including legal, organization, and political. May be repeated to a maximum of 8 hours.

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. 4 graduate hours. Prerequisite: Completion of a campus or departmental orientation for teaching assistants.

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: 4 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.
Educational Policy Studies

EPS 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
May be repeated. Specific sections approved for S/U grading.

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 this course 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. 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 1800s 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 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, HDFS 424, 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
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 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.
Analyses of the role and functions of education in social, political, and economic development, with particular reference to the new and the developing countries. Prerequisite: Consent of instructor.

EPS 575 Cult Studies and Crit Interp credit: 4 hours.
Same as COMM 575. See COMM 575.

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. May be repeated. Approved for S/U grading only.
Educational Psychology

Educational Psychology
Department Chairperson: Michelle Perry
Department Office: 226 Education Building, 1310 South Sixth, Champaign
Phone: 333-2245
www.ed.uiuc.edu/edpsy/main

EPSY 199  Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated. Approved for both letter and S/U grading.

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 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.

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: PSYCH 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 hours of credit requires consent of the instructor and the completion of a substantive scholarly project. 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 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 the completion of a substantive scholarly project. Prerequisite: EPSY 201 or EPSY 236; or equivalent.

EPSY 402  Sociocultural Influ on Learning  credit: 2 TO 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. 3 undergraduate hours. 2 or 4 graduate hours. Taking 4 hours of credit requires consent of the instructor and the completion of a substantive scholarly project. Prerequisite: EPSY 201 or EPSY 236; or equivalent.

EPSY 404  Adjustment in School Settings  credit: 2 TO 4 hours.
Examines theories of adjustment, factors that influence adjustment, and common adjustment problems of children and adolescents in school context. 3 undergraduate hours. 2 or 4 graduate hours. Taking 4 hours of credit requires consent of the instructor and the completion of a substantive scholarly project. 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: 2 TO 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. 3 undergraduate hours. 2 or 4 graduate hours. Taking 4 hours of credit requires consent of the instructor and the completion of a substantive scholarly project. 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 TO 3 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 3 hours in the spring. This 3 hours section includes additional assignments and discussion, and may include voluntary participation in experiments. Same as PSYC 430.

**EPSY 453  Instructional Design**  credit: 4 hours.
The design, systematic development, and evaluation of instructional programs, including delineation of performance outcomes, analysis of concepts, design of instructional sequences, assessment of student performance, and survey of current research. Each student develops an instructional program. Prerequisite: A foundation course in educational psychology or psychology.

**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: EDPSY 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 (individually 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 236; undergraduates should be concurrently enrolled in CI 403.

EPSY 486  Principles of Measurement  credit: 4 hours.
Study of the selection, preparation, administration, and interpretation of psychological and educational tests and diagnostic devices; emphasis on theory at a beginning level, with application to hypothetical school situations as a teaching device; and consideration of the sources of standard tests, criteria for their evaluation, methods of scoring, interpretation, and general and special areas. Prerequisite: EPSY 201 or EPSY 236.

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.
Experimentation or seminar on topics not treated by regularly scheduled courses. Requests for initiation of the course may be made by students or by faculty member. May be repeated to a maximum of 8 hours. Approved for both letter and S/U grading.

EPSY 491  Educ Psyc 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. 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. Approved for both letter and S/U grading. 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 is for work on either the vocational theories or vocational assessment parts of the course (this must be negotiated). For 4 hours, 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 permission 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. This course 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 524  **Counseling Process Research**  credit: 4 hours.
Overview of research investigating what transpires in counseling, and psychotherapy, and what contributes to effectiveness. Focuses on current research design, methodology, and knowledge in examining how counseling contributes to change. Prerequisite: EPSY 580 or equivalent, and a practicum in counseling, 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  **Eye Movements in Cognition**  credit: 4 hours.
Teaches use of eye movement monitoring techniques to study issues concerning perception, attention and cognition. Uses of eye movement monitoring in research in several fields; use of eyetracking equipment; and writing of computer programs for this type of research. Same as PSYC 556. Prerequisite: Consent of instructor required.

EPSY 551  **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 562  **Literacy Across Cultures**  credit: 4 hours.
Combines anthropological and psychological approaches to literacy in theory and practice, using case studies of cultural meanings and uses of literacy in worldwide array of traditional, historical, and modern settings; topics include origins and definitions of writing systems, psychology of scripts and math notations, issues of cultural cognitive consequences, out-of-school acquisition and uses, autonomous
vs. ideological meanings of texts, hegemony and writing, roles of readers, and interpretive communities. Prerequisite: EPSY 400 or EPSY 402, or equivalent.

**EPSY 563  Theories in SLA**  credit: 4 hours.
Same as CI 584, EALC 584, EIL 584, FR 584, GER 584, ITAL 584, LING 584, PORT 584, and SPAN 584. See SPAN 584.

**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 580 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 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. 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. May be repeated. Approved for S/U grading only.
ESL 110  **Engl Pronun for Acad Purposes**  credit: 0 TO 4 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. 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/ESL115 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 TO 4 hours.
Introduction to the conventions of group discussions and formal oral presentations; introduction to paragraph development and organization of American academic writing. 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 TO 4 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. 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 TO 4 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. 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 TO 4 hours.
Continuation of ESL 502 with emphasis on seminar presentation and thesis- and dissertation-related skills. 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 both letter and 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.

**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 for both letter and S/U grading. Prerequisite: Consent of instructor.

**ESL 510  Engl Pronun for Acad Purposes**  credit: 0 TO 4 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. Credit may not be used toward a graduate degree Prerequisite: Recommendation of UIUC English as a Second Language Placement Test.
Fine and Applied Arts

Dean and Program Administrator: Michael T. McCulley
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: Non-Western Cultures
UIUC: Literature and the Arts
UIUC: Western Compartv Cult

FAA 190  Exploration of the Arts  credit: 3 hours.
Introduction to the fine arts through literature-discussions with a teacher-practitioner in each of the arts and through written critiques of exhibits, concerts, and plays; provides creative experiences by a final, individual, or small group project. May be repeated up to 1 time(s).

FAA 299  FAA Study Abroad  credit: 0 TO 12 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). Prerequisite: Junior standing in the department; approval of the student's proposal by the departmental committee and the college office.
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 299  Finance 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 finance will be considered.

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. 3 undergraduate hours. 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.
Same as ECON 414. See ECON 414.

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.

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 230, ECON 340, BADM 313, or graduate standing.

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 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.

FIN 461  **Financial Intermediation**  credit: 3 hours.
Finance 461. 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.
Special Topics in Finance. May be repeated, in the same term up to 6 hours, to a maximum of 9 total 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. Restricted to Undergraduates 2 to 4 undergraduate hours. May be repeated as topics vary. Prerequisite: Senior standing.

FIN 495  **Senior Research**  credit: 2 TO 4 hours.
Research and reading course for students concentrating in finance, insurance, urban land economics, or related areas. May be taken by students in the college honors program in partial fulfillment of the honors requirements. Restricted to Undergraduates 2 to 4 undergraduate hours. Prerequisite: Senior standing; and cumulative grade-point average of 3.0 or better, Honors Day recognition in the junior year, or consent of instructor.

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.
The course 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 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; and capital structure, 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  **Macroeconomics**  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 590  **Individual Study and Research**  credit: 0 TO 4 hours.
Directed reading and research.

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. May be repeated to a maximum of 16 hours. Approved for S/U grading only.
French

French
Head of Department: Armine Mortimer
Department Office: 2090 Foreign Languages Building, 707 South Mathews Avenue, Urbana
Phone: 333-2020
www.french.uiuc.edu

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; 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; 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 155  French Masterpieces in Trans  credit: 3 hours.
Major works of French literature, in English translation, from the Renaissance to the twentieth century. Texts and lectures in English. Same as CWL 155. Credit is not applicable to the major in French.

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 up to 1 time(s). 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. Approved for both letter and S/U grading. 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 290 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 299 Study Abroad**  credit: 0 TO 17 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. 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, 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 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 the sounds and sound systems of French, with special attention to techniques for teaching pronunciation. 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 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. 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. 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 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.
FR 471 Intro Second Lang Learn Tchg credit: 4 hours.
Same as GER 469, HUM 471, LAT 471, RUSS 471, and SPAN 471. See SPAN 471.

FR 475 Intro to Comm Lang Tchg credit: 4 hours.
Same as GER 475, LAT 475, RUSS 475, and SPAN 475. See SPAN 475.

FR 478 Topics Secondary Lang Tchg credit: 4 hours.
Same as GER 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 six 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.
Lectures, seminars, and practical work in francophone literature and civilization, in a French-speaking country. Not open to undergraduates in the Illinois Program in Paris. Prerequisite: FR 209 and FR 210, and two of the following: FR 205, FR 207, and FR 217; or equivalent.

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.
Continuation of the approaches and emphases of FR 503 from the French Revolution to the present. Prerequisite: FR 503 or consent of instructor.

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 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 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 541  Studies 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 student request or faculty proposal. May be repeated to a maximum of 16 hours if topics vary.

FR 545  Studies in French Canadian Lit  credit: 4 hours.
Close study of one or more topics in French Canadian literature; see Schedule for current topics. May be repeated 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 562  Intro Romance Ling  credit: 4 hours.
Same as ITAL 556, LING 556, PORT 556, RMLG 556, and SPAN 556. See SPAN 556.

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: 3 hours.
Same as EIL 580, GER 580, ITAL 580, PORT 580, SLS 580, and SPAN 580. See SPAN 580.

FR 581  Ling Psych Found of Lang Tchg  credit: 4 hours.
Language teaching problems considered in the light of theoretical and experimental work in language acquisition, verbal learning and memory, motivation, speech perception, reading, error analysis, and language as an aspect of culture and societal relations. Same as EIL 581, GER 581, ITAL 581, PORT 581, RUSS 581, and SPAN 581. Prerequisite: Consent of instructor.

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, 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.
May be repeated. Approved for S/U grading only.
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. A laboratory fee is assessed each student. 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. May be repeated in the same or subsequent terms. No more than 12 hours may be counted toward graduation. Approved for both letter and S/U grading.

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. A laboratory fee is assessed each student. 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. May be repeated to a maximum of 10 hours. Approved for both letter and S/U grading.

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. Prerequisite: Sophomore standing, 2.0 GPA, consent of the advisor, and consent of the Department Teaching Coordinator. May be repeated in the same or subsequent terms to a maximum of 10 hours.

**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. A laboratory fee is assessed each student.

**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. Offered in alternate fall semesters (odd years). 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. A laboratory fee is assessed each student. Prerequisite: CHEM 102 or equivalent; FSHN 131.

**FSHN 340  Food Production and Service**  credit: 4 hours.
Introduction to the management of commercial and noncommercial 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 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 the 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 415  Food Biochem & Biotechnology**  credit: 3 hours.
Examines biochemical pathways associated with the major food components of carbohydrates, lipids, and proteins. Enzyme kinetics, regulation, and catalytic mechanisms; undesirable compounds in foods; postharvest biochemistry/physiology. Basics of biotechnology, biotechnology techniques, and their application to foods. Prerequisite: FSHN 414; and 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: 4 hours.
Same as ACE 430. See ACE 430.

FSHN 426 Biochemical Nutrition I credit: 4 hours.
Biochemistry and metabolism of the B vitamins and derived coenzymes, and 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: 2 hours.
Biochemistry and metabolism of the 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 441 Managing Catering Operations credit: 3 hours.
Basic principles of marketing, financial management, food preparation and service, and personnel management will be applied through the catering business of Bevier Cafe/Spice Box. Students will be responsible for one catered event during the term and help in the execution of all others. 3 undergraduate hours. Prerequisite: FSHN 340.

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, extraction 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 allow 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 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 micro organisms; 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 and biochemistry of intoxication; discusses the types of cellular response to toxic compounds and the role of species variation in the economic use of toxins as pesticides and therapeutic agents. Same as CPSC 433, ENV 400, and VB 549. Prerequisite: MCB 350 or MCB 406, or consent of instructor.

FSHN 499  **Seminar**  credit: 1 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.
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.

FSHN 518  **Chemistry of Lipids in Foods**  credit: 3 hours.
Detailed examination of the chemical and physical properties of lipids in foods. Prerequisite: A food chemistry or biochemistry course is highly recommended.

FSHN 520  **Advanced Clinical Nutrition**  credit: 2 hours.
Same as NUTR 561. See NUTR 561.

FSHN 560  **Membrane Separations Tech**  credit: 2 hours.
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.

FSHN 573  **Advanced Food Microbiology**  credit: 3 hours.
Detailed examination of food and industrial processes dependent on fermentation and other microbial activities. Prerequisite: Organic chemistry, calculus, and MCB 434.

FSHN 575  **Issues in Food Safety**  credit: 3 hours.
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.

FSHN 590  **Dietetic Internship I**  credit: 4 hours.
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. Offered in summer only. Approved for both letter and S/U grading. Prerequisite: Enrollment in dietetic internship program.

FSHN 591  **Dietetic Internship II**  credit: 6 hours.
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.

FSHN 593  **Seminar in Foods**  credit: 2 hours.
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.

FSHN 595  **Food Science Advanced Topics**  credit: 1 TO 4 hours.
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.

FSHN 596  **Seminar in Nutrition**  credit: 2 hours.
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; or consent of instructor.

FSHN 597  **Seminar in Food Science**  credit: 0 TO 1 hours.
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.

FSHN 598  **Advanced Special Problems**  credit: 1 TO 8 hours.
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.

FSHN 599  ***Thesis Research***  credit: 0 TO 16 hours.

Original research designed and conducted under graduate faculty supervisor. May be repeated. Approved for S/U grading only.
Graduate College

Graduate College
Dean of College: Richard P. Wheeler
College Office: 204 Coble Hall, 801 South Wright Street, Champaign
Phone: 333-0035
www.grad.uiuc.edu

GC 499  **Graduate College Study Abroad**  credit: 0 TO 16 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. 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. May be repeated. Approved for S/U grading only.
GE 100 Intro to General Engineering credit: 1 hours.
Course 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.

GE 161 Intro to Business Side of Eng 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. Approved for S/U grading only. Prerequisite: Consent of instructor.

GE 298 Special Topics credit: 1 TO 4 hours.
Lectures on special topics in selected areas of General Engineering. May be repeated in the same or subsequent terms to the maximum of 9 hours. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

GE 310 Intro to General Eng 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.
Studies stress/strain conditions, both 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 Introductory 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. Prerequisite: MATH 385, CS 101, and TAM 212; credit or registration in ECE 211.

GE 330 OR Meth for Profit & Value Eng 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, MATH 230; or consent of instructor.
GE 331  Analyt Methods for Uncertainty  credit: 3 hours.
Introduction to basic concepts that underlie 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. Prerequisite: CS 101, GE 161, MATH 225, and MATH 230, or consent of instructor

GE 361  Interper Skills & Emot Intel  credit: 3 hours.
Introduction to developing interpersonal skills and emotional intelligence. Topics include 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. There is one required laboratory session on a single Saturday. Prerequisite: Sophomore standing.

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. Prerequisite: Junior standing; consent of instructor.

GE 398  Special Topics  credit: 1 TO 4 hours.
Lectures on special topics in selected areas of General Engineering. May be repeated in the same or subsequent terms to the maximum of 9 hours. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

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 or equivalent; senior standing or consent of instructor.

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

GE 401  Patent Law and Related Topics  credit: 2 hours.
Patent law and related topics as they affect the engineering design process; legal requirements of patentability; patent matters in a business environment; patent office procedures; foreign patents; employer-employee relationships; patent valuation, exploitation, infringement, licensing, and assignment; trade secrets, copyrights; trademarks, unfair competition; computer law. Prerequisite: Senior or graduate standing.

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; and analytical simulation. 3 undergraduate hours. No graduate credit. Prerequisite: GE 311 and GE 320.

GE 411  Intro to Reliability Eng  credit: 3 OR 4 hours.
Introduction to concepts in engineering design, testing, and management for highly reliable components and systems. Same as IE 435. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: GE 331 or IE 300 or equivalent; or consent of instructor.

GE 412  Fund of Nondestructive Eval  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. Industrial applications of these techniques towards flaw detection, material properties characterization, impact and fatigue damage evaluation, adhesion, etc., are presented. Current literature is examined. Prerequisite: TAM 324 or equivalent; or consent of instructor.

GE 413  Eng Design Optimization  credit: 3 hours.
Focuses on the 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. Weekly computer programming assignments (using the Matlab programming language) develop software for solving nonlinear mathematical programming problems. Prerequisite: GE 330 and GE 310; or consent of instructor.

GE 420  Digital Control of Dynm System  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 or equivalent.
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.
Dynamics and Control of Robots: Emphasis on 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. Approved for both letter and S/U grading. Prerequisite: GE 320 or equivalent or consent of instructor. Recommended: ECE 470.

GE 423  **Introduction to Mechatronics**  credit: 3 hours.
Introduction to the concept and practice of mechatronics. Topics include 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 MFGE 430. Prerequisite: CS 101 or equivalent; GE 320 or equivalent; or consent of instructor.

GE 424  **State Space Design Meth in Cntl**  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; or equivalents.

GE 490  **General Engineering Seminar**  credit: 0 hours.
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. 0 undergraduate hours. No graduate credit.

GE 494  **Project Design, 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. All 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 412, GE 413, or GE 423; concurrent enrollment in GE 495.

Must enroll concurrently in GE 495.

GE 495  **Project Design, 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.
Studies advanced problems related to General Engineering. Prerequisite: Senior standing; consent of instructor.

GE 498  **Special Topics**  credit: 1 TO 4 hours.
Lectures on special topics in selected areas of General Engineering. May be repeated in the same or separate terms as topics vary to a maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

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 or equivalent.

GE 530  **Multiattribute Decision Making**  credit: 4 hours.
Provides the student with 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 multiattribute 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 or equivalent; or consent of instructor.

GE 531 Genetic Algorithm Methods   credit: 4 hours.
Genetic algorithms search--procedures based on the mechanics of natural genetics and natural selection--are finding increased application to the difficult problems of engineering, science, and commerce. This course 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 242; or consent of instructor.

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; and extensive use of case studies and projects. Prerequisite: GE 320 and IE 485; or equivalents.

GE 541 Engineering Design Project Mgt   credit: 4 hours.
Quantitative evaluation and optimization of project plans, using mathematical programming, multiple-criteria decision making and discrete event simulation; optimal design and sizing of engineering projects; reliability of designs, studied by acyclic network analysis and network simulation; and implementation and control of engineering designs by network analysis. Prerequisite: GE 330 or IE 485 or equivalent.

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.
Lectures on special topics in selected areas of General Engineering. May be repeated in the same or separate terms as topics vary to a maximum of 12 hours. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

GE 599 Thesis Research   credit: 0 TO 16 hours.
May be repeated to a maximum of 16 hours for credit toward the Master's degree. Approved for S/U grading only.
Geography

Head of Department: Bruce Rhoads
Department Office: 220 Davenport Hall, 607 South Mathews, Urbana
Phone: 333-1880
www.uiuc.edu/unit/geog

GEOG 101  **Geog of Developing Countries**  credit: 3 hours.
Examines the manner in which climate, landforms, resources, 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 102  **Weather and Climate**  credit: 4 hours.
Introduction to the processes responsible for the spatial variation of weather and climate with a survey of world climatic patterns.

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

GEOG 103  **Earth's Physical Systems**  credit: 4 hours.
Systems approach to the physical environment, including landform, soil, vegetation, and animal elements, from a human ecological perspective.

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.

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.

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 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 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.

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 403  Landform Studies  credit: 4 hours.**

Systematic analysis of the basic elements of physical geography and their interaction through time and surface expression, including the modifying effects of humans. Complementary to GEOL 401. Prerequisite: GEOG 103 or consent of instructor.

**GEOG 404  Soil Geomorphology  credit: 4 hours.**

Analysis and review of the principles of soils as applied to geomorphology, archaeology, and geography. One weekend and several one-day field trips; student fees reflect actual field expenses. Same as GEOL 404. Prerequisite: GEOG 103 or equivalent, or consent of instructor.

**GEOG 405  Zoogeography  credit: 3 OR 4 hours.**

Introduction to the principles of zoogeography; the central theme explains present distribution of animals, chiefly mammals. 3 undergraduate hours. 4 graduate hours. Prerequisite: GEOG 102 and GEOG 103, IB 104, or consent of instructor.

**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 415  Physical Climatology  credit: 3 OR 4 hours.**

Surveys the basic concepts of energy balance climatology, with emphasis on the topoclimatic scale; lectures supplemented by calculations and field observations examining the effects of location and surface characteristics on determination of climate. 3 undergraduate hours. 4 graduate hours. Prerequisite: MATH 012, PHYS 101, and GEOG 102; or consent of instructor.

**GEOG 421  Earth Systems Modeling  credit: 4 hours.**

Same as ATMS 421, GEOL 481, and NRES 422. See ATMS 421.

**GEOG 425  Hist Geog Amer Land to 1880  credit: 4 hours.**

Changing patterns of spatial organization in the United States and Canada, circa 1400 A.D. to 1880; focuses on landscape patterns through time (especially the built environment), perception of relic landscapes in the present day, and contemporary preservation of historic areas as historic places. Same as LA 425.

**GEOG 426  Hist Geog Amer Land Since 1880  credit: 4 hours.**

Review of the values and technologies which underlie the structuring of the American built environment during the past century; emphasizes the changing meaning of urban, suburban, small town, rural, and wilderness places in American life and is concerned with the image of place as a basis for historic preservation. Same as LA 426.

**GEOG 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 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 446  Ecological Numeracy  credit: 3 hours.**

Same as NRES 446, and UP 446. See UP 446.

**GEOG 453  Russia and Eurasia  credit: 3 hours.**
Political and economic transition of Russia, the Caucasus and Central Asia; geopolitical and demographic trends, and patterns of Soviet environmental legacy in these regions.

GEOG 455  Geog of Central & South Africa  credit: 3 hours.
Regional geography of Africa south of the Sahara.

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).

GEOG 465  Trans Systems and Spatial Dev  credit: 2 TO 4 hours.
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.

GEOG 466  Environmental Policy  credit: 3 OR 4 hours.
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. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in Geography or Political Science or consent of instructor.

GEOG 467  Dynm Simul of Nat Res Problems  credit: 3 OR 4 hours.
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. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: MATH 230 or equivalent; ECON 102 or ECON 103, or equivalent; and ECON 302 or consent of instructor.

GEOG 468  Biological Modeling  credit: 3 OR 4 hours.
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.

GEOG 469  Spatial Ecosystem Modeling  credit: 3 OR 4 hours.
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.

GEOG 470  Intro Quant Methods in Geog  credit: 4 hours.
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.

GEOG 471  Recent Trends in Geog Thought  credit: 4 hours.
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.

GEOG 473  Map Compilation and Construct  credit: 4 hours.
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.

GEOG 476  Applied GIS to Environ Studies  credit: 3 hours.
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.

GEOG 477  Introduction to Remote Sensing  credit: 3 hours.
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.
GEOG 478  Techniques of Remote Sensing  credit: 4 hours.
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.

GEOG 479  Advanced Geog Info Systems  credit: 3 hours.
Introduces the concepts of digital cartographic data, spatial analysis methods, and process modeling. Prerequisite: GEOG 280, GEOG 371, GEOG 379; or equivalent.

GEOG 483  Urban Geography  credit: 3 hours.
Distribution, functions, and internal structures of cities; emphasizes contemporary metropolitan and central city problems.

GEOG 484  Migration and Spatial Interact  credit: 3 OR 4 hours.
Heories and models of migration; contemporary migration patterns; information flow and individual movement in geographic space; and individual level and aggregate models of spatial interaction. 3 undergraduate hours. 4 graduate hours.

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 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. This course may be repeated up 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 563  Historical Geography  credit: 4 hours.
History and philosophy of historical research in geography. Research strategies for the analysis of individual and aggregate spatial behavior in the past, derived geographical patterns, changing spatial behaviors and patterns through time, and historical values underlying contemporary geographical decision making.

GEOG 564  Problems Historical Geography  credit: 4 hours.
Research seminar focused on the interests of participating students and faculty; application of geographic theory to the study of past geography, geographic change in the past, spatial behavior in the past, and/or evidence of spatial behavior in the contemporary scene. Prerequisite: GEOG 470 or equivalent; prior preparation in historical geography.

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. 0 to 8 graduate hours. May be repeated. Approved for both letter and S/U grading.

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

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. Optional field trips.

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 108  **Historical Geology**  credit: 4 hours.
Approaches to understanding the dynamic history of the Earth since its formation by analysis of sedimentary rock systems, evolution and life history, plate tectonic changes through time, and age determination methods. Laboratory work focuses on identification of sedimentary rocks, reconstructing sedimentary environments, fossil identification, and a field trip report. Field trip required. Primarily intended for science and science-oriented students. Prerequisite: GEOL 107 or consent of instructor.

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.

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 130  The Changing Earth System  credit: 3 hours.**
(GEOL 130) Same as ATMS 130, and GEOG 130. See ATMS 130.

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.

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 250  Geology for Engineers  credit: 3 hours.**
Introduction to Earth phenomena and processes that are important to engineers including minerals and rocks, mechanical properties of rocks, soil mechanics, weathering and soil, geologic time, structural geology, streams and groundwater, mass movement, earthquakes and earthquake hazards. Laboratory work focuses on mineral and rock identification, geologic maps and geologic features, landforms and processes Prerequisite: PHYS 211.

**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. 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 ENVS 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 108 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 108 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. Prerequisite: GEOL 108 or consent of instructor.

GEOL 404  Soil Geomorphology  credit: 4 hours.
Same as GEOG 404. See GEOG 404.

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, or intercession; dates depend on location. May be repeated. Prerequisite: GEOL 108 or equivalent; junior or senior standing or consent of instructor.

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 108, 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 108 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 108, 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: PHYS 212 and MATH
242.

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: PHYS 212 and MATH 242.

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 385 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 and CHEM
105; MATH 220; 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. Prerequisite: MATH 220, concurrent registration in CHEM 104 and CHEM 105 or CHEM 204 and CHEM 203 or consent of
instructor.

GEOL 471  Oceanography  credit: 3 hours.
Investigation of the principal factors that control the origin and physiography of ocean basins; the composition and distribution of marine
sediments; the composition, biological productivity, and dynamics of seawater. Prerequisite: GEOL 101 or GEOL 107, and CHEM 102
and CHEM 103, and MATH 220; or consent of instructor.

GEOL 481  Earth Systems Modeling  credit: 4 hours.
Same as ATMS 421, GEOG 421, and NRES 422. See ATMS 421.

GEOL 482  Current Problems in Env Geol  credit: 4 hours.
Survey of geomechanics, groundwater hydrology, aqueous geochemistry, and related topics. Fundamental principles of each topic
are introduced, and applications to currently important problems including natural hazards, well pumping, and waste disposal are
discussed. Same as ENVS 482. Prerequisite: CHEM 104 and CHEM 105, PHYS 101 or PHYS 211; MATH 230 or MATH 345; GEOL
107; and senior standing; or consent of instructor.

GEOL 492  Senior Thesis  credit: 2 TO 8 hours.
Research in geology, with thesis; a thesis must be submitted for credit to be received. May be repeated. No graduate credit. 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. May be repeated. No graduate credit. 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. May be repeated. 1 to 4 graduate hours. 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; written report required for some trips; trips run during spring break, winter break, or intercession; dates depend on location. May be repeated. Prerequisite: 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 532  **Mineralogy of Clays**  credit: 4 hours.
Composition of various types of clays; the structure and properties of the clay minerals; and the origin and mode of occurrence of the clay minerals and clay materials. Same as MSE 526. Prerequisite: GEOL 432 or equivalent; 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 541  **Carbonate Sedimentology**  credit: 4 hours.
Study of genesis and diagenesis of carbonate sediments covering: carbonate deposition, coordination of ultrastructural-petrographic properties and elemental-isotopic composition, nature and environments of diagenetic changes, and temporal trends in carbonates. Prerequisite: GEOL 420, GEOL 436 and GEOL 440; or equivalent, or consent of instructor.

GEOL 550  **Princ of Engineering Geology**  credit: 4 hours.
Study of the effects that lithology, weathering, joints, faults, and ground water have upon engineering projects; the description and origin of geologic factors and their significance in the design, construction, and performance of civil engineering projects. Prerequisite: GEOL 250 or equivalent, or consent of instructor. Field trip or term paper required.

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 385, 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 and CHEM 105 and MATH 242; or equivalent, or consent of instructor.

GEOL 561  **Env Sedimentary Geochemistry**  credit: 4 hours.
Geological conditions for formation of sedimentary rock, sedimentary minerals, and soil, including thermodynamic and kinetic controls as well as the role of microorganisms; geochemical controls on sedimentary water composition. Prerequisite: GEOL 460 or equivalent, 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. May be repeated to a maximum of 12 hours. Approved for S/U grading only. 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. May be repeated. Approved for S/U grading only.

GEOL 599  **Thesis Research**  credit: 0 TO 16 hours.
Individual research under supervision of members of the faculty in their respective fields. May be repeated. Approved for S/U grading only.
German

Germanic Languages and Literatures
Head of Department: Marianne Kalinke
Department Office: 2090 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-1288
www.german.uiuc.edu

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 189  Living German - German Living  credit: 1 hours.
Practice in speaking German for students living in the German House. May be repeated to a maximum of 3 hours. Approved for both letter and S/U grading. Prerequisite: Elementary speaking knowledge of German.

GER 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.

GER 199  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 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  Grimms' Fairy Tales in Context  credit: 3 hours.
Special attention is paid to the Grimms' 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 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. Prerequisite: Completion of the Campus Composition I general education requirement.

This course satisfies the General Education Criteria for:
UIUC: Literature and the Arts
UIUC: Western Civilization
UIUC: Advanced Composition

GER 299  **Study Abroad**  credit: 0 TO 17 hours.
Lectures, seminars, and practical work in German language, literature, civilization, and in other academic areas appropriate to the student's course of study. 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 I**  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:
UIUC: Literature and the Arts

GER 332  **Intro to German Literature II**  credit: 3 hours.
Introductory study of representative works (prose, drama, lyric) by outstanding German, Austrian, and Swiss writers of the modern period. Prerequisite: GER 331 or equivalent.
This course satisfies the General Education Criteria for:
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.

GER 401  **Current Issues in German Media**  credit: 3 hours.
Introduction to current issues in German media. Taught in German. Prerequisite: GER 212 or equivalent.

GER 402  **German Stylistics**  credit: 3 hours.
Intensive study of problems of advanced German style with emphasis on written practice. Prerequisite: GER 401, or equivalent.

GER 403  **Translation, Theory & Practice**  credit: 3 hours.
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.

GER 420  **History of German Civilization**  credit: 3 OR 4 hours.
Selected topical, historical, and pictorial analysis of Germany's culture and civilization. 4 undergraduate hours. 3 graduate hours.

GER 460  **Principles of Language Testing**  credit: 3 OR 4 hours.
Same as EIL 460, EPSY 487, FR 460, ITAL 460, PORT 460, SLS 460, and SPAN 460. See EIL 460.

GER 465  **Ling Structures of German**  credit: 3 hours.
Survey of the linguistic structures of German in historical, geographic, and social context. Prerequisite: Three years of college German or equivalent.

GER 469  **Intro Second Lang Learn Tchg**  credit: 4 hours.
GER 470  Middle Ages to Baroque  credit: 3 hours.
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.

GER 471  Enlightenment to Romanticism  credit: 3 hours.
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.

GER 472  Realism to Expressionism  credit: 3 hours.
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.

GER 473  1920s to Today  credit: 3 hours.
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.

GER 474  Poetics  credit: 3 hours.
Study of poetic forms and genres such as poems, short stories, novellas, novels, dramas, in their historical development from the classical to the modern period illustrated by typical examples. Prerequisite: GER 332 or equivalent.

GER 475  Intro to Comm Lang Tchg  credit: 4 hours.
Same as FR 475, LAT 475, RUSS 475, and SPAN 475. See SPAN 475.

GER 478  Topics Secondary Lang Tchg  credit: 4 hours.
Same as FR 478, LAT 478, RUSS 478, and SPAN 478. See SPAN 478.

GER 482  Computer Foreign Lang Tchg  credit: 4 hours.
Same as CLCV 482, EIL 482, FR 482, HUM 482, ITAL 482, LING 486, PORT 482, SLAV 482, and SPAN 482. See HUM 482.

GER 489  Theoretical Foundations of SLA  credit: 3 OR 4 hours.
Same as EIL 489, FR 481, ITAL 489, LING 489, PORT 489, SLS 489, and SPAN 489. See EIL 489.

GER 491  Honors Senior Thesis  credit: 1 TO 4 hours.
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: 3 hours.
Same as EIL 580, FR 580, ITAL 580, PORT 580, SLS 580, and SPAN 580. See SPAN 580.

GER 581  Ling Psych Found of Lang Tchg  credit: 4 hours.

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, 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.
May be repeated. Approved for S/U grading only.
Global Studies

International Programs and Studies
Associate Provost: Earl D. Kellogg
Office: 303 International Studies Building, 910 South Fifth, Champaign
Phone: 333-6104
www.ips.uiuc.edu

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 188  Ethnic Wars and Globalization  credit: 3 hours.
Same as ANTH 188. See ANTH 188.

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 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 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

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 367  Math Issues National Security  credit: 3 hours.
Same as MATH 367. See MATH 367.

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  Topics in Energy Security  credit: 3 hours.
GLBL 481  Writ Sem on Tech & Security  credit: 3 hours.
Same as NPRE 481. See NPRE 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.
Germanic

Germanic Languages and Literatures
Head of Department: Marianne Kalinke
Department Office: 2090 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-1288
www.german.uiuc.edu

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

GMC 526  **Gothic**  credit: 4 hours.
Synchronic and diachronic study of the Gothic language and its relationship to other Germanic and Indo-European languages; extensive reading of extant texts. Same as MDVL 526. Prerequisite: Consent of instructor.

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
Chair: Kirk Freudenburg
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. No graduate credit. 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. 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. May be repeated. Approved for S/U grading only.
Gender and Women's Studies

Gender and Women's Studies Program
Director of Program: Kal Alston
Program Office: 911 South Sixth Street, Champaign
Phone: 333-2990
www.womstd.uiuc.edu

GWS 103  Black Women in the Diaspora  credit: 3 hours.
Same as AFRO 103 and AFST 103. See AFRO 103.

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: 1 TO 5 hours.
Approved for both letter and S/U grading. May be repeated.

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 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 Perspec
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 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 272  Women and Politics  credit: 3 hours.
Same as PS 272. See PS 272.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences

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 319  Women in Japanese Lit  credit: 3 hours.
Same as CWL 319, and EALC 319. See EALC 319.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Literature and the Arts

GWS 320  Gender & Latina/o Migration  credit: 3 hours.
Same as LLS 320 and SOC 321. See LLS 320.

GWS 334  Brazilian Women’s Lit Trans  credit: 3 hours.
Same as PORT 334. See PORT 334.
This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts
UIUC: Western Compartment Cult

GWS 340  Gender, Relationships & Society  credit: 3 hours.
Same as HDFS 340, and SOC 322. See HDFS 340.

GWS 342  Women in the Labor Market  credit: 3 hours.
Same as ECON 342. See ECON 342.

GWS 350  Intro to Feminist Theory  credit: 3 hours.
Interdisciplinary introductory survey of feminist theory. Traces developments in feminist theory and explores contemporary debates.

GWS 356  Sex & Gender in Popular Media  credit: 3 hours.
Same as COMM 356. See COMM 356.
This course satisfies the General Education Criteria for a:
UIUC: Western Compartment Cult
GWS 360  Women and the Visual Arts  credit: 3 hours.
Same as ARTH 360. See ARTH 360.

GWS 361  Women in East Asia  credit: 3 hours.
Same as EALC 361. See EALC 361.
This course satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC Social Sciences

GWS 367  US History of Medicine  credit: 3 hours.
Same as HIST 368. See HIST 368.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

GWS 370  Intro to Queer Studies  credit: 3 hours.
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.

GWS 380  Black Women Hist & Cultures  credit: 3 hours.
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.

GWS 390  Individual Study  credit: 0 TO 3 hours.
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. Prerequisite: One course in Gender and Women's Studies; consent of instructor.

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 418  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 LING 432, and SPCM 432. See SPCM 432.

GWS 435  Commodifying Difference  credit: 3 OR 4 hours.
Same as LLS 435, AFRO 435, AAS 435, and COMM 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.
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.
One course in Gender and Women's Studies at the 200- or 300-level, or consent of instructor. 3 undergraduate hours. 4 graduate hours.

GWS 475  Women and Society in Scan Lit  credit: 3 hours.
Same as CWL 475, and SCAN 475. See SCAN 475.

GWS 480  Gender Roles & 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 490  Seminar in Women's Studies  credit: 2 TO 4 hours.
Interdisciplinary seminar on special topics in women's studies 3 undergraduate hours. 2 to 4 graduate hours. May be repeated one time if topics vary. Prerequisite: GWS 250 or GWS 260, and two courses in Gender and Women's Studies at the 200-300 levels; junior standing; or consent of instructor.

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.

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 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 COMM 560. See COMM 560.

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 590  Topics in WGS  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 in Commmty and Rural Stud**  credit: 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.

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 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.
Training in field research methods, including various forms of observation and interviewing, to gain a comprehensive and holistic view of social life through the study of people in natural settings in a selected field site. Topics include: historical background of qualitative research, theoretical traditions informing qualitative studies, site and informant selection, research strategies, data analysis, and managing field relations. Emphasizes use of qualitative methods to study diverse families and neighborhood settings.

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 595  **Seminar**  credit: 1 TO 4 hours.
Discussion and evaluation of current literature on selected topics in human and community development. May be repeated.

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.
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 205  **Infancy and Early Childhood**  credit: 4 hours.
Reviews development during the first five years of life, including cognitive, social, and biological aspects of early development; lab involves first-hand observation of young children to supplement and extend lecture material. Prerequisite: HDFS 105 or PSYC 216.

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.
HDFS 262  Motor Develop, Growth & Form  credit: 3 hours.
Same as KIN 262. See KIN 262.

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 Introduction to Human Development.

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 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 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 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.

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 PSY 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 407  Child and Youth Services**  credit: 3 hours.
Designed to provide a set of learning activities and experiences that will allow students to study in-depth the issues surrounding the development, implementation, and evaluation of intervention programs for children from economically disadvantaged and high-risk backgrounds. Emphasis is placed on the synthesis and application of knowledge gained in prior courses to develop potential solutions to societal problems facing children. Prerequisite: HDFS 205 and senior 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 hours undergraduate. 4 hours graduate. Prerequisite: HDFS 220.

**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 hours.
Course 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. The class 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. 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 hours undergraduate. 4 hours graduate. 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 470  International Families**  credit: 3 hours.
Examines the impact of technological change on the family in developing nations, compared with the Western world; includes coverage of the effects of various development approaches and projects on family roles, form, and resource access, and the effects of family characteristics on the success of development projects. Prerequisite: HDFS 220.

HDFS 499  Seminar  credit: 1 TO 3 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 501  Human Dev Research and Theory  credit: 4 hours.
Overview of basic theories and theoretical perspectives on human development; focuses on major concepts, issues, and questions in the field.

HDFS 502  Topics in Human Development  credit: 4 hours.
In-depth analysis of a current issue in human development with special emphasis on general methodological problems illustrated through examples from one area of research.

HDFS 521  Family Research and Theory  credit: 4 hours.
Contemporary family theories and their application in family research.

HDFS 522  Topics in Family Studies  credit: 4 hours.
In-depth analysis of a current issue in family studies with special emphasis on general methodological problems illustrated through examples from one area of 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 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 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.
# Hebrew, Modern and Classical

Religion, Program for the Study of  
Director of Program: Raj Pandharipande  
Program Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana  
Phone: 333-0473  
www.relst.uiuc.edu

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>HEBR 199</td>
<td>Undergraduate Open Seminar</td>
<td>1 TO 5 hours</td>
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<td>May be repeated.</td>
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<tr>
<td>HEBR 201</td>
<td>Elementary Modern Hebrew I</td>
<td>5 hours</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HEBR 202</td>
<td>Elementary Modern Hebrew II</td>
<td>5 hours</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HEBR 205</td>
<td>Intensive Biblical Hebrew</td>
<td>5 hours</td>
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<td></td>
<td>Acquisition of reading knowledge of biblical Hebrew and a familiarity with all major aspects of biblical Hebrew grammar. Same as RLST 205.</td>
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<tr>
<td>HEBR 403</td>
<td>Intermediate Modern Hebrew I</td>
<td>4 OR 5 hours</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HEBR 404</td>
<td>Intermediate Modern Hebrew II</td>
<td>4 OR 5 hours</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HEBR 405</td>
<td>Advanced Modern Hebrew I</td>
<td>3 hours</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HEBR 406</td>
<td>Advanced Modern Hebrew II</td>
<td>3 hours</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HEBR 407</td>
<td>Topics Hebrew Lang &amp; Lit I</td>
<td>3 hours</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HEBR 408</td>
<td>Topics Hebrew Lang &amp; Lit II</td>
<td>3 hours</td>
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<td></td>
<td>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.</td>
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</table>
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 satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
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  Civilization of India  credit: 3 hours.
Multidisciplinary introduction to the civilizations of South Asia from the Indus Valley civilization to the present including the development of Hinduism, Buddhism and Indian Islam, state systems, arts and literature, social organization and daily life. 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 underdeveloped 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.
NEW COURSE 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
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

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

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
UIUC: Hist&Philosoph Perspect

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

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 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 258  Contemp Politics Ideology  credit: 3 hours.
Interpretation of the contemporary world covering the legacy of imperialism, militarism, and world politics, the revolt of the masses, the totalitarian state, nationalism, internationalism, and such related topics.
This course satisfies the General Education Criteria for a:
HIST 259  **Contemp Econ Soc Culture**  credit: 3 hours.
Interpretation of the contemporary world covering the economics of global power, ideological and social forces, the individual and the modern mind, the collective society, the personality in history, and related topics.
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 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:
UIUC: Hist&Philosoph Perspect
UIUC: Western Compartv Cult

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 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- nonJewish 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 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, RST 242, and NRES 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 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 295  Honors Colloquium  credit: 3 hours.
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. 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.

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

HIST 330  **South Asian Military History**  credit: 3 hours.
Discusses military institutions and styles of warfare on the South Asian subcontinent from the earliest recorded history to the independence of Bangladesh. Emphasizes the relationship between culture, society, and warfare. Views the subject from a South Asian as opposed to a British Imperial perspective.

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. Prerequisite: 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 encounter 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 360  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 361  Euro Thght & Soc Since 1789  credit: 3 hours.
Examines the reciprocal relationship between thought and society in western Europe from the French Renaissance 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 364  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 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.

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

HIST 368  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 367.

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

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 American's embracing of a republican form of government and their invention of a republican culture. Course concludes with the role both that form of government and that 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 between 1850 and 1877, with emphasis on the causes of the war, wartime problems of the North and South, and efforts to create a new Union after the war.

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 396  Special Topics  credit: 3 hours.
Topics are given on an experimental one-time-only basis.

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 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.

HIST 408  **Four Lat Am Political Ideas**  credit: 2 TO 4 hours.
Examines Latin American schools of thought widely influential in the Third World. Considers propositions of each set of ideas, historical development of each, relations among the schools, critiques, and transformations. Same as LAST 476. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of history or social science.

HIST 409  **Latin American Ethnobotany**  credit: 3 OR 4 hours.
Same as ANTH 401, IB 454, and LAST 401. See LAST 401.

HIST 410  **20thC Africa Colonial Era**  credit: 3 OR 4 hours.
The peoples, cultures, and societies of Africa under European colonial dominance. Although attention is paid to colonial policies and practices, the primary focus is on the continuing autonomy of African peoples. Special attention will be given to the cases of Ethiopia and South Africa. 3 undergraduate hours. 4 graduate hours. Prerequisite: HIST 210, HIST 211, or AFST 222, or junior standing.

HIST 411  **Africa 1945 to the Present**  credit: 2 TO 4 hours.
Historical investigation of African political economies based on selected case studies; includes development of the colonial economy, economic bases of African nationalism, and postindependence underdevelopment and attempts to escape from it. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or enrollment in the African Studies program.

HIST 412  **Southern Africa Race & Power**  credit: 3 OR 4 hours.
Interdisciplinary survey of both the internal and international dimensions of the changing situation in Africa south of the Zambezi; focuses on the historical background to, and a political, economic, and social analysis of current events in the Republic of South Africa, Mozambique, Namibia, and Zimbabwe, emphasizing the central significance of race and power in this region. Same as AFST 425. 3 undergraduate hours. 4 graduate hours. Prerequisite: HIST 211 or AFST 222.

HIST 413  **The Horn of Africa**  credit: 3 OR 4 hours.
Complete survey of the history of the Horn, from the origins of agriculture and pastoralism to the late twentieth century. Covers classical Aksum, medieval Ethiopia, and the coastal Islamic city states; concentrates on the twentieth century and the rise of conflicting nationalisms, the outbreak of revolution, and famine. 3 undergraduate hours. 4 graduate hours. Prerequisite: HIST 211 or AFST 222 or junior standing.

HIST 420  **China Under the Ch'ing Dynasty**  credit: 2 TO 4 hours.
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.

HIST 422  **Soc-Econ Hist Modern China**  credit: 2 TO 4 hours.
Disintegration of traditional social and economic systems during the nineteenth and twentieth centuries, and the political effects of that disintegration; examines changes in the agricultural economy, changing rural elites, urbanization, and emergence of new social classes. 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.

HIST 425  **Classical Chinese Thought**  credit: 3 OR 4 hours.
Same as CWL 478, and EALC 476. See EALC 476.

HIST 426  **Early Modern Japan**  credit: 3 OR 4 hours.
Study of the people, culture, and society from 1600 to 1868. Traces the rise of Japan's first truly national culture. Same as EALC 426. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in Japanese history: EALC 250, HIST 120, HIST 226, or HIST 227, graduate standing, or consent of instructor.

HIST 427  **Twentieth-Century Japan**  credit: 3 OR 4 hours.
Study of the people, culture, and society of Japan from 1868 to the present. Traces Japan's transformation from an insular bastion of "centralized feudalism" into a cross-cultural crucible of post-industrial democracy. Same as EALC 427. 3 undergraduate hours. 4 graduate hours. Prerequisite: One course in Japanese history: EALC 250, HIST 120, HIST 226, or HIST 227, graduate standing, or consent of instructor.

HIST 430  **India from Colony to Nation**  credit: 2 TO 4 hours.
Mughal Empire and British Raj, Indian national awakening, and struggle for independence under Ghandi and Nehru. 3 undergraduate hours. 2 or 4 graduate hours.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HIST 432</td>
<td><em>History of Early Judaism</em></td>
<td>3 OR 4 hours</td>
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<td></td>
<td>Same as RLST 442. See RLST 442.</td>
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<tr>
<td>HIST 433</td>
<td><em>History of Jews in Diaspora</em></td>
<td>3 OR 4 hours</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HIST 434</td>
<td><em>Women in Muslim Societies</em></td>
<td>3 OR 4 hours</td>
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<tr>
<td></td>
<td>Same as ANTH 403, GLBL 403, GWS 403, and RLST 403. See RLST 403.</td>
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<tr>
<td>HIST 435</td>
<td><em>Middle East 1566-1914</em></td>
<td>3 OR 4 hours</td>
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<td></td>
<td>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 &quot;decline&quot; and &quot;awakening&quot;, 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.</td>
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<tr>
<td>HIST 436</td>
<td><em>Jewish Life-Writing</em></td>
<td>3 OR 4 hours</td>
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<td>Same as CWL 421, RLST 420, SLAV 420, and YDSH 420. See YDSH 420.</td>
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<tr>
<td>HIST 437</td>
<td><em>Middle East in 20th Century</em></td>
<td>2 TO 4 hours</td>
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<td>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.</td>
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<tr>
<td>HIST 438</td>
<td><em>Egypt Since World War I</em></td>
<td>2 TO 4 hours</td>
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<td>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.</td>
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<tr>
<td>HIST 439</td>
<td><em>The Ottoman Empire</em></td>
<td>2 TO 4 hours</td>
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<td>Economy, society, law, and government; the Ottomans and Mediterranean society; Ottoman culture and Islamic tradition; minorities; trade, diplomacy, and capitulations; &quot;decline&quot; 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.</td>
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<tr>
<td>HIST 440</td>
<td><em>Roman Republic to 44 B C</em></td>
<td>3 OR 4 hours</td>
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<td>Prerequisite: One year of college history or consent of instructor.</td>
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<tr>
<td>HIST 441</td>
<td><em>The Roman Empire</em></td>
<td>3 OR 4 hours</td>
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<td></td>
<td>Prerequisite: One year of college history or consent of instructor.</td>
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<tr>
<td>HIST 442</td>
<td><em>Roman Law and Legal Trad</em></td>
<td>3 OR 4 hours</td>
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<td>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.</td>
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<tr>
<td>HIST 444</td>
<td><em>European Education to 1600</em></td>
<td>2 OR 3 hours</td>
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<td></td>
<td>Same as EPS 403, and MDVL 403. See EPS 403. 3 undergraduate hours. 2 or 4 graduate hours.</td>
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<td>This course satisfies the General Education Criteria for a:</td>
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<td></td>
<td>UIUC: Hist&amp;Philosoph Perspect</td>
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<td>UIUC: Western Compartv Cult</td>
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<td></td>
<td>UIUC: Advanced Composition</td>
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<tr>
<td>HIST 445</td>
<td><em>Medieval England</em></td>
<td>2 TO 4 hours</td>
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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 hours undergraduate. 4 hours graduate. Prerequisite: HIST 250, HIST 251, HIST 347, HIST 348, or HIST 349, or consent of instructor.

HIST 453  Euro Intl Affairs 1815-1914  credit: 2 TO 4 hours.
The history of European international affairs from the Vienna Congress to the First World War, with the main focus on political developments, but with considerable attention also paid to the influence of domestic politics and social and economic changes on foreign policy. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history or consent of instructor.

HIST 454  Euro Intl Affairs Since 1914  credit: 2 TO 4 hours.
History of European international affairs from the First World War to the present day, concentrating on political developments, especially the two world wars, but including the impact of domestic politics, ideological struggle, and socio-economic change upon foreign policy. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: One year of college history 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 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 1960s. 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 490  **Individual 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. This course may be repeated up 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 482)

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 471)

HIST 505  Seminar in History of Medicine  credit: 4 hours.
(HIST 472)

Same as SOC 570. See SOC 570.

HIST 507  Prob in Latin American Hist  credit: 4 hours.
(HIST 488)

HIST 508  Seminar in Latin American Hist  credit: 4 hours.
(HIST 461)

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 permission of the instructor.

HIST 522  Topics in Korean History  credit: 4 hours.
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 484)

HIST 545  Seminar in Early Modern Europe  credit: 4 hours.
(HIST 417)

HIST 546  Prob English Hist Since 1688  credit: 4 hours.
(HIST 480)

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 425)

HIST 550  Prob Early Mod European Hist  credit: 4 hours.
(HIST 477)

HIST 551  Prob European Hist Since 1789  credit: 4 hours.
(HIST 478)

HIST 552  European Seminar Since 1789  credit: 4 hours.
(HIST 421)

HIST 560  Problems in Russian History  credit: 4 hours.
(HIST 481)

HIST 561  Seminar in Russian History  credit: 4 hours.
(HIST 427)

HIST 570  Prob in American Hist to 1830  credit: 4 hours.
(HIST 486)

HIST 571  Seminar in Amer Hist to 1789  credit: 4 hours.
(HIST 451)
HIST 572  Prob in US Hist Since 1815  credit: 4 hours.
(HIST 487)

HIST 573  Seminar Amer Hist Since 1789  credit: 4 hours.
(HIST 453)

HIST 574  Current Legal Problems  credit: 1 TO 4 hours.
Same as LAW 792. See LAW 792.

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 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. 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 OR 5 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. Participation in the language laboratory is required. 5 undergraduate hours. 4 graduate hours. Prerequisite: HNDI 202 or equivalent.

HNDI 404  **Intermediate Hindi II**  credit: 4 OR 5 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. Participation in the language laboratory is required. 5 undergraduate hours. 4 graduate hours. 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: Wesley Jarrell
Department Address: W-503 Turner Hall, 1102 South Goodwin Avenue, Urbana
Phone: 333-2770
www.nres.uiuc.edu

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HORT 100</td>
<td>Introduction to Horticulture</td>
<td>3</td>
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<tr>
<td></td>
<td>Basic principles of plant growth and development as they apply to the production, marketing, and utilization of fruits, vegetables, and ornamental plants.</td>
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<tr>
<td>HORT 105</td>
<td>Vegetable Gardening</td>
<td>3</td>
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<td>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.</td>
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<tr>
<td>HORT 106</td>
<td>Home Horticulture</td>
<td>3</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HORT 107</td>
<td>Introduction to Floral Design</td>
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<td></td>
<td>Introduces the art of arranging flowers, foliages, and accessories according to the principles of design. Lecture and lab.</td>
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<tr>
<td>HORT 180</td>
<td>Medicinal Plants and Herbology</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HORT 199</td>
<td>Undergraduate Open Seminar</td>
<td>1 TO 5</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HORT 226</td>
<td>Introduction to Weed Science</td>
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<td></td>
<td>Same as CPSC 226. See CPSC 226.</td>
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<tr>
<td>HORT 236</td>
<td>Intro to Turfgrass Management</td>
<td>3</td>
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<td>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.</td>
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<tr>
<td>HORT 240</td>
<td>Plant Propagation</td>
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<td>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.</td>
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<tr>
<td>HORT 246</td>
<td>Floral Design I</td>
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<td></td>
<td>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.</td>
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<tr>
<td>HORT 250</td>
<td>Floral Crop Quality Evaluation</td>
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<td>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 total of 2 hours if topics vary.</td>
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<tr>
<td>HORT 261</td>
<td>Biotechnology in Agriculture</td>
<td>3</td>
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<td></td>
<td>Same as CPSC 261. See CPSC 261.</td>
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</tbody>
</table>
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. Lab fee required. Prerequisite: HORT 246.

HORT 358  **Arboriculture**  credit: 3 hours.
Evaluates criteria for woody landscape plant selection, cultivation, valuation, and maintenance; links the technical skills and practices for commercial arborists to an understanding of woody plant physiology and anatomy; emphasizes marketing and promotion of horticultural expertise. Offered in alternate years. Prerequisite: NRES 302 or HORT 301 or concurrent enrollment and NRES 201.

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 364  Vegetable Crop Production  credit: 3 hours.
Vegetable production with emphasis on cultural considerations, harvest, and handling of selected vegetable crops; integrates principles of plant growth and vegetable physiology into vegetable production schemes; covers vegetable classification, growing practices and handling. Students may not receive credit for both HORT 364 and 105. Offered in alternate years. Prerequisite: NRES 201 and HORT 100.

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: NRES 201 and HORT 100.

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 422  Plant Physiology Laboratory  credit: 4 hours.
Same as CPSC 485, and IB 422. See IB 422.

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 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. Students may not receive credit 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 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 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 467 Postharvest Phys of Hort Crops credit: 4 hours.
Physiology, biochemistry, and anatomy of fruits and vegetables during development, maturation, and ripening in situ and in storage. Offered in alternate years. Prerequisite: IB 103 and CHEM 104.

HORT 482 Plant Tissue Culture credit: 4 hours.
Survey, description, and application 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 as topics vary to a maximum of 12 hours.

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 568 Plant Pigments credit: 4 hours.
Nature, function, distribution, biosynthesis, degradation, separation, and spectroscopic properties of pyrrole, carotenoid, quinone, and anthocyanin pigments. Same as IB 588. Offered in alternate years. Prerequisite: IB 420.

HORT 588 Plant Biochemistry credit: 4 hours.
Same as CPSC 588, and IB 524. See CPSC 588.
Human Resource Education

Human Resource Education
Head of Department: Scott D. Johnson
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. Equips students with a conceptual framework for instruction and provides guidance and experience in the planning, delivery and evaluation of instruction.

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 workplace 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.
Covers a wide range of instructional technologies that are used for instructional and administrative purposes. Although traditional instructional media such as overhead projectors, slide projectors, film projectors and VCRs are considered in the course, emphasis is on computer applications in instructional technology. Through course readings, discussions, and projects, students gain skills in choosing appropriate instructional technologies, designing effective presentations, and effectively 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 settings.

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: requests for initiation of this course may be made by students or faculty members. 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; students or faculty members may make requests for initiation of sections of this course. 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. Prerequisite: Consent of instructor.

**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 technological investigations for the improvement of instructional programs in areas related to education and training. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor, demonstrated ability to pursue special study or investigation proposes.

**HRE 501  **The Community College  **credit: 4 hours.**
Same as EOL 573. See EOL 573.

**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. Prerequisite: Basic course in psychology of learning or consent of instructor.

**HRE 517  **Community College Program Dev  **credit: 4 hours.**
Local, state, and national policies for community college education; organizing for policy making and program development; and developing desirable policies and programs.

**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. Prerequisite: HRE 401 or consent of instructor.

**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. Prerequisite: HRE 401 or consent of instructor.

**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. Prerequisite: HRE 401 or consent of instructor.

**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 Prerequisite: One HRD course or consent of instructor.

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 580 Disciplined Inquiry in HRE 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 Designing Research Studies credit: 4 hours.
Study and evaluation of examples of research designs in HRE; consideration of the research needed to solve present problems. Each student proposes and completes a brief research project or plans in detail a major research project to be completed later Prerequisite: HRE 580 or equivalent; or consent of instructor.

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.

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 Prerequisite: Limited to students who have been admitted for doctoral study

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 up to 1 time(s). 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 FR 471, GER 469, 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 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.
Integrative Biology

Integrative Biology, School of
Director of School: Fred Delcomyn
School Office: 286 Morrill Hall, 505 South Goodwin Avenue, Urbana
Phone: 333-3044
www.life.uiuc.edu/sib

**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; emphasizes 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 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 201 **Genetics and Evolution** credit: 4 hours.
Principles of Mendelian genetics, origins of genetic variation, natural selection, and evolution. The laboratory emphasizes genetics, biodiversity, plant and animal phylogeny, and evolution. Prerequisite: IB 150 and MCB 150.

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 form and function. 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.

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 243 **Sociality of the Great Apes** credit: 3 hours.
Same as ANTH 243. See ANTH 243.

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 this course and MCB 250 or MCB 252. Prerequisite: Admission to the IB honors biology option; credit or concurrent registration in organic chemistry.

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. Students may not receive credit for this course and IB 202. Prerequisite: IB 270; good standing in the honors biology option.

IB 280 **Forest and Landscape Insects** credit: 3 hours.
Same as NRES 280. See NRES 280.

IB 301 **Evolutionary Biology** credit: 3 hours.
Introduction to the evidence for evolution and the origin and types of genetic variation, stressing various modes of selection and modern observations and experiments illustrating the evolutionary process. Prerequisite: IB 201; or consent of instructor.

IB 311 **Behavior of Domestic Animals** credit: 3 hours.
Same as ANSC 363. See ANSC 363.

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 366  Environmental Botany  credit: 3 hours.
Discussion, lab and field course dealing with botanical natural history and related environmental issues. Major topics include: diversity of biomes and habitats; taxonomy and identification of major plant groups; impact of humans on habitats and plants; and efforts to deal with that impact. The Illinois flora and habitats are emphasized and integrated into a global perspective of change, including those driven by geological, ecological, climatic, and anthropocentric forces. Same as NRES 366. Prerequisite: IB 102, IB 103, or IB 150; 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 this course and either IB 201 or IB 203. 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 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 201; or consent of instructor.

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 201; 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 150 and MCB 150; IB 201 recommended; or consent of instructor.

IB 407  Plant Molecular Biology  credit: 3 hours.
Presents the basic concepts of plant gene expression, the structure and expression of the three plant genomes, and special topics on plant vectors, plant viruses, and transposable elements. Same as MCB 438. Offered in alternate years. Prerequisite: MCB 250 or consent of instructor.

IB 408  Eukaryotic Mol Biol Techniques  credit: 4 hours.
Laboratory course in plant molecular biology supplementing IB 407 with techniques of plant organelle isolation, DNA extraction, cell culture and recombinant DNA techniques. Prerequisite: IB 407 ; 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.

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IB 422  **Plant Physiology Laboratory**  credit: 4 hours.
Laboratory course in plant physiology; a supplement to IB 420 which serves the needs of those interested in acquiring familiarity with techniques of experimental plant physiology. Same as CPSC 485 and HORT 422. Prerequisite: Credit or concurrent registration in IB 420 or equivalent.

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 (hydrothermal, deep sea, salt lakes, desert and polar regions). Prerequisite: IB 150 and MCB 150; CHEM 232; IB 202 recommended; 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 150 and MCB 150; IB 201, IB 202, and IB 203; 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 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 PSYC 432, ANTH 432, and NEUR 432. Prerequisite: IB 150 and either IB 201 or IB 429 or consent of instructor.

IB 433  **Comparative Vertebrate Morphol**  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. Prerequisite: IB 201, IB 202 or consent of instructor.

IB 440  **Plants and Global Change**  credit: 3 hours.
Same as CPSC 431, and NRES 431. See CPSC 431.

IB 441  **Plant Ecology**  credit: 4 OR 5 hours.
Principles of ecology in relation to plants as individuals, populations, and communities, and as a component of ecosystems. Lecture and field course. 5 undergraduate hours. 4 graduate hours. Prerequisite: IB 203; or consent of instructor.

IB 442  **Functional Ecology of Trees**  credit: 3 hours.
Lecture course providing a synthesis of the physiological and morphological mechanisms defining the ecological performance of trees and other woody plants in natural communities. Practical experience with field physiological measurements will be provided. Offered in alternate years. Same as NRES 442. Prerequisite: IB 420, 441, or NRES 426 recommended; or consent of instructor.

**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; or consent of instructor.

**IB 444  Insect Ecology  credit: 3 TO 5 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. 3 or 5 undergraduate hours, or 3 or 4 graduate hours. (Lecture only, 3 undergraduate hours, or 3 graduate hours; with laboratory, 5 undergraduate hours, or 4 graduate 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.

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

**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 molecular techniques in conversation 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. 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 460  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 461  **Ornithology**  credit: 4 OR 5 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. 5 undergraduate hours. 4 graduate hours. Offered in alternate years. Prerequisite: IB 203; or consent of instructor.

IB 462  **Mammalogy**  credit: 4 OR 5 hours.
Classification, distribution, structure, function, life history, evolution and identification of mammals. Lecture/discussions, laboratory and field work. The laboratory includes vertebrate dissection. 5 undergraduate hours. 4 graduate hours. 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 201; 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 201; or consent of instructor.

IB 465  **Field Vertebrate Natural Hist**  credit: 4 hours.
Laboratory and field course. Intensive study of North American vertebrates with emphasis on vertebrates of Illinois; taxonomy, life histories, habitats, and feeding habits of all the common resident species. Prerequisite: IB 203; or consent of instructor.

IB 466  **Invertebrate Zoology**  credit: 4 OR 5 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. 5 undergraduate hours. 4 graduate hours. Offered in alternate years. Prerequisite: IB 201; 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 201, 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 201 or IB 303 or IB 469; 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 201 recommended; or consent of instructor.

IB 470  **Field Botany**  credit: 4 OR 5 hours.
Identification and classification of native and naturalized flowering plants of eastern North America. Lecture and laboratory. 5 undergraduate hours. 4 graduate hours. 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. Lecture and laboratory. Offered in alternate years. Prerequisite: IB 150 and MCB 150; IB 201 recommended; or consent of instructor.

IB 480  **Ecological Parasitology**  credit: 3 hours.
Ecological perspective on parasite-host associations and parasitic diseases of vertebrates. Parasite life cycles, and the major parasitic groups; protozoa, platyhelminthes, nematodes and arthropods will be covered. The relation of parasitism to other ecological associations such as predation and competition will be emphasized. Offered in alternate years. Same as PATH 523. Prerequisite: IB 203, or consent of instructor.

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 instructor

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. Prerequisite: IB 150
and MCB 150 or consent of instructor.

IB 484  Biol Control of Insect Pests  credit: 2 hours.
Examines the use of biological methods for the control of insect pests; emphasizes the use of natural enemies in control programs;
and discusses life history characteristics of parasitoids and predators, ecological principles of population regulation, techniques and
protocols in implementation of control programs and related topics. Offered in alternate years. Same as CPSC 477. 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 488  Quantitative Biology I  credit: 4 hours.
Theory and practical application in biology of probability and statistics; lectures and assigned problems Prerequisite: MATH 220; or
consent of instructor.

IB 489  Quantitative Biology II  credit: 4 hours.
Additional topics in biostatistics, emphasizing nonparametric comparative, correlational, and sequential analyses; multi-dimensional
contingency analyses, circular statistics, binomial sequential sampling. Lecture and discussion. Prerequisite: IB 488; or consent of
instructor.

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, or 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. Offered in alternate years. Prerequisite: IB 201, or consent of instructor.

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 544 Concepts in Ethology  credit: 2 hours.
Discussion, review, and critical analysis of general concepts and specific problems in behavior with new topics each term. May be repeated. Approved for both letter and S/U grading.

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 553  **Topics in Population Biology**  credit: 2 hours.
Lecture and discussion of problems in population biology, with a different topic each term. Approved for both letter and S/U grading. May be repeated to a maximum of 16 hours.

IB 571  **Advanced Mycology**  credit: 2 hours.
Several classes of fungi and their activities are considered in successive terms. Special groups within these classes may be selected for concentrated study, depending upon the student's interest in mycology. Prerequisite: IB 471 or consent of instructor.

IB 588  **Plant Pigments**  credit: 4 hours.
Same as HORT 568. See HORT 568.

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.

IB 591  **Design/Analysis Biomed Exper**  credit: 4 hours.
Same as PATH 591. See PATH 591.

IB 592  **Biostatistics**  credit: 4 hours.
Same as CHLH 590 and PATH 524. See PATH 524.
Industrial Engineering

Mechanical and Industrial Engineering
Head of Department: Richard O. Buckius
Department Office: 144 Mechanical Engineering Building, 1206 West Green, Urbana
Phone: 333-1176
www.mie.uiuc.edu

IE 170  **Computer-Aided Design**  credit: 3 hours.
Same as ME 170. See ME 170.

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

IE 300  **Analysis of Data**  credit: 3 hours.
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. Prerequisite: MATH 242.

IE 310  **Intro to Operations Research**  credit: 4 hours.
Introduction to deterministic and stochastic models in operations research. Topics include: linear programming, integer programming, network models and nonlinear programming, review of basic probability, Bernoulli processes, Markov chains, Markov processes, and queuing theory. Prerequisite: IE 300 or equivalent; 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 or consent of instructor.

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.
Reviews the process of facility planning, plant layout design, and materials handling analysis; includes the 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 or equivalent.

IE 361  **Production Planning and Ctrl**  credit: 3 hours.
Examines 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. Prerequisite: Junior standing in industrial engineering. Must be taken in Spring term.

IE 400  **Des and 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: One of IE 300, CEE 202, ECE 413, GE 331, STAT 400, MATH 463 or equivalent; or consent of instructor.

IE 410  **Stochastic Proc and App**  credit: 3 OR 4 hours.
Modeling and analysis of stochastic processes. Familiarity with discrete-time Markov chains, Poisson processes, and birth-and-death processes is assumed. Topics include the transient and steady-state behavior of continuous-time Markov chains; renewal processes; models of queueing systems (birth-and-death models, embedded-Markov-chain models, queueing networks); reliability models; and inventory models. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: IE 310 or equivalent.
IE 411  **Optimization of Large Lin Sys**  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; or consent of instructor.

IE 412  **OR Models for Mfg Systems**  credit: 3 OR 4 hours.
Provides an introduction to the use of operations research techniques to problems in manufacturing and distribution. Topics covered include 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 or equivalent or consent of instructor.

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. Topics covered: 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. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: IE 310 and CS 101; or equivalents; or consent of instructor.

IE 430  **Economic Found of Quality Sys**  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. Subjects covered include 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 or consent of instructor.

IE 435  **Intro to Reliability Eng**  credit: 3 OR 4 hours.
Same as GE 411. See GE 411.

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 210 and 212; or consent of instructor.

IE 441  **Interactive Sys Model and Des**  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, 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: IE 300, IE 340, and CS 110; or equivalent; or consent of instructor.

IE 442  **Safety Engineering**  credit: 3 OR 4 hours.
Study of engineering principles applied to 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; and toxic materials. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Senior standing in engineering or consent of instructor.

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 450  **Computer-Aided Mfg Systems**  credit: 0 TO 4 hours.
The application of computer technology and operations research in manufacturing systems; includes the use of minicomputers and microprocessors for direct numeric control of machine tools, adaptive control and optimization, and integrated manufacturing systems, including applications of industrial robots. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ME 350 or consent of instructor.

IE 451  **Num Control of Mfg Processes**  credit: 0 TO 4 hours.
Study of 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: ME 350 or consent of instructor; background in computer technology.

IE 470  **Senior Design Project**  credit: 3 hours.
IE 485 Intro MEM 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: James Scholar in engineering; consent of instructor.

IE 497 Independent Study credit: 1 TO 4 hours.  
Independent study of advanced problems related to industrial engineering. Prerequisite: Junior or senior standing; consent of instructor.

IE 498 Special Topics credit: 1 TO 4 hours.  
Lectures on special topics in selected areas of industrial engineering. May be repeated in the same or separate terms as topics vary to a maximum of 9 hours. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

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; emphasizes modern algorithms, numerical methods for digital computers, applications in engineering design, and use of state-of-the-art computer codes. Prerequisite: IE 310 or equivalent or consent of instructor.

IE 511 Integer Programming credit: 4 hours.  
Optimization of linear systems involving integer variables and discrete alternatives. Covers: modeling; computational complexity; matroids; branch and bound methods; Lagrangian and surrogate duality; cutting plane methods and polyhedral theory; and special structured problems such as knapsack, set packing and covering, traveling salesman, etc. Prerequisite: IE 411 or MATH 482 or equivalent; or consent of instructor.

IE 512 Sys Method and Network Techniq credit: 4 hours.  
Study of basic concepts, theories, and techniques of systems analysis, including modeling of large scale systems, forecasting, planning, control, and information handling; emphasizes the modeling of systems with network techniques, including distance, flow, and project networks. Discusses advanced network topics such as out-of-kilter algorithm and project resource analysis. Same as CEE 516. Prerequisite: IE 361 or CEE 201 or equivalent; or consent of instructor.

IE 540 Anlys and Des of Man-Mach Sys 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; or equivalents and consent of instructor.

IE 541 Mental Models in Complex Sys credit: 4 hours.  
Examines how human expertise develops, particularly in the context of complex industrial systems and various types of professional practice (diagnosis, decision-making, etc.). Topics include: cognitive skill acquisition; how expert knowledge is mentally represented; different knowledge elicitation techniques; and ways of supporting the human expert at work, such as decision support systems and expert systems. Same as PSYC 542. Prerequisite: At least two of PSYC 224, PSYC 248, IE 340, IE 445, and IE 446; or consent of instructor.

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: Credit or concurrent registration in at least one of CS 440, IE 540, PSYC 527; or consent of instructor.

IE 550 Automated Plan of Mfg Proc 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, and inspection planning. Prerequisite: IE 450 or IE 451 or consent of instructor; graduate standing.

IE 551 Accuracy and Ctrl of Mach Sys credit: 4 hours.  
Course addresses the problem of modeling machining processes and machine tools. Emphasis is on mechanistic modeling of machining processes, machine-tool errors, characterization of machined surfaces, machine-tool system dynamics and stability, and
topics in motion control. Prerequisite: ME 340 or equivalent course in dynamics and controls, ME 350, and graduate standing; or consent of instructor.

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. May be repeated. Approved for S/U grading only.

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 as topics vary to a maximum of 12 hours. Prerequisite: Consent of instructor.

IE 598  Special Topics  credit: 1 TO 4 hours.
Lectures on special topics in selected areas of industrial engineering. May be repeated. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

IE 599  Thesis Research  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
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 up to 1 time(s) 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 & Renaiss  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 402  Composition & Stylistics  credit: 3 hours.
Refinement of written discourse for academic and professional expectations and requirements. In addition to quizzes and a final examination, a major, formal paper on an assigned topic will be required. Prerequisite: ITAL 310 or equivalent; or consent of instructor.

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 Renaiss 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 430  From Baroque-Romanticism  credit: 3 hours.
Major literary developments in Italy from the end of the Renaissance to the New Italy of the Risorgimento (Baroque, Arcadia, Enlightenment, Neoclassicism, Romanticism). Prerequisite: ITAL 200 or consent of instructor.

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 442  Modern Italian Poetry  credit: 3 hours.
Appreciation of modern Italian poetry through a close reading of some representative works (e.g., D'Annunzio, Pascoli, Montale, Quasimodo, Saba, Ungaretti, Novissimi, Zanzotto). 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 noorealism); topic will vary each semester. No knowledge of Italian is required. Same as CINE 470. May be repeated to a maximum of 6 Undergraduate Hours or 8 Graduate Hours. 3 Undergraduate Hours. 4 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 491  Honors Senior Thesis  credit: 2 hours.
For candidates for honors in Italian. 2 undergraduate hours. May be repeated.

ITAL 556  Intro Romance Ling  credit: 4 hours.
Same as FR 562, LING 556, PORT 556, RMLG 556, and SPAN 556. See SPAN 556.
ITAL 559  Sem Romance Ling  credit: 4 hours.
Same as FR 559, LING 559, PORT 559, RMLG 559, and SPAN 557. See SPAN 557.

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: 3 hours.
Same as EIL 580, FR 580, GER 580, PORT 580, SLS 580, and SPAN 580. See SPAN 580.

ITAL 581  Ling Psych Found of Lang Tchg  credit: 4 hours.
Same as EIL 581, FR 581, GER 581, PORT 581, RUSS 581, and SPAN 581. See FR 581.

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, 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 Reseach  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 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 16 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. Prerequisite: Junior standing and a GPA of 3.00.
Journalism

Journalism
Head of Department: Ronald E. Yates
Department Office: 120A Gregory Hall, 810 South Wright, Urbana
Phone: 333-7931
www.comm.uiuc.edu/spike/index.pl

JOUR 199  Undergraduate Open Seminar  credit: 0 TO 3 hours.
A changing array of courses focusing on special topics in journalism. May be repeated up to 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 400  Reporting 1  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.
Historical background of the nature and meaning of the law as it relates to journalism and contemporary problems of freedom of expression.

JOUR 415  Reporting 2  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. For current fees, see the Class Schedule. Prerequisite: JOUR 400.

JOUR 435  Radio Journalism  credit: 4 hours.
Reporting and writing news for radio news program. For current fees, see the Class Schedule. Prerequisite: JOUR 400.

JOUR 440  Television Journalism 1  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. For current fees, see the Class Schedule. Prerequisite: JOUR 435.

JOUR 445  Television Journalism 2  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 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 in multiple semesters, if topics vary. Prerequisite: JOUR 400

JOUR 465  **Photojournalism**  credit: 3 hours.
Basic picture taking and processing, picture editing and other illustrative problems. For current fees, see the Class Schedule; cameras provided by college. Prerequisite: JOUR 400.

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 in multiple 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, 425 and 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 in multiple semesters, if topics vary. Prerequisite: Either JOUR 415, 420 and 425 or JOUR 435, 440 and 445.

JOUR 495  **Internship Seminar**  credit: 0 TO 2 hours.
Seminar based on internship experience. Offered for students who participated in pre-internship orientation then completed an approved internship. Approved for both letter and S/U grading. Prerequisite: JOUR 400

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 Project Research**  credit: 0 TO 8 hours.
Prerequisite: Either JOUR 415, 420 and 425 or JOUR 435, 440 and 445

JOUR 515  **Master's Project**  credit: 2 OR 4 hours.
Individual advanced enterprise project Prerequisite: Either JOUR 415, 420 and 425 or JOUR 435, 440 and 445
Kinesiology

Kinesiology
Head of Department: Wojciech Chodzko-Zajko
Department Office: 117 Freer Hall, 906 South Goodwin, Urbana
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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.

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 Introduction to Kinesiology** credit: 1 hours.
Course serves as an introduction to Kinesiology and will provide an overview of the Kinesiology curriculum, areas of study, and opportunities available for a career in the field. Approved for S/U grading only.

**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 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 Develop, 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 2**  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 3**  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 the 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 5** 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 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 381 and consent of academic advisor.

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 6 hours. Prerequisite: Concurrent enrollment or credit in KIN 381, or consent of academic advisor.

KIN 388 **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. In addition, students will gain training in current program management practices. May be repeated to a maximum of 6 hours. Prerequisite: Kinesiology 352 (Bioenergetics of Movement) 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 LEIS 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-Probems** 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 422 **Neurobiology of Therapeutic Ex** credit: 4 hours.
Examination of the neurobiological basis of physical activity including the neural mechanisms underlying its application to therapeutic exercise Prerequisite: MCB 103 and MCB 334, or graduate standing or consent of instructor.

KIN 429 **Structural Basis of Movement** credit: 3 OR 4 hours.
Advanced study of the structural basis of human movement, with special emphasis on the functional anatomy which underlies clinical Kinesiology. 3 undergraduate hours. 4 graduate hours. Prerequisite: MCB 334 or graduate standing or consent of instructor.

KIN 441 **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, encouragement, 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-cultural 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 446 **Gender & Physical Activity** credit: 3 OR 4 hours.
Examination of 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 452  **Clin & Applied Ex Physiology**  credit: 3 OR 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: 3 OR 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. 3 undergraduate hours. 4 graduate hours. Prerequisite: KIN 257 or graduate standing or consent of instructor.

KIN 458  **Neurobio of Aging**  credit: 3 OR 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 462  **Research on Teacher Education**  credit: 3 OR 4 hours.
Critically examines 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 knowledge of the literature. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior, senior, or graduate standing.

**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 Sport Med I: Patho & Inj**  credit: 2 hours.
Pathology of athletic injury and illness. Emphasis on acquisition of athletic training knowledge and understanding of the physiological response of human growth and development and the progression of injuries, illness and disease processes in athletes. Students complete 30 hours of observation with a consulting physician in sports injury triage. 2 undergraduate hours. 2 graduate hours. Prerequisite: KIN 320, or consent of instructor.

**KIN 482 Sport Med II: Pharm & Inj**  credit: 2 hours.
Knowledge of pharmacology in athletic training including the applications, indications, contraindications, precautions, and interactions of medications as well as governing regulations with emphasis on acquisition of athletic training values and athletic training policies and procedures. Students complete 30 hours of observation with a consulting physician. Prerequisite: KIN 320, or consent of instructor.

**KIN 483 Sport Med III: Med Sup: Cl**  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 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 559  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
Head of Department: Karen Kelsky
Department Office: 2090 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 244-1432
www.ealc.uiuc.edu

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 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 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 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 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
this course and/or KOR 201-204. 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  Advanced Korean I  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  Advanced Korean II  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 KOR 305 and KOR 241. Prerequisite: KOR 204.

KOR 305  Advanced Korean III  credit: 4 hours.
Continuation of KOR 305; emphasizes rapid reading, fluent conversation, learned vocabulary and idiom acquisition, and reading of
newspapers. Credit is not given for 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

Landscape Architecture
Head of Department: James Westcoat
Department Office: 101 Temple Hoyne Buell Hall, 611 East Lorado Taft Drive, Champaign
Phone: 333-0176
www.landarch.uiuc.edu

LA 101  Landscape Architecture Intro  credit: 2 hours.
Survey of the discipline, practice, and philosophy of landscape architecture

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.

LA 215  Buildings, Land and Culture  credit: 3 hours.
Introduction to the study of the ordinary landscape and its representation in the common media. Investigates ordinary places as indicators of cultural values and beliefs, and why they look and function in certain ways. Topics approached through historical accounts 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: Non-Western Cultures
UIUC: Literature and the Arts

LA 220  African Arch & Urbanism  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.

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 Compartv Cult

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 2**  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

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 Compartv Cult

LA 315  **History of Modern Lndscpe 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 1**  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: 1 TO 3 hours.
Professionally supervised field experience in private firms and public agencies designed to introduce students to professional practice. Students work in a department-approved firm or agency of their choice either during a regular or summer session. Approved for S/U grading only. May be repeated to a maximum of 3 hours. Prerequisite: Junior standing and 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. 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. 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.
Same as GEOG 427. See 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 or 6 graduate hours. Prerequisite: LA 336 or consent of instructor.

**LA 438 Design Workshop Studio 2**  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, or 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: 3 OR 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 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 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 Constr 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 564 **Behavioral Research in Design**  credit: 4 hours.
Students prepare and conduct research to obtain information about specific relationships between people and the designed environment. Same as ARCH 564. Prerequisite: LA 470 or ARCH 423, and ARCH 563, or equivalent; and a course in introductory statistics.

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 572 **Museum Theory and Practice**  credit: 4 hours.
Same as ANTH 564. See ANTH 564.

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 up to 8 hours per semester to a maximum of 12 total hours.

LA 594  **Cultural Heritage Landscapes**  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. May be repeated up to 10 hours per semester to a maximum of 16 total hours. Prerequisite: Concurrent enrollment in LA 438 Design Workshop II 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
Liberal Arts and Sciences

Liberal Arts and Sciences
LAS Program Advisor: Mercedes Ramirez Fernandez
College Office: 270 Lincoln Hall, 702 South Wright, Urbana

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. Approved for S/U grading only. Prerequisite: Students must be enrolled in a freshman LAS Global Studies Initiative Course.

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. Approved for S/U grading only. 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 199  Undergraduate Open Seminar  credit: 1 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. Essential for any country of destination and length of sojourn. 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. 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  Interdisciplinary 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 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, HIST 409, and IB 454. 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 up to 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 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.
### Latin

Classics  
Chair: Kirk Freudenburg  
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana  
Phone: 333-1008  
www.classics.uiuc.edu

**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 105  Intensive Elementary Latin**  credit: 8 hours.  
Equivalent to LAT 101 and LAT 102. Introduction to basic grammar and syntax for students who have had no previous Latin and want to learn at a rapid rate; use of computer-assisted individual mastery lessons.

**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 LAT 105, 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 the instructor.

**LAT 471  Intro Second Lang Learn Tchg**  credit: 4 hours.  
Same as FR 471, GER 469, HUM 471, RUSS 471, and SPAN 471. See SPAN 471.

**LAT 475  Intro to Comm Lang Tchg**  credit: 4 hours.  
Same as FR 475, GER 475, RUSS 475, and SPAN 475. See SPAN 475.

**LAT 478  Topics Secondary Lang Tchg**  credit: 4 hours.  
Same as FR 478, GER 478, 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 the 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 500  Latin for Grad Students I  credit: 4 hours.
Basic grammar, syntax, and vocabulary; reading practice. Designed for graduate students who need to use Latin in their research. Credit may not be used toward a graduate degree.

LAT 501  Latin for Grad Students II  credit: 4 hours.
Directed readings, largely in medieval and modern Latin. Designed for graduate students who need to use Latin in their research. Credit may not be used toward a graduate degree. Prerequisite: LAT 500 or two years of high school Latin, or equivalent.

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. 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 499  **LAW Study Abroad**  credit: 0 TO 8 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. Prerequisite: Full academic standing in the College of Law or Graduate College and consent of major department. Law students, successful completion of the year requirements.

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 597  **Interdisciplinary Legal Res.**  credit: 2 TO 4 hours.
For students pursuing an interdisciplinary research project completed under the joint supervision of a professor from the College of Law and a professor from elsewhere on campus. Prerequisite: Consent of the Associate Dean of the College of Law.

LAW 599  **Thesis Research**  credit: 0 TO 12 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: 3 OR 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. 3 professional hours. 4 graduate hours. Law students only.

LAW 604  **Criminal Law**  credit: 3 OR 4 hours.
Sources and purposes of the criminal law; the meaning of criminal responsibility; and the characteristics of particular crimes. 3 professional hours. 4 graduate hours. Law students only.

LAW 605  **Criminal Procedure**  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: 3 OR 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. 3 professional hours. 4 graduate hours.
### 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 608  **Statutory Interpretation**  credit: 3 OR 4 hours.
Introduces students to the legislative process, as well as to basic methods of statutory interpretation. Students select from several sections, each focusing on a different statutory scheme. Within that statutory context, students study basic canons of statutory interpretation, the uses of legislative history, and other issues arising in the application and interpretation of statutes. 3 professional hours. 4 graduate hours. Prerequisite: Enrollment in the College of Law.

### 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 613  **Constitutional Litigation**  credit: 2 TO 4 hours.
Study of the federal statutes that authorize civil suits against public officials and governmental entities responsible for the deprivation of constitutional rights; immunities and defenses; potential remedies; federalism issues. 2 to 3 professional hours. 2 to 4 graduate hours.

### LAW 614  **Legislation**  credit: 2 TO 4 hours.
Constitutional and statutory issues in legislative procedure, including issues relating to separation of power between Congress and the President; particular legislative-executive issues raised by the Illinois Constitution; and techniques of legislative drafting and the interpretation of statutes. 2 to 3 professional hours. 2 to 4 graduate hours.

### 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 Environmental 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 617  **Environmental Law and Pol, II**  credit: 3 OR 4 hours.
Course will examine closely the major federal statutes that control pollution and protect natural areas, including the Clean Water Act, the Clean Air Act, and the various statutes dealing with hazardous substances. 3 professional hours. 4 graduate hours. Prerequisite: LAW 616.

### 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.
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 policies; 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.

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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.

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.

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.

Methods of financing land acquisition and residential and commercial development, including publicly owned and subsidized housing. 3 professional hours. 4 graduate 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.

Historical survey of congressional policy toward Indian affairs; studies relevant legislation delineating the relationship between tribes and the federal government; considers the unique jurisdictional problems that arise with conflicting claims of state, federal, and tribal sovereignty and regulatory authority; focus on individual rights and benefits conferred by federal law to American Indians, including Indian welfare laws, employment preference systems, and religious freedom legislation. 3 professional hours. 4 graduate 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.

Elective for second- and third-year law students is a foundational course for commercial law. Subjects covered include the nature and operation of the Uniform Commercial Code, issues regarding formation and performance of sales contracts, warranty, remedies for breach, documentary transactions and international sales. 3 professional hours. 4 graduate hours.

Study of the regulation of the relationship between debtors and creditors under the federal Bankruptcy Code. 3 professional hours. 4 graduate hours.

Detailed study of business bankruptcy reorganizations under Chapter 11 of the Bankruptcy Code. 3 professional hours. 4 graduate hours. Prerequisite: LAW 629.

Study of secured transactions under Article 9 of the Uniform Commercial Code 2 to 3 professional hours. 2 to 4 graduate 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).

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.
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 or 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, Business Associations I.

**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: Business Associations I.

**LAW 637  Unincorporated Business Assoc**  credit: 3 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, Business Associations I, 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, Business Association I, 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 640  Business Planning**  credit: 2 TO 4 hours.
Examination of planning situations wherein tax, corporations, corporate finance, securities regulation, and accounting materials are interrelated; organization of close corporations and public companies, corporate distributions and recapitalizations, sale of corporate businesses, corporate acquisitions and mergers, and corporate separations; and problems requiring written opinions and solutions. 2 to 3 professional hours. 2 to 4 graduate hours. Prerequisite: LAW 633 and LAW 647.

**LAW 641  Quantitative Methods**  credit: 3 OR 4 hours.
Directed at equipping law students with quantitative skills that will assist them in the practice of law. Topics that will be covered include the following: business concepts in the law (e.g., reading a balance sheet, the importance of and methods of computing net, internal, and real rates of return); statistical and other quantitative methods in the law (e.g., using statistical evidence and employing decision theory as a guide to litigation strategy); the theory and methods of computing compensatory damages; and methods of finding and using expert witnesses on economic issues. 3 professional hours. 4 graduate hours.

**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 Law**  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.

The 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. corporations. 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 such areas 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 663  Labor Law and Public Policy**  credit: 3 OR 4 hours.
Analyzes current major policy issues in labor relations and employment law through the concepts and techniques of the lawyer and the labor relations specialist. Same as LIR 551. 3 professional hours. 4 graduate hours. Prerequisite: For law students, LAW 662 or consent of instructor; for Institute of Labor and Industrial Relations and other graduate students, one semester of labor and industrial relations course work or consent of instructor.

**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  Decendent’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 674  Advanced Torts  credit: 3 OR 4 hours.
Examines a variety of advanced tort topics, such as defamation, privacy, misrepresentation, special duties, prima facie tort, alternative compensation schemes, and proposals for tort reform. 3 professional hours. 4 graduate hours.

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 677  Sports Law  credit: 2 TO 4 hours.
Examines specialized aspects of the sports industry; emphasis given to antitrust, labor, and tax issues as applied to professional sports, and antitrust and constitutional issues that have allowed courts to intervene in intercollegiate athletics. Does not consider recurring legal problems for which general principles of law are applicable. 2 to 3 professional hours. 2 or 4 graduate hours.

LAW 678  Anthropology and Law  credit: 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. Prerequisite: LAW 604 and LAW 605.

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.
Elecitive 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 to 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 and Economics.

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. Prerequisite: Completed or enrolled concurrently with LAW 682. JD students only.

**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. Can 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 completed or enrolled concurrently with LAW 682. JD students only.

**LAW 696  Legal Problems  credit: 1 TO 2 hours.**

Preparation of comments on current legal developments for publication in the University of Illinois Law Review or the Illinois Bar Journal. May be repeated up to 4 time(s). No graduate credit. Approved for S/U grading only.

**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 4 hours.**

Individual research on a special problem selected in consultation with the instructor. May be repeated to a maximum of 4 hours. 0 to 4 professional hours or 2 to 4 graduate hours. Approved for both letter and S/U grading.

**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. Same as HIST 574. May be repeated.

**LAW 793  Advanced Litigation Topics  credit: 2 TO 4 hours.**

This is an umbrella course listing for specialty topics of current interest in litigation. May be repeated if different underlying section.

**LAW 794  Adv Topics in Business Law  credit: 2 TO 4 hours.**

This is an umbrella course listing in business law for specialty topics of current interest. May be repeated if different underlying section.

**LAW 795  Adv Topics in Criminal Law  credit: 2 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: 2 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: 2 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: 2 TO 4 hours.
This is an umbrella course listing for specialty topics of special interest. May be repeated.
Lingala

Linguistics
Head of Department: Elabbas Benmamoun
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3563
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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 OR 5 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. Participation in language laboratory required. Same as
AFST 413. 5 undergraduate hours. 4 graduate hours. Prerequisite: LGLA 202.

LGLA 404  **Intermediate Lingala II**  credit: 4 OR 5 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. Participation in language laboratory required. Same as AFST
414. 5 undergraduate hours. 4 graduate hours. 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 satisfies the General Education Criteria for a:
UIUC: Non-Western Cultures
UIUC: Western Compartv Cult

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, Russian, 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 Perspect

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:
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 Social 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
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.

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.
Same as SHS 301. See SHS 301.

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 360 American Sign Language  credit: 3 hours.
Same as PSYC 360, SHS 360, and SPED 360. See SPED 360.

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, or 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 or LING 401 or concurrent registration.

**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 langue 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 414 Introductory Coptic I** credit: 3 hours.
Same as COP 401, and RLST 401. See COP 401.

**LING 415 Introductory Coptic II** credit: 3 hours.
Same as COP 402, and RLST 402. See COP 402.

**LING 416 Structure of French Language** credit: 3 hours.
Same as FR 416. See FR 416.

**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 COMM 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 COMM 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. 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 GWS 432, and SPCM 432. See SPCM 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 440  History of Linguistics  credit: 3 OR 4 hours.  
Survey of linguistic theories from ancient to modern times; special emphasis on comparative grammar and the development of structural linguistics; and extended discussion of at least one other period. 3 undergraduate hours. 4 graduate hours.

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 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 COMM 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 500  Intro to General Linguistics  credit: 4 hours.  
Introduction to the linguistic sciences; linguistic theory and methodology; and branches of linguistics and their application. Same as ANTH 500, and EIL 520. Credit may not be applied toward a graduate degree in linguistics.
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 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. Prerequisite: LING 406, and an introductory level Computer Science programming course, or consent of instructor. Approved for letter or S/U grading.

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 513  Pedagogical Grammar  credit: 4 hours.
Same as EIL 522. See EIL 522.

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 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 COMM 524, and PSYC 524. See PSYC 524.

LING 525  Psycholinguistics  credit: 2 OR 4 hours.
Same as COMM 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 535  Sem Neuroling of Bilingualism  credit: 4 hours.
Seminar on the neurolinguistic aspects of bilingualism and second-language acquisition, with particular attention to the development of a critical understanding of the manner in which dual- and multi-language systems co-exist in one brain. Same as EIL 535, and SLS 535. Prerequisite: LING 435 or 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 556  Intro Romance Ling  credit: 4 hours.
Same as FR 562, ITAL 556, PORT 556, RMLG 556, and SPAN 556. See SPAN 556.

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, and SPAN 584. See SPAN 584.

LING 585  **Topics in Semantic Theory**  credit: 4 hours.
Advanced topics in theoretical semantics. 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 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

**Director of Institute:** Peter Feuille  
**Office:** 247 Labor and Industrial Relations Building, 504 East Armory, Champaign  
**Phone:** 333-1482  
[www.ilir.uiuc.edu](http://www.ilir.uiuc.edu)

**LIR 199  Undergraduate Open Seminar**  
Credit: 1 TO 5 hours.  
May be repeated.

**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 530  Found of Ind Org Psych**  
Credit: 4 hours.  
Same as PSYC 530. See PSYC 530.

**LIR 535  Motivation and Morale in Indus**  
Credit: 4 hours.  
Same as PSYC 535. See PSYC 535.

**LIR 540  Labor Economics I**  
Credit: 4 hours.  
Same as ECON 540. See ECON 540.

**LIR 541  Labor Economics II**  
Credit: 4 hours.  
Same as ECON 541. See ECON 541.

**LIR 542  Collective Bargaining**  
Credit: 4 hours.  
Examination of: social values and social science concepts to develop a framework for explaining the basis and shape of collective bargaining as it has been practiced in the United States; government and law, unions, and employers as part of the development of this framework; the environment of collective bargaining with respect to the role of economics and bargaining structure; the negotiating process as the interactive basis for union-management relations; conflict and conflict resolution as part of the negotiating process; wage and other effects of collective bargaining as bargaining outcomes; contemporary changes in union management relations. Case materials and exercises may be used to supplement course materials. Same as ECON 343 and LIR 542. Prerequisite: 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 555 Labor in Less Developed Count credit: 4 hours.
Role and place of LDCs in the world; colonialism, independence, and nation-building; economics, power, and stratification; development of labor markets and labor movements; economic, political, and social consequences of international trade, finance, and investment; international diffusion of technology and ideology; nation-states, multi-national corporations and world community; and international and regional organizations and their impact on labor in LDCs. Prerequisite: ECON 101 or ECON 110, or equivalent.

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 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 Industrial Relations or consent of instructor.

LIR 564 HR Training and Development credit: 4 hours.
Examination of: theories of behavioral change; application of these theories to training and human resource development; assessing training needs, especially with reference to the internationalization of business, changes in labor demand, demographic trends in the United States, and increasing workforce diversification; advantages and disadvantages of the various training and development techniques; relation of training to organizational strategies; methods of training evaluation. Special attention is given to the need for and methods of cross-cultural training. Students develop training exercises for class presentation and participation.

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 Industrial 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: 4 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  **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.

LIR 570  **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 571  **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 572  **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 573  **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. Prerequisite: Completion of no fewer than 24 graduate hours of LIR course work.

LIR 578  **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 LIR 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
www.lis.uiuc.edu

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 COMM 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.
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 COMM 202. Prerequisite: Sophomore standing.

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 352  **Cognitive Psych Info Systems**  credit: 3 hours.
Introduction to research and theory in human cognition with emphasis on its relationship to computer models of these processes and implications for building information systems. 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 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.
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 458  Instruction and Assistance Sys  credit: 2 TO 4 hours.
Provides an introduction to instruction and assistance methods used in a variety of information systems including libraries, archives, museums, and electronic environments. Includes an overview of theoretical and applied research and discusses relevant issues and concepts. Students will have an opportunity to design and present an instruction or assistance program 3 undergraduate hours. 2 or 4 graduate hours.

LIS 465  Princ of User Interface Design  credit: 3 OR 4 hours.
Same as CS 465. See CS 465.

LIS 482  Writing Technologies  credit: 3 OR 4 hours.
Same as ENGL 482. See ENGL 482.

LIS 490  Advanced Topics Info Studies  credit: 2 TO 4 hours.
Directed and supervised investigation of selected topics in information studies that may include among others the social, political, and historical contexts of information creation and dissemination; computers and culture; information policy; community information systems; production, retrieval and evaluation of knowledge; computer-mediated communication. May be repeated. Prerequisite: Junior standing and LIS 201 or LIS 202, or consent of instructor.

LIS 491  Literacy in the Info Age  credit: 0 TO 4 hours.
A capstone course in the Information Technology Studies minor that draws on students’ experience throughout their undergraduate program to discuss a series of themes such as community, the political sphere and education which have been impacted by the new information technologies. Same as COMM 491. 3 undergraduate hours. 4 graduate hours. Prerequisite: LIS 201 or LIS 202.

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. All students must attend the lecture section and one discussion section.

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 508  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 510  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 511  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 COMM 512.

**LIS 514  History of Children's Lit**  credit: 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.
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 566  **Arch Net Info Sys**  credit: 4 hours.
The principles and practices of designing systems, particularly network information systems. Critical evaluation of current Internet infrastructure plus evolution of research architectures. Historical survey of functionality of system components. Design project required. Familiarity with commercial on-line services assumed. Prerequisite: CS 411 and LIS 456, or 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.
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  **Latin Am & Latino 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.
Course Information: Same as SPAN 240. See SPAN 240.

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 COMM 250.

LLS 259  **Latina/o Cultures**  credit: 3 hours.
Same as ANTH 259. See ANTH 259.

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 300  19thC US Latina/o Lit  credit: 3 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 Caribbean and Mexican descent in the United States. Students may not register for LLS 300 and LLS 301 simultaneously.
This course satisfies the General Education Criteria for a:
UIUC: Hist&Philosoph Perspect
UIUC: US Minority Culture(s)

LLS 301  19thC US Latina/o Lit-ACP  credit: 4 hours.
Course is identical to LLS 300 except for the additional writing component. Credit is not given for both LLS 300 and LLS 301.
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)
UIUC: Advanced Composition

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 342  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 346  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 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  20thC 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-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 COMM 375. See COMM 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. Prerequisite: One course in Latina/Latino Studies and consent of instructor.

LLS 391  Latina/o Seminar in Spanish  credit: 3 hours.
Examination of 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. Course will be taught primarily in Spanish and will require a reading, writing, and speaking knowledge of Spanish. May be repeated to a maximum of 6 hours. Prerequisite: Completion of SPAN 140, SPAN 141, SPAN 142, SPAN 143 or the equivalent, or test based on competency in Spanish, or consent of instructor.

LLS 422  US Latina and Latino Families  credit: 3 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 AFRO 435, AAS 435, COMM 432 and GWS 435. 3 hours undergraduate, 4 hours graduate credit. 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 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 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.
Mathematics

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MATH 002  **Introductory Algebra**  credit: 3 hours.
Methods of elementary algebra, including simplification of algebraic expressions, solving linear 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 logarithm 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, and 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 MATH 012. 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 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 118  **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 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:
UIUC: Quant Reasoning I

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 ACT score.
This course satisfies the General Education Criteria for a:
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 MATH 225. Prerequisite: MATH 012, or an adequate ACT score.

MATH 161  **Statistics**  credit: 3 hours.
Same as STAT 100. See STAT 100.
This course satisfies the General Education Criteria for a:
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 230 or equivalent.
This course satisfies the General Education Criteria for a:
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 equivalent.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 220  **Calculus I**  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 circular functions. Credit is not given for both
MATH 220 and MATH 234. Prerequisite: MATH 016 or equivalent; or an adequate ACT score.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

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 either MATH 125 or MATH 415. Prerequisite: MATH 220 or equivalent.

MATH 230  **Calculus II**  credit: 3 hours.
Second course in calculus and analytic geometry: techniques of integration, conic sections, polar coordinates, and infinite series.
Prerequisite: MATH 220.
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 MATH 220.
Prerequisite: MATH 012.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning I

MATH 242  **Calculus of Several Variables**  credit: 3 hours.
Third course in calculus and analytic geometry: three dimensional space, functions of several variables, partial derivatives, and multiple
integrals. Credit is not given for both MATH 242 and MATH 243. Prerequisite: MATH 230.
This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II

MATH 243  **Calculus III Plus**  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 243 and either MATH 242 or MATH 244. Prerequisite: MATH 230.

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

MATH 244  **Calculus for Business II**  credit: 5 hours.
Continuation of MATH 234. Calculus of the trigonometric functions, Taylor polynomials, and infinite series; analytic geometry in n dimensions, vector calculus, classical extremum problems in n variables, and Lagrange multipliers; and multiple integrals. Credit is not given for both MATH 244 and either MATH 242 or MATH 243. Prerequisite: MATH 234 or consent of instructor.

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

MATH 249  **Honors Course in Mathematics**  credit: 1 hours.
Prerequisite: Concurrent registration in an honors section of MATH 220, MATH 230, or MATH 242; consent of department. Enrollment is strictly limited to students with superior mathematical talents.

MATH 257  **Numerical Methods**  credit: 3 hours.
Same as CS 257. See CS 257.

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 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 348. Prerequisite: MATH 230.

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. Approved for both letter and S/U grading. Credit is not given for both MATH 348 and MATH 347. Prerequisite: MATH 230 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 367  **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 367. Prerequisite: Completion of the Quantitative Reasoning I requirement, or consent of instructor.

MATH 370  **Actuarial Problem Solving**  credit: 1 TO 2 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 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. Prerequisite: MATH 242 or MATH 243, or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II
MATH 383  **Intro to Linear Programming**  credit: 3 hours.
Systems of linear inequalities, the standard canonical and general linear problems, and the simplex methods of solution. Prerequisite: MATH 125 or MATH 225.

MATH 385  **Intro Differential Equations**  credit: 3 hours.
Intended for engineering students and others who require a working knowledge of differential equations; included are techniques and applications of ordinary differential equations and an introduction to partial differential equations. Credit is not given for both MATH 385 and either MATH 386 or MATH 441. Prerequisite: MATH 242 or MATH 243, or equivalent.

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

MATH 386  **Intro to Differential Eq Plus**  credit: 4 hours.
Intended for engineering students and others who require a working knowledge of differential equations, included are techniques and applications of ordinary differential equations, linear systems of differential equations, and an introduction to partial differential equations. Credit not given for both MATH 386 and either MATH 385 or MATH 441 Prerequisite: MATH 242 or MATH 243, or equivalent.

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. 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. 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 242 or MATH 243; MATH 347 or MATH 348 or equivalent experience; 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 Cera and Menelaus, regular figures, isometries in the plane, ordered and affine geometries, and the inversive plane. 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 242 or MATH 243, 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.
Presents selected topics in mathematics that are related to the content of secondary school mathematics programs; provides background for enrichment topics for secondary school students. Subject matter varies with the instructor. 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 242 or MATH 243; MATH 347 or MATH 348 or equivalent experience; 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. 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 242 or MATH 243, 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 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. 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 or CS 273.

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. 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 415  **Linear Algebra**  credit: 3 OR 4 hours.

Introductory course emphasizing techniques of linear algebra; topics include matrix operations, determinants, linear equations, vector spaces, linear transformations, eigenvalues, and eigenvectors. 3 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval of the instructor and completion of additional work of substance. Credit not given for both MATH 225 and either MATH 125 or MATH 415. Prerequisite: MATH 242 or MATH 243.

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

MATH 417  **Intro to Abstract Algebra**  credit: 3 OR 4 hours.

Fundamental theorem of arithmetic. Congruencies, groups and group actions, Polya counting, rings, fields, and roots of polynomials. Emphasizes proofs. 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 415 and either MATH 347 or MATH 348; or consent of instructor.

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

MATH 418  **Intro to Abstract Algebra II**  credit: 3 OR 4 hours.

Vector spaces, ruler and compass constructions, finite fields, with application to Steiner systems. Linear codes or Groeber bases. Emphasizes proofs. 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 417 or consent of instructor

MATH 421  **Symbolic Algebra**  credit: 4 hours.

Introduction to algorithmic, computational algebra. The basic object of study is families of polynomials in several variables with coefficients from a chosen field. The theory and algorithms have applications ranging from highly theoretical results in algebraic geometry to practical questions in applied fields like robotics. 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. 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 242 or MATH 243, or equivalent.

This course satisfies the General Education Criteria for a:
UIUC: Quant Reasoning II
MATH 424  Honors Real Analysis  credit: 3 hours.
Set Theory, real number system, metric spaces, continuous functions, differentiation, and Riemann integration. Approved for honors grading. 3 undergraduate hours. Prerequisite: An honors section of MATH 347 and consent of the department.

MATH 425  Honors Advanced Analysis  credit: 3 hours.
Differential calculus, implicit function theorem, integral calculus, line and surface integrals, infinite series, functions defined by series and integrals. Approved for honors grading. 3 undergraduate hours. Prerequisite: MATH 424 and consent of the department.

MATH 426  Honors Linear Algebra  credit: 2 hours.
Matrix operations, vector spaces, linear transformations, bilinear forms and orthogonality. Approved for honors grading. 2 undergraduate hours. Students may not receive credit for this course and any of the following: 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. Approved for honors grading. 3 undergraduate hours. Students may not receive credit for both this course and MATH 417. Prerequisite: MATH 426 and consent of the department.

MATH 428  Honors Geometric Analysis  credit: 3 hours.
Functions on Euclidean spaces, linear and multilinear functions, vector fields and differential forms on Euclidean space, singular chains and Stoke's theorem, manifolds, integration on manifolds, classical theorems as corollaries of Stoke's theorem. Approved for honors grading. 3 undergraduate hours. Prerequisite: Consent of the department and either Option I: MATH 427; or Option II: MATH 415, MATH 447 and MATH 243 or MATH 380.

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. 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 consent of instructor.

MATH 439  Philosophy of Mathematics  credit: 3 OR 4 hours.
Same as PHIL 439. See PHIL 439.

MATH 441  Differential Equations  credit: 3 OR 4 hours.
Basic course in ordinary differential equations; topics include existence and uniqueness of solutions and the general theory of linear differential equations; treatment is more rigorous than that given in MATH 385. 3 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval of the instructor and completion of additional work of substance. Credit is not given for both MATH 441 and either MATH 385 or MATH 386. Prerequisite: MATH 242 or MATH 243, or equivalent; MATH 347 or MATH 348 recommended.

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

MATH 442  Intro Partial Diff Equations  credit: 3 OR 4 hours.
Introduces students to partial differential equations, emphasizing the wave, diffusion and potential (Laplace) equations. The focus is on understanding the physical meaning and mathematical properties of solutions of partial differential equations. Methods include fundamental solutions and transform methods for problems on the line, and separation of variables using orthogonal series for problems in regions with boundary. Convergence of Fourier series is covered in detail. 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 385 or MATH 386 or MATH 441.

MATH 444  Elementary Real Analysis  credit: 3 OR 4 hours.
Careful treatment of the theoretical aspects of the calculus of functions of a real variable; topics include the real number system, limits, continuity, derivatives, and the Riemann integral. 3 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval of the instructor and completion of additional work of substance. Credit is not given for both MATH 444 and MATH 447. Prerequisite: MATH 242 or MATH 243; MATH 347 or MATH 348 or equivalent experience.

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

MATH 446  Applied Complex Variables  credit: 3 OR 4 hours.
For students who desire a working knowledge of complex variables; covers the standard topics and gives an introduction to integration by residues, the argument principle, conformal maps, and potential fields. Students desiring a systematic development of the foundations of the subject should take MATH 448. 3 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval
of the instructor and completion of additional work of substance. Credit is not given for both MATH 446 and MATH 448. Prerequisite: MATH 243 or MATH 380 or consent of instructor.

MATH 447  Real Variables  credit: 3 OR 4 hours.
Careful development of elementary real analysis including such topics as completeness property of the real number system; basic topological properties of n-dimensional space; convergence of numerical sequences and series of functions; properties of continuous functions; and basic theorems concerning differentiation and Riemann integration. 3 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval of the instructor and completion of additional work of substance. Credit is not given for both MATH 447 and MATH 444. Prerequisite: MATH 242 or MATH 243 or equivalent, and junior standing; MATH 347 or MATH 348 or equivalent experience; or consent of instructor.

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

MATH 448  Complex Variables  credit: 3 OR 4 hours.
For students who desire a rigorous introduction to the theory of functions of a complex variable; topics include Cauchy’s theorem, the residue theorem, the maximum modulus theorem, Laurent series, the fundamental theorem of algebra, and the argument principle. 3 undergraduate hours. 3 or 4 graduate hours. 4 hours of credit requires approval of the instructor and completion of additional work of substance. Credit is not given for both MATH 448 and MATH 446. Prerequisite: MATH 242 or MATH 243 or equivalent, and junior standing; MATH 347 or MATH 348 or equivalent experience; or consent of instructor.

MATH 450  Intro to Numerical Analysis  credit: 3 OR 4 hours.
Same as CS 450, CSE 401, and ECE 491. See CS 450.

MATH 453  Elementary Theory of Numbers  credit: 3 OR 4 hours.
Topics covered include divisibility, primes, congruences, quadratic reciprocity, and Farey sequences. 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 242 or MATH 243, or equivalent.

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

MATH 455  Numerical Methods for PDEs  credit: 3 OR 4 hours.
Same as CS 455, and CSE 411. See CS 455.

MATH 458  Numerical Linear Algebra  credit: 3 OR 4 hours.
Same as CS 458, and CSE 412. See CS 458.

MATH 459  Numerical Approx and ODEs  credit: 3 OR 4 hours.
Same as CS 459, and CSE 413. See CS 459.

MATH 461  Probability Theory I  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. Prepares students for MATH 466. Same as STAT 451. 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 242 or MATH 243, 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  Probability Theory II  credit: 3 OR 4 hours.
Continuation of MATH 461. Includes random walks, discrete and continuous time Markov chains, and special topics selected from weak stationarity, the multivariate central limit theorem, probability model building, stochastic equations, martingale theory, and renewal theory. Same as STAT 456. 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 461 or STAT 410.

MATH 468  Topics in Applied Statistics  credit: 3 OR 4 hours.
Same as STAT 430. See STAT 430.
MATH 469  Methods of Applied Statistics  credit: 3 OR 4 hours.
Same as STAT 420. See STAT 420.

MATH 470  Actuarial Numerical Analysis  credit: 3 hours.
Numerical methods needed in actuarial science including iterative methods of solving equations, interpolation, numerical integration
and linear systems. In addition, the theory of finite differences, and applications to actuarial problems will be covered. The level will
be consistent with professional examinations in the field. Credit is not given for both MATH 470 and CS457 / MATH 257. Prerequisite:
MATH 242 or MATH 243, MATH 210, and a 100-level computer science course, or consent of instructor

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

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: 3 OR 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. 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 243 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. 3 undergraduate hours. 3 or 4 graduate hours. Four hours of credit requires approval of the instructor and completion of
additional work of substance. Prerequisite: MATH 415.

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. 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 242 or MATH 243; MATH 347 or MATH 348 or equivalent experience; and a
knowledge of linear algebra equivalent to MATH 415; or consent of instructor.

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

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. 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 380 or equivalent.

MATH 489  Differential Equations II  credit: 3 OR 4 hours.
Continuation of MATH 385. The course treats systems of linear differential equations (and includes the necessary matrix theory), and then concentrates on nonlinear systems, studying their dynamics by means of phase plane analysis and other methods. Applications of nonlinear systems to physics and biology will be given. 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 385 or MATH 386 or MATH 441.

MATH 490  Topics in Mathematics  credit: 1 TO 4 hours.
Deals with topics in the application of mathematics to the physical, biological, and social sciences; 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. 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 508  Computer Algebra Systems  credit: 4 hours.
Hands-on exploration of specialized computer algebra systems, their capabilities and applications. Each student will be required to complete an individual project containing original work. Prerequisite: MATH 417 or an equivalent course in abstract algebra.

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 520  Differentiable Manifolds  credit: 4 hours.
Definition and properties of differentiable manifolds and maps, introducing vector fields, tangent bundles, differential forms, exterior derivatives, and foliations. Prerequisite: MATH 423 or MATH 481, 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 up to 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 534  **Geometric Topology**  credit: 4 hours.

Topics from geometric topology: complexes, cutting and pasting, and other constructions with applications to areas such as manifolds and knots. Prerequisite: MATH 525.

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 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 up to 1 time(s). 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 8 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 ECE 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  Optimization by Vector 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; and introduction to iterative methods. Same as ECE 580. Prerequisite: MATH 415 or MATH 482, and MATH 447 or consent of instructor.

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 242 or MATH 243.

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.
 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. 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.
Regular MBA Program Administration

MBA Program Administration
Associate Dean, MBA Program:: Mary Miller
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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  **Prin & Proc of Management II**  credit: 6 hours.
Course presents information and material on how organizations make decisions and operate in the global environment. Specific
topics include: decision and risk analysis, managing change, leadership styles for organizations, business ethics, and developing and
implementing strategies in the global environment. 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: 2 TO 4 hours.
Individual projects selected by the student in consultation with a faculty member and approved by the executive officer of the program. 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.
Molecular and Cell Biology

Molecular and Cellular Biology, School of
Director of School: Charles Miller
School Office: 393 Morrill Hall, 505 South Goodwin Avenue, Urbana
Phone: 333-3166
www.life.uiuc.edu/mcb/

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. Offered in two formats: regular (Section B) and self-paced (Section A). In the self-paced format the lecture portion is replaced by intensive readings, quizzes, and exams. 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 199 Undergraduate Open Seminar credit: 1 TO 5 hours.
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 MCB 354 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. Students may not receive credit 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. Prerequisite: Consent of instructor. May be repeated to a maximum of 10 hours.

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: Credit or concurrent registration in MCB 300, and MCB 250 and MCB 251, and credit or concurrent registration in MCB 252 and MCB 253, 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: Credit or concurrent registration in MCB 434, and 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, or MCB 250 and MCB 252 or equivalent with 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 254 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, or 1 graduate hour. Prerequisite: Credit or concurrent registration in MCB 401 and previous biology laboratory experience.

MCB 404 Sys & Integrative Physiology Lab credit: 1 TO 2 hours.
Introduction to problems and techniques for studying the physiology of organ systems. 2 undergraduate hours, or 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: 4 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 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 254, 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, chemioaffinity hypothesis, calcium signaling in plasticity, and neurological disorders and therapies. Same as NEUR 422. Prerequisite: MCB 252 and credit or concurrent registration in MCB 254, 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 Funk 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 BIOE 417, BIOP 417 and NEUR 427. Prerequisite: MCB 414; and MATH 220 and MATH 224; and CS 210; or equivalent or consent of instructor.

**MCB 418** **Human Genetics** credit: 3 hours.

Studies the techniques employed for genetic analysis of human traits; discussion of genetic mechanisms operative in human development, metabolism, and behavior; and genetics and human disease. Prerequisite: MCB 250, MCB 251, MCB 252, MCB 253, and credit or concurrent registration in MCB 354, 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 420** **Molecular Immunology** credit: 3 hours.

Molecular basis of normal immune responses to infectious agents and cancer. Structural and biochemical understanding of key immune molecules. In addition to basic immune system components (such as B and T cells), topics will include autoimmune diseases, allergic responses, and immunotherapeutics. Prerequisite: MCB 252 and MCB 354, 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 422** **Microbial Genetics Techniques** credit: 4 OR 5 hours.

Laboratory emphasizing current molecular genetics techniques in bacteria. Topics include genetic techniques, use of transposons, genetic regulation, nucleic acid hybridization, restriction endonuclease mapping, cloning, and DNA sequencing. 5 undergraduate hours. 4 graduate hours. Prerequisite: MCB 301, and credit or concurrent registration in MCB 421; or consent of instructor.

**MCB 423** **Evolution in a Microbial World** credit: 3 hours.

Structure, synthesis, and function of molecules and organelles concerned with the intracellular transmission of genetic information (including gene regulation, transcription, and translation). Prerequisite: MCB 421 or MCB 340, and MCB 354, or consent of instructor.

**MCB 424** **Microbial Biochemistry** credit: 3 hours.

Examines the biochemical ecology of diverse microbial groups with emphasis on anaerobic systems. 3 undergraduate hours. 3 graduate hours. Prerequisite: MCB 350 and MCB 354, 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 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 (MATH 220, MATH 230, or MATH 234); or consent of instructor.

MCB 433  **Viral Pathogenesis**  credit: 3 hours.
Emphasizes molecular aspects of virology, drawing heavily on animal virus models and focusing on fundamental principles of virus structure, replication, genetics and virus-host interactions that lead to disease development. Stresses both common and unique aspects of strategies employed by the different major families of eukaryotic RNA and DNA viruses and how these lead to acute, persistent or chronic infections, or the development of cancer. Prerequisite: MCB 300 and credit or concurrent registration in MCB 354; or consent of instructor.

MCB 434  **Food & Industrial Microbiology**  credit: 3 hours.
Same as FSHN 471. See FSHN 471.

MCB 438  **Plant Molecular Biology**  credit: 3 hours.
Same as IB 407. See IB 407.

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 510. 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 452  **Biochemistry I**  credit: 4 hours.
Principles, chemistry, and methods of analysis of the composition and processes of living systems. Prerequisite: CHEM 205 or CHEM 222, and CHEM 332 or CHEM 436; or MCB 354; or consent of instructor.

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 353 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. 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. No Graduate Credit.

**MCB 493  Special Topics Mol Cell Biol**  credit: 2 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 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.
Seminars, lectures, student reports, and discussions of recent advances in endocrinology Same as ANSC 530, and VB 512. May be repeated to a maximum of 8 hours. Prerequisite: Consent of instructor.

**MCB 514  Physiological Measurements**  credit: 1 TO 4 hours.
Laboratories concerned with introducing at a graduate level current research techniques in the physiological and biophysical sciences; problem-oriented laboratories; students select up to four special topics representing different areas of physiology and biophysics, such as mammalian and human, molecular, cellular and radiation biology, comparative physiology, and biophysical measurements. Emphasis placed on ability to work independently, and students give written reports of their experiments. May be repeated to a maximum of 6 hours. Prerequisite: Consent of instructor.

**MCB 516  Neurophysiology Laboratory**  credit: 2 hours.
Neurophysiological techniques and experiments illustrating nerve membrane properties, synaptic action and plasticity, organization and pattern generation in motor systems, and sensory coding in visual and acoustic systems. Same as NEUR 516. Prerequisite: Credit or concurrent registration in MCB 416 or consent of instructor.

**MCB 518  Neuroendocrinology**  credit: 3 hours.
Advanced studies on central nervous system/hormone interaction in vertebrates. Neuroanatomy and maturation of neuroendocrine control systems; production, biochemistry, and physiological effects of neurohormones; and neuroendocrine techniques. Prerequisite: Consent of instructor.

**MCB 519  Computational Brain Theory**  credit: 1 hours.
Same as NEUR 591. See NEUR 591.
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<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<td>MCB 522</td>
<td>Human Extremities</td>
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<td>Comprehensive study of the human extremities with</td>
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<td>emphasis on the principles of systematic anatomy,</td>
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<td>relations between form and function, and</td>
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<td>regional dissection. Lecture and laboratory.</td>
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<td>Prerequisite: Consent of instructor.</td>
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<td>MCB 523</td>
<td>Human Thorax</td>
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<td>Comprehensive study of the human thorax and back</td>
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<td>with emphasis on the principles of systematic</td>
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<td>Prerequisite: Consent of instructor.</td>
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<td>MCB 524</td>
<td>Human Abdomen and Pelvis</td>
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<td>Comprehensive study of the human abdomen and</td>
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<td>pelvis with emphasis on the principles of</td>
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<td>laboratory. Prerequisite: Consent of instructor.</td>
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<td>MCB 525</td>
<td>Human Neck and Head</td>
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<td>Comprehensive study of the human neck and head</td>
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<td>MCB 527</td>
<td>Human Neuroscience</td>
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<td>Principles of human neuroscience and mechanisms</td>
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<td>of neural pathophysiology. Same as NEUR 527.</td>
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<td>MCB 529</td>
<td>Special Topics Cell Devel Biol</td>
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<td>Discussion of current topics of interest in</td>
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<td></td>
<td>development, neurobiology; seminar or lecture</td>
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<td></td>
<td>format. Topics vary. May be repeated to a</td>
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<td></td>
<td>maximum of 8 hours. Prerequisite: Consent of</td>
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<td></td>
<td>instructor.</td>
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<tr>
<td>MCB 530</td>
<td>Reproductive Physiol Seminar</td>
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<td></td>
<td>Presentation and discussion of current literature</td>
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<td></td>
<td>as well as graduate student and staff research</td>
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<td>proposals and findings in reproductive physiology.</td>
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<td></td>
<td>May be repeated to a maximum of 4 hours.</td>
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<td>Prerequisite: Consent of instructor.</td>
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<tr>
<td>MCB 531</td>
<td>Adv Reproductive Endocrinology</td>
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<td></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>
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<td></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>
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<td></td>
<td>Same as BIOP 546. See BIOP 546.</td>
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<td>MCB 550</td>
<td>Biomolecular Physics</td>
<td>4</td>
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<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>
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<td></td>
<td>Series of half-term intensive courses on the</td>
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<td>recent research findings in important areas of</td>
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<td></td>
<td>biochemistry and molecular biology. Covers such</td>
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<td>areas as: biophysical methods; enzyme</td>
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<td>mechanisms; membrane biochemistry; regulation</td>
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<td>of gene expression; nucleic acid biochemistry;</td>
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<td>metabolic regulation; cellular communication;</td>
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<td>and medical biochemistry. Lectures, discussions,</td>
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<td>student papers, and presentations. May be</td>
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<td>repeated. Students may register in more than</td>
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<td>one section per term to a maximum of 4 hours.</td>
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<td></td>
<td>Prerequisite: MCB 354 or equivalent or consent</td>
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<td>of instructor.</td>
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<tr>
<td>MCB 552</td>
<td>Lab Techniques in Biochemistry</td>
<td>1 TO 4 hours</td>
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<td></td>
<td>Experiments concerning the detection, isolation,</td>
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<td>and characterization of macromolecules, including</td>
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<td>enzymes, antibodies, and nucleic acids; methods</td>
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<td>of studying the size, shape, and hydrodynamic</td>
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<td>properties of macromolecules and other</td>
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<td></td>
<td>compounds. May be repeated to a maximum of 6</td>
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<td></td>
<td>hours. Prerequisite: BIOC 455 or consent of</td>
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<td>instructor.</td>
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<td>MCB 553</td>
<td>Enzyme Reaction Mechanisms</td>
<td>3 OR 4 hours</td>
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<td></td>
<td>Same as CHEM 572. See CHEM 572.</td>
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<td>MCB 554</td>
<td>Genomics, Proteomics, Bioinfo</td>
<td>3 OR 4 hours</td>
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<td>Same as CHEM 574. See CHEM 574.</td>
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<td>MCB 555</td>
<td>Anlys Biochemical Literature</td>
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<td>Discussions of current research and literature.</td>
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<td>Required of all graduate students whose major is</td>
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<td>biochemistry. Prerequisite: Graduate standing</td>
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<td>in biochemistry or consent of instructor.</td>
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<tr>
<td>MCB 556</td>
<td>Topics in Biophysical Chem</td>
<td>4</td>
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page 463 - Molecular and Cell Biology
Same as BIOP 540, and CHEM 576. See CHEM 576.

**MCB 561**  **Mechanisms Viral Pathogenesis**  credit: 3 hours.
Same as PATH 519. See PATH 519.

**MCB 562**  **Advances in Microbiology**  credit: 1 hours.
Discussions of current research in the following areas of microbiology: (a) general microbiology; (b) microbial physiology and metabolism; (c) immunochemistry; and (d) molecular genetics. May be repeated to a maximum of 4 hours. Prerequisite: Consent of instructor.

**MCB 571**  **Bioinformatics**  credit: 4 hours.
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.
Medieval Studies

Medieval Studies, Program in
Director: Anne D. Hedeman
Program Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 265-6254
www.medieval.uiuc.edu

MDVL 111 Ancient and Medieval Art credit: 4 hours.
Same as ARTH 111. See ARTH 111.

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 411  Chaucer  credit: 3 OR 4 hours.
Same as ENGL 411. See ENGL 411.

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 SPCM 415. See SPCM 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.
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 507  Old English  credit: 4 hours.
Same as ENGL 507. See ENGL 507.

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 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 526  Gothic  credit: 4 hours.
Same as GMC 526. See GMC 526.

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  Studies 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 551  Seminar Lit Movements  credit: 4 hours.
Same as CWL 551. See CWL 551.

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.
Course teaches the primary methods and principles used by industrial and mechanical engineers today to define and describe the geometry and topology of engineered components. Students learn how to create fully defined engineering models and how to correctly present them in standard 2D blueprint form, and 3D wireframe and shaded solids. Students are also introduced to meshed topologies for engineering analysis and toolpath generation for component manufacture. ISO and ANSI standards for coordinate dimensioning and tolerancing are covered with an introduction to Geometric Dimensioning and Tolerancing (GD&T). Parametric Technology's ProEngineer 3D CAD solid modeling software is used throughout the course to create associative models at component and assembly level with automatic blueprint creation, interference checking, and linked Bill of Materials. Same as IE 170.

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 242.

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. Prerequisite: MATH 385; 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 or equivalent.

ME 330  **Engineering Materials**  credit: 4 hours.
Structures of polymers, metals, and ceramics as the basis for their mechanical behavior. Manipulation of structure through processes such 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 material selection in design. Credit is not given for both ME 330 and either MSE 280 or TAM 324 / CEE 300. Prerequisite: TAM 251 and CHEM 104.

ME 340  **Model and Anlys of Dynm Sys**  credit: 3.5 hours.
Dynamic modeling of mechanical components and systems; time domain and frequency domain analysis 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: TAM 212 and MATH 385; credit or concurrent registration in ECE 205, ECE 206, and MATH 415; or consent of instructor.

ME 350  **Design for Manufacturability**  credit: 3 hours.
Introduction to DFM methodologies and tools; quality management (Taguchi, PFD, SPC, etc.); material 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 (DFA); design for inspection and metrology (datums, geometric tolerancing, and inspection equipment); computer integrated manufacturing (CIM). Prerequisite: ME 170; credit or concurrent registration in ME 330.

ME 360  **Signal Proc, Inst and Control**  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 or equivalent.

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.
Series of lectures by faculty and invited authorities from the profession concerning the ethics and practices of mechanical engineering in their relationship to other fields of engineering, economics, and the problems of society. Prerequisite: Junior standing in mechanical engineering. Must be taken in Spring term.

ME 400   Energy Conversion Systems   credit: 3 hours.
Analyzes processes and systems for energy conversion, including power and refrigeration cycles, air conditioning, thermoelectrics and fuel cells; ideal gas mixtures and psychrometrics. Prerequisite: ME 300 or consent of instructor.

ME 401   Refrigeration and Cryogenics   credit: 3 OR 4 hours.
The theory of operation and the design of equipment for the production of low temperatures from below ambient down to near absolute zero; applications to industrial, consumer, aerospace, medical, and various research uses. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ME 300, ME 310, and ME 320; or consent of instructor.

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; and 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.
Study of the fundamental principles underlying the theory and analysis of reciprocating internal combustion engines, fuels, carburetion, combustion, exhaust emissions, detonation, fuel injection, and factors affecting performance; basic laboratory work involving measurements of effects of variables on performance. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Credit or concurrent registration in ME 400 or ABE 466, or consent of instructor.

ME 404   Intermediate Thermodynamics   credit: 4 hours.
Classical thermodynamics including the Tds equations and the Maxwell relations, development of thermodynamic property relations, P-v-T 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 are discussed. Credit is not given for both ME 404 and any of PHYS 427, CHEM 442, or CHEM 444. Prerequisite: ME 300 or a first course in thermodynamics.

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; considers flows with area change (smooth and abrupt), with friction, with heat addition, and with mass addition. Examines flows with weak and strong waves, multiple confined streams, and shock waves. Prerequisite: ME 300 and ME 310, or first course in fluid mechanics.

ME 411   Viscous Flow and Heat Transfer   credit: 4 hours.
Same as AE 412, and TAM 438. See AE 412.

ME 412   Num Techniq in Thermal Science   credit: 3 OR 4 hours.
Course discusses numerical techniques for the solution of the equations governing conduction/convective heat transfer and steady/unsteady fluid flows. Emphasis is placed on finite-difference and finite-volume techniques. Course presents selected basic algorithms and prepares students to solve 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; or equivalents; or consent of instructor.

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; or equivalents; or consent of instructor.

ME 430  **Failure Mechanisms in Eng Mat**  credit: 3 OR 4 hours.
Study of anisotropy of material and elasto-plastic properties at 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 or equivalent.

ME 431  **Failure Anlys of Mechani Compt**  credit: 3 OR 4 hours.
Examines the relationship of materials and mechanics concepts to the design of structures and components; topics include a brief introduction to elasticity, plasticity theories, 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; ME 430 is recommended.

ME 440  **Kinem and Dynm of Mechani Sys**  credit: 3 hours.
Introductory study of the kinematics and dynamics of constrained planar rigid body mechanical systems. Students will learn the underlying theory of modern computer-based analysis software packages. Same as ABE 420. Prerequisite: ME 370 or consent of instructor.

ME 441  **Automotive Vehicle Dynamics**  credit: 3 OR 4 hours.
Introduction to the dynamics and control of automotive multi-degree-of-freedom systems; the development and solution of governing equations for both steady-state and transient conditions by computer simulation techniques; investigation of the performance, handling, and safety aspects of vehicles and their interaction with external and internal interfaces; examination of the influence of tires, suspension, steering, and aerodynamic forces; and laboratory experiments and demonstrations. Prerequisite: ME 340 or equivalent or consent of instructor.

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 in Materials Proc**  credit: 3 hours.
Analysis of manufacturing processes for metals and polymers. Creation of process models based on momentum, heat, and mass transfer. Model simplification by estimation and scaling. Example applications include casting, microstructure evolution, polymer molding and extrusion, and welding. Prerequisite: ME 320 and ME 330; or consent of instructor.

ME 460  **Industrial Control Systems**  credit: 4 hours.
Study of industrial control techniques by case studies of actual industrial systems; provides competence in the design, selection, and maintenance of industrial control systems; and introduces applications to electromechanical, pneumatic, thermal, and hydraulic systems. Credit is not given for both ME 460 and ECE 486. Prerequisite: ME 340 and ME 360; or equivalents; or consent of instructor.

ME 461  **Computer Ctrl of Mechani Sys**  credit: 3 OR 4 hours.
Examines microcomputer control of thermal and mechanical systems: sensing and transducing of variables, transmitting and converting signals, and actuating regulators associated with mechanical engineering systems. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: ME 360 or ABE 425.

ME 462  **Modern Control Theory**  credit: 4 hours.
The concept of state; state-space representation of systems; transfer function decomposition and state-variable diagrams; state response of continuous and discrete-data systems; determination of the transition matrix; diagonalization; state response of time-varying systems; controllability and observability; stability and Lyapunov's method; and introduction to optimization and design. Prerequisite: ME 340 or equivalent or consent of instructor.

ME 470  **Senior Design Project**  credit: 3 hours.
Students are required to solve an actual, real world design problem; to develop, evaluate, and recommend alternative solutions; and to satisfy realistic constraints that include most of the following considerations: economic; environmental; sustainability; manufacturability; ethical; health and safety; social; and political. Same as IE 470. 3 undergraduate hours. No graduate hours. Prerequisite: Senior standing in mechanical engineering or industrial engineering; completion of or concurrent enrollment in all required courses; completion of campus Composition I general education requirement.

This course satisfies the General Education Criteria for a:
UIUC: Advanced Composition
ME 471  **Intro to Finite Element Anlys**  credit: 3 OR 4 hours.
The finite element method and its application to engineering problems. Analysis of truss and frame structures, heat conduction, and linear elasticity. Issues in the use of application software, and an overview of advanced topics such 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; or consent of instructor.

ME 472  **Introduction to Tribology**  credit: 4 hours.
An introduction to 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. Prerequisite: Senior or graduate standing, or consent of instructor.

ME 485  **Intro MEM Devices & Systems**  credit: 3 hours.
Same as ECE 485 and IE 485. See ECE 485.

ME 496  **Honors Project**  credit: 1 TO 4 hours.
Special project or reading course for James Scholars in engineering. 1 to 4 undergraduate hours. Prerequisite: James Scholar in engineering; consent of instructor.

ME 497  **Independent Study**  credit: 1 TO 4 hours.
Independent study of advanced problems related to mechanical engineering. Prerequisite: Junior or senior standing; consent of instructor.

ME 498  **Special Topics**  credit: 0 TO 4 hours.
Lectures on special topics in selected areas of mechanical engineering. May be repeated in the same or separate terms as topics vary to a maximum of 9 hours. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

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

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.
Comprehensive study of the 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 parts of the engine. Prerequisite: ME 403 or equivalent or consent of instructor.

ME 504  **Nonequil Multiphase 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; and transport with surface reactions. Prerequisite: ME 404 or consent of instructor.

ME 510  **Advanced Gas Dynamics**  credit: 4 hours.
Introduction to theoretical gas dynamics; fundamental laws and basic equations for subsonic, transonic, and supersonic steady and unsteady flow processes. Prerequisite: ME 410 or equivalent or consent of instructor.

ME 515  **Air Quality Control**  credit: 4 hours.
Same as CEE 546. See CEE 546.

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 or consent of instructor.

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; and liquid metals. Prerequisite: ME 411 or consent of instructor.

ME 522  **Thermal Radiation**  credit: 4 hours.
Fundamentals of radiant energy transport in absorbing and nonabsorbing media; pyrometry; and applications to selected problems involving combined energy transport mechanisms. Prerequisite: ME 420 or consent of instructor.

ME 530  **Fatigue Analysis**  credit: 4 hours.
Examines fatigue analysis methods for the design of structures and components; includes stress life, strain life, and crack propagation approaches; considers multi-axial and high temperature fatigue; emphasis is placed on the interrelationship between material properties, geometry, and design methodology appropriate for the wide range of mechanical engineering components. Prerequisite: ME 430 or consent of instructor.

ME 531  **Inelastic Design Methods**  credit: 4 hours.
Principles of material deformation under combined mechanical and thermal loading; constitutive equation applications in engineering design and in inelastic finite element methods; material and structural degradation under fatigue and creep conditions. Prerequisite: ME 471 and ME 430; or consent of instructor.

ME 532  **Fracture Resistant Design**  credit: 4 hours.
Application of fracture mechanics and microstructural behavior to material 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 study and design project oriented. Prerequisite: ME 430 or consent of instructor.

ME 545  **Elastodynamics and Vibrations**  credit: 4 hours.
Same as TAM 514. See TAM 514.

ME 546  **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; and the 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 or consent of instructor.

ME 551  **Polymer Rheology & Processing**  credit: 4 hours.
Continuum models for non-Newtonian fluids: generalized Newtonian, linear viscoelastic, and nonlinear viscoelastic models; examines relationship of rheology to processing; considers advanced problems in polymer processing such as numerical simulations of nonisothermal non-Newtonian flows, reactive processing, and processing of composites. Prerequisite: ME 450 or consent of instructor.

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. Students will develop and apply a computational model to simulate a process of their choice and complete a project involving extensive computation. Lecture topics include steps in carrying a modeling project from problem definition to final report, advanced topics in computational methods for materials process modeling, and case studies. Same as CSE 561. Prerequisite: ME 450 or equivalent; either ME 412 or ME 471; or consent of instructor.

ME 555  **Composites Manufacturing**  credit: 4 hours.
Same as AE 526 and TAM 526. See AE 526.

ME 565  **Model & Ctrl Electromech Syst**  credit: 4 hours.
Same as ECE 568. See ECE 568.

ME 570  **Des & Anlys of Nonlin Continua**  credit: 4 hours.
Optimality conditions; finite element methods; design sensitivity analysis; nonlinear analysis; transient analysis; thermo-mechanical solid mechanics. Prerequisite: Introductory courses in finite element analysis and in continuum mechanics, or consent of the instructor.

ME 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 mechanical engineering. May be repeated. Approved for S/U grading only.

ME 597  **Independent Study**  credit: 1 TO 4 hours.
Independent study of advanced problems related to mechanical engineering. May be repeated in the same or separate terms as topics vary to a maximum of 12 hours. Prerequisite: Consent of instructor.

**ME 598  Special Topics**  credit: 1 TO 4 hours.

Lectures on special topics in selected areas of mechanical engineering. May be repeated. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

**ME 599  Thesis Research**  credit: 0 TO 16 hours.

May be repeated. Approved for S/U grading only.
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  **Intro to Mfg Systems**  credit: 3 hours.
Broad-based introduction of various topics in manufacturing engineering including materials processing, manufacturing automation and process control, product/process design, and planning. Prerequisite: Junior standing in Engineering or consent of instructor.

MFGE 420  **Dec-Making & Cntrl Appl in Mfg**  credit: 3 hours.
Integrates production planning, production scheduling, and process supervision and control into a manufacturing hierarchy. Demonstrates interfaces with other manufacturing functions. Focuses on the integration of the functions as well as the integration of decision-making and control considerations. Graduate credit is not given to students in the College of Engineering, except by special permission of the student's department. Prerequisite: Consent of instructor. A course in probability is desirable.

MFGE 430  **Introduction to Mechatronics**  credit: 3 hours.
Same as GE 423. See GE 423.

MFGE 450  **Info Mgmt for Mfg Systems**  credit: 3 hours.
Introduction to the role of information in manufacturing systems, components of an information system, structures for data storage, data maintenance, data base management systems, and networking data. Graduate credit is not given to students in the College of Engineering, except by special permission of the student's department. Prerequisite: CS 101 or equivalent.

MFGE 497  **Independent Study**  credit: 1 TO 3 hours.
Study of advanced problems related to manufacturing engineering. 1 to 3 undergraduate hours. No graduate credit. Prerequisite: Senior standing; consent of instructor.

MFGE 498  **Special Topics**  credit: 1 TO 4 hours.
Lectures on special topics in selected areas of Manufacturing Engineering. May be repeated in the same or separate terms as topics vary to a maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: Senior standing; as specified for each topic offering; see Schedule or departmental course information.
Microbiology

Head of Department: John E. Cronan
Department Office: B103 Chemical and Life Sciences Lab., 601 South Goodwin, Urbana
Phone: 333-1737
www.life.uiuc.edu/micro/home.html

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: Steven Satterlee
Department Office: 113 Armory Building, 505 East Armory, Champaign
Phone: 333-3418
www.uiuc.edu/unit/armyrotc

MILS 101 Foundations of Officiership 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.

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.

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. 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.

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.

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. May be repeated. Approved for S/U grading only.

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. May be repeated. Approved for S/U grading only.

MILS 324  **Leadership Laboratory**  credit: 0 hours.
Continuation of MILS 322. Field trip required. May be repeated. Approved for S/U grading only.

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.

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.
Molecular and Integrative Physiology

Molecular and Integrative Physiology
Head of Department: Philip M. Best
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. May be repeated. Approved for S/U grading only.
MSE 100  **Materials Lectures**  credit: 1 hours.
Lecture and demonstration course to introduce freshmen to the field of materials science and engineering.

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  **Intro to Materials Sci and Eng**  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 199  **Undergraduate Open Seminar**  credit: 1 TO 5 hours.
May be repeated to a maximum of 5 hours. Students may register in more than one section per 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, MSE 182, PHYS 212, and MATH 242; or consent of instructor.

MSE 206  **Mechanics for MatSE**  credit: 4 hours.
Same as TAM 206. See TAM 206.

MSE 280  **Intro to Eng 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; and phase diagrams. Case studies will be used to exemplify the lecture material. Credit is not given for both MSE 280 and either TAM 324 or ME 330. Prerequisite: PHYS 212, MATH 342, and credit or registration in PHYS 214.

MSE 304  **Electronic Properties of Matls**  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. (Students may substitute PHYS 460 for MSE 304 as part of the Materials Science and Engineering degree requirements.) Prerequisite: PHYS 214 and junior standing in science or engineering; or consent of instructor.

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 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; and 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 hours.**

Design of various engineering devices, objects, or systems. Teams of 2-5 students from different concentrations within the department work toward the development of materials-based solutions to problems originating from student, faculty, and industrial suggestions. Projects will be guided by various faculty within the department, with the teams presenting mid-term (oral) and final reports. 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, or MSE 470.

**MSE 397  Independent Study in MatSE  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 if topics vary. Prerequisite: Sophomore standing or above and consent of instructor.

**MSE 398  Special Topics in MatSE  credit: 1 TO 4 hours.**

Structured presentations of new and developing areas of knowledge in materials science and engineering offered by the faculty to augment the formal courses available. May be repeated in the same or subsequent terms as topics vary. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

**MSE 401  Thermodynamics of Materials  credit: 4 hours.**

Examines basic thermodynamic principles including energy, entropy, and free energy; describes the macroscopic properties of various materials systems such as equilibrium states, phases, and phase transitions; emphasizes metals, ceramics, polymers, and electronic materials. Particular attention is paid 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, or PHYS 427. MatSE students will not receive credit for this course toward a graduate degree. Prerequisite: CHEM 104; PHYS 212; MATH 242 or MATH 385.

**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. MatSE students will not receive credit for this course toward a 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. MatSE students will not receive credit for this course toward a 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, MSE 201.

**MSE 406  Thermal-Mech Behavior 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 330 or TAM 324. MatSE students will not receive credit for this course toward a graduate degree. Prerequisite: TAM 206 and MSE 301.

**MSE 420  Ceramic Matls and 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. Prerequisite: Junior standing in engineering, or consent of instructor.

**MSE 421  Cer Proc & Microstruc Devel  credit: 3 OR 4 hours.**
Basic principles and understanding of microstructure development and processing of ceramic materials will be addressed, with an emphasis on structure-property-processing relationships. Knowledge of a variety of processing methodologies and their effects on microstructural development will be gained. 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 or consent of instructor.

MSE 422  Electrical Ceramics  credit: 3 hours.

Presents the subject of dielectric crystals and their electrical properties; discussion and correlation of ferroelectric and piezoelectric properties of several crystal classes; coverage in detail of the perovskite class of ferroelectric compounds; and discussion of spinel, garnet, and hexagonal type ferrimagnetic crystals and their properties. Prerequisite: MSE 421 or consent of instructor.

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 or consent of instructor.

MSE 424  Refractory Technology  credit: 3 OR 4 hours.

Engineering properties and thermochemistry of polycrystalline materials for use at elevated temperatures including processing of raw materials and the manufacture, heat treatment, quality control, and specification of refractory products; particular emphasis on oxides, silicates, carbides, borides, cermets, and refractory metals with a correlation of the properties of those materials to certain design criteria. Includes laboratory if taken for 4 hours of graduate credit. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Senior standing in engineering.

MSE 425  Chemically Bonded Ceramics  credit: 3 OR 4 hours.

Examines the principles and technology of producing ceramic materials bonded by hydrated compounds formed by hydration reactions of inorganic cements. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Senior standing and CEE 401.

MSE 426  Glass Chemistry and Technology  credit: 3 hours.

Introduces the fundamentals of glass science and technology. Provides a comprehensive overview of the ubiquitous phenomena associated with the amorphous state of matter, including glass transition and viscous relaxation, as well as the mechanical, optical, and dielectric properties of glasses. These behaviors are discussed in the context of different thermodynamic, structural, and kinetic models. The use of various characterization techniques for the understanding of the glassy state are reviewed. Different methods for processing, forming, and treatment of glasses are contrasted, using examples of conventional and new high-technology applications. Prerequisite: Consent of instructor or senior undergraduate or graduate standing in Engineering, Chemistry or Geology.

MSE 428  Process Design  credit: 3 hours.

Reviews the basic concepts of heat and mass transfer, control theory and statistical analysis in the context of fabrication processes typical of materials industries; supplements the numerical procedures and algorithms that constitute a computational repertoire, adequate for the engineering practice. In the frame of an actual engineering design project, the combined application of the principles of materials processing, plant layout, reactor design, peripheral facilities, logistics of supply, and economic feasibility are practiced. Prerequisite: MSE 421.

MSE 440  Adv Mechanical Prop of Solids  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 or consent of instructor.

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 or equivalent; or consent of instructor.

MSE 442  Metals Laboratory  credit: 3 hours.

Advanced metallurgy laboratory. Effects of heat treatment; mechanical testing, oxidation and corrosion; and 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 440 or consent of instructor.

MSE 444  Welding and Joining Processes  credit: 3 OR 4 hours.
The 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; and laboratory experiments in welding. Same as CEE 400. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: TAM 324 or TAM 206 or equivalent.

MSE 445  Corrosion of Metals  credit: 3 OR 4 hours.
Electrochemistry, thermodynamics, and kinetics of corrosion; behavior of ferrous and nonferrous metals; corrosion rates; corrosion control; cathodic and anodic protection; high-temperature corrosion; corrosion testing; and electrolytic machining methods. 3 undergraduate hours. 3 or 4 graduate hours.

MSE 450  Intro to Polymer Sci and Eng  credit: 3 OR 4 hours.
Fundamentals of polymer science and engineering. Polymer solution properties, conformation, and molecular weight characterization. Rheological and viscoelastic behavior: relaxations and transitions, rubber elasticity. Crystalinity, morphology, and deformation of crystalline polymers. Blends and composites. Methods of fabrication. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Advanced undergraduate or graduate standing.

MSE 451  Intro to Polymer Synthesis  credit: 1 hours.
Fundamentals of polymer synthesis and configuration characterization. Examines step-growth, addition, and coordination polymerization; kinetics and molecular weight distributions. Studies co-polymers; applications of IR, NMR, and ESCA to configuration characterization. Credit is not given for both MSE 451 and MSE 403. Prerequisite: Concurrent registration in MSE 450 or consent of instructor.

MSE 452  Polymer Laboratory  credit: 3 hours.
Polymer synthesis, characterization (molecular, thermal, and structural), processing, and mechanical behavior are investigated experimentally. Prerequisite: MSE 450 or consent of instructor.

MSE 453  Plastics Engineering  credit: 3 hours.
Introductory course to plastics engineering. Examines components of plastics and data banks; viscoelasticity, yield, and fracture; reinforced polymers; processing, design (project), and 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 cond crystals; deformation mechanisms and orientation characterization; relaxations and transitions; crystallization theory. Prerequisite: MSE 450 or consent of instructor.

MSE 457  Polymer Chemistry  credit: 3 OR 4 hours.
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 460. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: Senior standing in MSE or Chemistry.

MSE 458  Polymer Physical Chemistry  credit: 3 OR 4 hours.
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: 400-level course in thermodynamics, statistical thermodynamics, or physical chemistry.

MSE 460  Electronic Mats & Proc, I  credit: 3 hours.
Introduces senior engineers and new graduate students to 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: MSE 461 or consent of instructor.

MSE 461  Electronic Mats & Proc, II  credit: 3 hours.
Introduction to the materials science, engineering, and processing of microlithographic materials, conductors, and dielectrics for electronic applications. The course 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: PHYS 214; MATH 385 or consent of instructor; MSE 304 or PHYS 460 or equivalent.

MSE 462  Electronic Materials Lab  credit: 3 hours.
Introduces seniors and new graduate students to 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.; and (iii) characterization of key properties including electrical conductivity, optical properties, and stress. Methods to optimize the film microstructure and engineering properties via growth techniques are emphasized. Prerequisite: Concurrent registration in MSE 460 or consent of instructor.

**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. Lectures are augmented with clinical presentations. Credit is not given for both MSE 470 and MSE 471. Prerequisite: MSE 406; credit or concurrent registration in MCB 252; or consent of instructor.

**MSE 471**  **Biomaterials for Engineers**  credit: 3 hours.

Introduces fundamental concepts of materials, with particular emphasis on implant materials. Reviews the biological and engineering aspects of implant materials, the characterization of major classes of promising implant materials, the problems of tissue-implant interaction, and surgical problems involved in implant work. Same as BIOE 471. Prerequisite: CHEM 104 and PHYS 213; or consent of instructor.

**MSE 472**  **Biomaterials Laboratory**  credit: 1 hours.

Experiments and demonstrations of the methods used to assess performance and biocompatibility of materials in medical applications. Prerequisite: Credit or registration in MSE 470, or consent of instructor.

**MSE 473**  **Biomolecular Materials Science**  credit: 3 hours.

This senior course will emphasize fundamental, unifying principles in biomolecular materials science. The major classes of materials under consideration include: nucleic acids, proteins, lipids, and sugars. Specific and non-specific interactions which govern biomolecular behavior in a wide range of contexts (ex. self-assembly, cell adhesion) will also be covered. The relation of our present state of knowledge to extant empirical evidence will be 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 will be required. Prerequisite: Senior or graduate standing in engineering; or consent of instructor.

**MSE 480**  **Surfaces and Colloids**  credit: 3 OR 4 hours.

An 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 or equivalent; or consent of instructor.

**MSE 481**  **Electron Microscopy & Diffract**  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 or equivalent.

**MSE 482**  **Phys and Soc Sci Simulation**  credit: 3 hours.

Section A - Computer Simulation Studies for Physical Scientists: Students learn how to develop computer models to simulate a variety of phenomena that are significant in the physical sciences, such as: solidification, phase ordering, interfacial diffusion, adsorption-desorption, percolation and gelation, excitable media, and fracture. Section B - Computer Simulation Studies for Social Scientists: Students learn how to develop computer models to simulate a variety of phenomena that are significant in the social sciences, such as: the prisoner's dilemma problem and its variants, social norms, cultural transmission, role models, fads and fashions, stock market bubbles and crashes. Same as CSE 472 and ECON 474. Prerequisite: Junior, senior, or graduate standing; or consent of instructor.

**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. Prerequisite: Senior standing in Engineering or consent of instructor.

**MSE 485**  **Atomic Scale Simulations**  credit: 3 OR 4 hours.

The objective is to learn and apply fundamental techniques of Monte Carlo and Molecular Dynamics used in (primarily classical) simulations in order to help 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 will be 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: A course in statistical mechanics or statistical thermodynamics and prior experience in programming in C, C++, or Fortran; or consent of instructor.
MSE 486  Selection of Eng Matls  credit: 3 hours.
In this course the mechanical, chemical, and thermal behavior of different classes of materials (metals, ceramics, polymers, and composites) will be compared and contrasted. Consideration of the trade-offs in selecting materials for specific applications will be considered and exemplified by case studies. 3 undergraduate hours. No graduate credit. Credit is not given to students in MSE. Prerequisite: TAM 206; or TAM 210 and TAM 251.

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 MSE.

MSE 497  Independent Study in MatSE  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: Senior or graduate standing and consent of instructor.

MSE 498  Special Topics in MatSE  credit: 1 TO 4 hours.
Structured presentations of new and developing areas of knowledge in materials science and engineering offered by the faculty to augment the formal courses available. May be repeated. Students may register in more than one section per term. Prerequisite: Senior or graduate standing; as specified for each topic offering, see Schedule or departmental course information.

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. May be repeated to a maximum of 6 hours. 1 to 5 undergraduate hours. No graduate credit. A minimum total credit of 3 undergraduate hours is required. Prerequisite: Senior standing, grade point average of 3.0 or better, and consent of instructor.

MSE 500  Statistical Thermo of Matls  credit: 4 hours.
Presents the atomistic concepts of statistical thermodynamics and shows its relationship to classical phenomenological thermodynamics. Applies the methods of statistical thermodynamics and statistical mechanics to describe the properties of a variety of materials, especially ceramics, polymers, electronic materials, and metals. Prerequisite: Undergraduate course in thermodynamics or consent of instructor.

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: Graduate course in statistical thermodynamics or consent of instructor.

MSE 520  Crystal Phys, Struc Prop Relat  credit: 4 hours.
Presentation of the 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, thermolectric, optic, and electro-optic. Prerequisite: MSE 405 or equivalent; MSE 500; or consent of instructor.

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; and correlation of the piezoelectric properties of ferroelectric crystals and ceramics with the crystal structure, microstructure, and the ferroelectric properties. Prerequisite: Consent of instructor.

MSE 526  Mineralogy of Clays  credit: 4 hours.
Same as GEOL 532. See GEOL 532.

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. 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. Approved for S/U grading only. Prerequisite: Graduate standing.

MSE 540  Advanced Mechanical Behavior  credit: 4 hours.
Studies point, line, and surface defects in metals; configuration, thermodynamics, and motion; quantitative description of single dislocation properties; and interactions among defects. For students in metallurgy, ceramics, physics, and other solid state sciences. Prerequisite: MATH 385 and MSE 406; or consent of instructor.

MSE 542  Solidification Processing  credit: 4 hours.
MSE 559  Soft Materials Seminar  credit: 1 hours.
Seminar on current research in the science and engineering of soft materials; includes presentations by visiting lecturers, staff, and students. 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 of the MatSE Ph.D. degree. Approved for S/U grading only. Prerequisite: Graduate standing.

MSE 561  Electronic Prop of Solids  credit: 4 hours.
Derives and describes the electronic properties of crystalline solids. Topics include crystal structure, electronic band structure, electron transport, and defects in metals, semiconductors, and ceramics. Prerequisite: MSE 304 or PHYS 460.

MSE 562  Charact of Electronic Matls  credit: 4 hours.
Presents the theory and application of advanced optical and electronic characterization techniques applied to thin film materials. Subjects include resistivity, Hall effect, photoconductivity, drift mobility, photoluminescence, capacitance-voltage, deep level transient spectroscopy, optical absorption, IR absorption, and ellipsometry. Students set up and carry out these measurements in the laboratory. Prerequisite: MSE 304; ECE 440 or PHYS 460; or consent of instructor.

MSE 564  Vapor Phase Thin Film Growth  credit: 4 hours.
Introduction to 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, and a graduate course in solid state physics; or equivalent background. Recommended: MSE 582 or CHBE 553.

MSE 568  Diffraction Physics of Matls  credit: 4 hours.
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: PHYS 436 or MSE 405, or consent of instructor.

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, tunnelling; Van der Waals forces; theory of chemical interactions; and kinetics and statistics of adsorption. Same as PHYS 564. Prerequisite: MSE 501 or PHYS 560 or consent of instructor.

MSE 584  Point and Line Defects  credit: 4 hours.
Course focuses on the 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: At least one course in solid-state physics and one in thermodynamics.

MSE 586  Selection of Materials  credit: 4 hours.
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 to M.S. and Ph.D. thesis students who received their B.S. degree in MatSE. Credit is not given for both MSE 586 and MSE 486. Prerequisite: TAM 251 and AE 321 or equivalents.

MSE 590  Research Seminars  credit: 0 TO 1 hours.
Discussions and lectures on current research under the direction of individual staff members. 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: Graduate standing and consent of instructor.

MSE 591  Lab Investigations in MatSE  credit: 0 TO 8 hours.
Special investigations in materials providing an opportunity for instruction in experimental methods of research. May be repeated to a maximum of 8 hours. Prerequisite: Graduate standing and consent of instructor. Available only to non-thesis students enrolled in a Master of Science Program.

MSE 595  Materials Colloquium  credit: 0 TO 1 hours.
Presentation of cutting-edge materials research given by visiting lectures from academia as well as national and industrial research laboratories. Some of the research currently done in the Department of MatSE will also be presented. Students also meet with visitors for questions and discussion. Required of all graduate students in the department during their first two years. 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. Approved for both letter and S/U grading.
MSE 597  **Independent Study in MatSE**  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 in MatSE**  credit: 1 TO 4 hours.
Structured presentations of new and developing areas of knowledge in materials science and engineering offered by faculty to augment the formal courses available. May be repeated. Students may register in more than one section per term. Approved for both letter and S/U grading. Prerequisite: Graduate standing and consent of instructor; as specified for each topic offering, see Schedule or departmental course information.

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. May be repeated. Approved for S/U grading only.
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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MUS 090</td>
<td>Seminar in Music Education</td>
<td>0</td>
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<tr>
<td></td>
<td>Lecture and performance series in music education. Selected topics and performances focus on trends in music and music education. Prerequisite: Music education majors or consent of instructor.</td>
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<tr>
<td>MUS 099</td>
<td>Introd Theory and Aural Skills</td>
<td>2</td>
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<tr>
<td></td>
<td>Remedial course introducing theory and aural skills. Prerequisite: For music majors only. Admission by placement examination. Credit does not apply to any music degree.</td>
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<tr>
<td>MUS 101</td>
<td>Music Theory and Practice I</td>
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<tr>
<td></td>
<td>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.</td>
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<tr>
<td>MUS 102</td>
<td>Music Theory and Practice II</td>
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<td></td>
<td>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.</td>
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<tr>
<td>MUS 103</td>
<td>Rudiments of Music Theory I</td>
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<td></td>
<td>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.</td>
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<tr>
<td>MUS 104</td>
<td>Rudiments of Music Theory II</td>
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<td></td>
<td>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.</td>
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<tr>
<td>MUS 106</td>
<td>Beginning Composition</td>
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<td>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.</td>
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<tr>
<td>MUS 107</td>
<td>Aural Skills I</td>
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<td>Beginning aural skills training in the areas of intervals, scales, chords, rhythm, melody, and harmony. Concurrent registration in MUS 101 is required.</td>
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<tr>
<td>MUS 108</td>
<td>Aural Skills II</td>
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<td>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.</td>
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<tr>
<td>MUS 110</td>
<td>Introd Art Mus: Intl Perspect</td>
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<td>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.</td>
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<tr>
<td>MUS 120</td>
<td>English Diction</td>
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<td>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.</td>
<td></td>
</tr>
<tr>
<td>MUS 121</td>
<td>Italian Diction</td>
<td>1</td>
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</table>
Phonetics applied to Italian song literature; 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 students 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
UIUC: Non-Western Cultures

**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  Elem Str Insts: Violin/Viola**  credit: 2 hours.
Class instruction in the fundamentals of playing and teaching the violin and viola. Prerequisite: For music majors only.

**MUS 141  Elem Str Insts: Cello/Bass**  credit: 2 hours.
Class instruction in the fundamentals of playing and teaching the cello and double bass. Prerequisite: For music majors only.

**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 non-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 non-woodwind 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 non-woodwind 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 non-woodwind 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 non-woodwind 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: Orientation for 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: For BME students in 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: For BME students in instrumental concentration.

**MUS 158 Supp Percussion Instruments**  credit: 2 hours.
Class instruction in the fundamentals of playing and teaching percussion instruments. For BME students in 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: 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 up to 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 and consent of the instructor.
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, Class Jazz Improvisation I. 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 forms, 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 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.
Elementary piano for non-music majors. Continuation of basic skills presented in MUS 170. 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 Major II**  credit: 2 hours.
Group instruction in elementary piano for music majors whose principal performing medium is voice, or an orchestral or band instrument. Continuation of skills introduced in MUS 172. 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 the 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.
Group instruction in intermediate piano for music majors whose principal performing medium is voice, or an orchestral or band instrument. Continuation of skills introduced in MUS 173. 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.
Group instruction in moderately advanced piano for music majors whose principal performing medium is voice, or an orchestral or band instrument. Continuation of skills introduced in MUS 174. 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.) 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. (Summer session, 1 or 2 undergraduate 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.) 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.) 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.) Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.

**MUS 183 Violin**  credit: 1 TO 3 hours.
Instruction in violin at the undergraduate level. Music majors must register concurrently in MUS 250. (Summer session, 1 or 2 undergraduate 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 3 hours.
Instruction in viola at the undergraduate level. Music majors must register concurrently in MUS 250. (Summer session, 1 or 2 undergraduate 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 3 hours.
Instruction in cello at the undergraduate level. Music majors must register concurrently in MUS 250. (Summer session, 1 or 2 undergraduate 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 3 hours.
Instruction in double bass at the undergraduate level. Music majors must register concurrently in MUS 250. (Summer session, 1 or 2 undergraduate 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.) 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.) 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.) 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.) 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.) 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.) 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.) 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.) 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.) Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 196</td>
<td>Euphonium</td>
<td>1 TO 4 hours</td>
<td>Instruction in euphonium at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.</td>
</tr>
<tr>
<td>MUS 197</td>
<td>Tuba</td>
<td>1 TO 4 hours</td>
<td>Instruction in tuba at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.</td>
</tr>
<tr>
<td>MUS 198</td>
<td>Percussion</td>
<td>1 TO 4 hours</td>
<td>Instruction in percussion at the undergraduate level. (Summer session, 1 or 2 undergraduate hours.) Prerequisite: Passing of a performance audition is required prior to the initial registration in any applied music course.</td>
</tr>
<tr>
<td>MUS 199</td>
<td>Undergraduate Open Seminar</td>
<td>1 TO 5 hours</td>
<td>May be repeated.</td>
</tr>
<tr>
<td>MUS 201</td>
<td>Music Theory and Practice III</td>
<td>2 hours</td>
<td>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.</td>
</tr>
<tr>
<td>MUS 202</td>
<td>Music Theory and Practice IV</td>
<td>2 hours</td>
<td>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.</td>
</tr>
<tr>
<td>MUS 203</td>
<td>Instrumentation I</td>
<td>2 hours</td>
<td>Basic instrumentation and scoring for small ensembles. Prerequisite: MUS 102 and MUS 108.</td>
</tr>
<tr>
<td>MUS 204</td>
<td>Instrumentation II</td>
<td>2 hours</td>
<td>Arranging for all wind instruments. Required of composition majors. Prerequisite: MUS 203 or consent of instructor.</td>
</tr>
<tr>
<td>MUS 206</td>
<td>Intermediate Composition</td>
<td>2 hours</td>
<td>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.</td>
</tr>
<tr>
<td>MUS 207</td>
<td>Aural Skills III</td>
<td>2 hours</td>
<td>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.</td>
</tr>
<tr>
<td>MUS 208</td>
<td>Aural Skills IV</td>
<td>1 hours</td>
<td>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.</td>
</tr>
<tr>
<td>MUS 220</td>
<td>Jazz Rhythm Section Seminar I</td>
<td>2 hours</td>
<td>Examines, through instructor and student demonstration, 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.</td>
</tr>
<tr>
<td>MUS 221</td>
<td>Jazz Rhythm Section Seminar II</td>
<td>2 hours</td>
<td>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.</td>
</tr>
<tr>
<td>MUS 223</td>
<td>Jazz Keyboard Studies III</td>
<td>2 hours</td>
<td>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, 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.</td>
</tr>
<tr>
<td>MUS 224</td>
<td>Jazz Keyboard Studies IV</td>
<td>2 hours</td>
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</tbody>
</table>
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 and consent of the instructor.

MUS 240  *Intro 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  *Intro 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.
Prerequisite: Consent of instructor.

MUS 252  *Ethnomusico Darck 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 up to 2 hours in a semester, to a maximum of 8 hours. Prerequisite: Consent of instructor. Approved for both letter and S/U grading.

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. 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 for credit. Prerequisite: Consent of instructor.

MUS 255  *Woodwind Ensemble*  credit: 1 hours.
May be repeated for credit. Prerequisite: Consent of instructor.

MUS 256  *Brass Ensemble*  credit: 1 hours.
Ensembles of mixed brasses in both small and large forms. May be repeated for credit. Prerequisite: Consent of instructor.

MUS 257  *Percussion Ensemble*  credit: 1 hours.
May be repeated for credit. Prerequisite: Consent of instructor.

MUS 258  *Piano Ensemble*  credit: 1 hours.
May be repeated for credit. Prerequisite: Consent of instructor.

MUS 260  *Oratorio Society*  credit: 1 hours.
Performance of oratorios and other major choral works in cooperation with the University Symphony Orchestra or Wind Symphony. An advanced mixed-voice chorus open to students, faculty, and members of the community. Prerequisite: Consent of instructor.

MUS 261  *University Chorus*  credit: 1 hours.
Performance of cantatas and other choral works. A mixed-voice chorus for average and beginning singers open to students, faculty, and members of the community. 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. 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. Prerequisite: Consent of instructor.

MUS 264  Concert Choir  credit: 1 hours.
Practical experience in mixed-voice singing of accompanied and unaccompanied music of various periods and styles. A highly advanced group of competent student singers. 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). 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. 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 performance per term may be required. May be repeated to a maximum of 8 hours. 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 appearances by the band. 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 appearances by the band. 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 appearances by the band. 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 appearances by the band. 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 appearances by the band. 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 appearances by the band. 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 appearances by the band. 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 appearances by the bands. 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 appearances by the band. 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 composition-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. Counts for advanced hours in LAS. Prerequisite: Senior standing in the history of music or composition-theory curriculum, or consent of instructor.

MUS 301  **Comp Probs Serial Techniques**  credit: 2 hours.
Study of serial techniques and levels of determinacy through composition and analysis. Prerequisite: MUS 202 and MUS 208, or consent of instructor.

MUS 302  **Comp Probs Tech Visual Aspects**  credit: 2 hours.
Studies electronic and computer applications, visual and gestural elements, and levels of determinacy through composition and analysis. Prerequisite: Consent of composition-theory faculty.

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 Lit and Conducting II**  credit: 2 hours.
Laboratory course emphasizing rehearsal techniques, score preparation, and interpretation. Emphasizes the integration of aural, vocal, keyboard, and conducting skills for the choral teacher/conductor. Prerequisite: MUS 330; concurrent registration in MUS 348 for music education majors; 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  **Princpls 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  **Tchg Music in the Elem School**  credit: 3 hours.
Techniques of and material suitable for teaching music in the elementary school. Prerequisite: Music education majors or consent of instructor.

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. Focus 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 by consent of instructor upon approval of a portfolio of jazz compositions.

MUS 368  **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 369  **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 400  **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 401  **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 402  **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 403  **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 404  **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 to a maximum of 6 hours. Prerequisite: MUS 106, MUS 202 and MUS 208, or consent of instructor.

MUS 405 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 406 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. Prerequisite: For undergraduates, MUS 206, MUS 301, MUS 302, 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 up to a maximum of 9 undergraduate hours or 6 graduate 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 Western 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 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 up to a maximum of 12 undergraduate hours or 9 graduate 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. Prerequisite: Senior standing in music, or consent of instructor.

MUS 430  **Applied Music Pedagogy** credit: 2 hours.
Survey of techniques, practices, and materials; presentation of group and individual instruction; an approach to teaching problems, tone production, musical styles, and interpretation for various age levels; actual teaching experience under faculty supervision. Required of applied music majors in voice and string instruments. May be repeated to a maximum of 4 hours. 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. 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 eleven through eighteen (middle school to pre-college level); teaching the adult beginner; observation of lessons and supervised student teaching experience. Prerequisite: Senior standing in music or music education, or 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 Kodály, 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 444  **Jazz Ens Rehearsal Techniques** credit: 2 hours.
Emphasizes principles of interpretation and techniques for conducting the school jazz ensemble through detailed study, with practicum experience in a laboratory setting. Graduate credit requires written project. Prerequisite: MUS 332, or consent of instructor.

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 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 UIC 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, and vocal-choral and accompanying. 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. 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 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 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 up 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 to a maximum of 16 hours. (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.) 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.) 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.) 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. 2 or 3 undergraduate hours, or 2 or 4 graduate hours (Summer session, 1 or 2 undergraduate or 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.) 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, or 2 or 4 graduate hours. (Summer session, 1 or 2 undergraduate or graduate 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, or 2 or 4 graduate hours. (Summer session, 1 or 2 undergraduate or graduate 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, or 2 or 4 graduate hours. (Summer session, 1 or 2 undergraduate or graduate 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, or 2 or 4 graduate hours. (Summer session, 1 or 2 undergraduate or graduate 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.) 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.) 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.) 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.) 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.) 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.) 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.) 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.) 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.) 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.) 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.) 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.) 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. Maximum of 8 hours; undergraduate students in open studies may repeat to a maximum of 16 hours. 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.

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. 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 graduate 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. 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. 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. May be repeated to a maximum of 8 hours. (Summer session, 2 or 4 graduate hours.) 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.) 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 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. 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 (HyperText Markup Language) 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 to a maximum of 8 hours.

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 polyharmonies, 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 minor 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. 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. 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 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 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. 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. May be repeated to a maximum of 20 hours. (Summer, 1 or 2 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.) 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.) 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.) 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.) 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.) 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.) 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.
MUS 587  Graduate Level Harp  credit: 1 TO 4 hours.
(Summer, 1 or 2 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.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the appropriate applied music faculty.

MUS 589  Graduate Level Clarinet  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the appropriate applied music faculty.

MUS 590  Graduate Level Oboe  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the appropriate applied music faculty.

MUS 591  Graduate Level Bassoon  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the appropriate applied music faculty.

MUS 592  Graduate Level Saxophone  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the appropriate applied music faculty.

MUS 593  Graduate Level Trumpet  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the appropriate applied music faculty.

MUS 594  Graduate Level Horn  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the appropriate applied music faculty.

MUS 595  Graduate Level Trombone  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the appropriate applied music faculty.

MUS 596  Graduate Level Euphonium  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the appropriate applied music faculty.

MUS 597  Graduate Level Tuba  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the appropriate applied music faculty.

MUS 598  Graduate Level Percussion  credit: 1 TO 4 hours.
(Summer, 1 or 2 hours.) Prerequisite: Graduate standing in music, or successful completion of a qualifying audition for the percussion faculty.

MUS 599  Thesis Research  credit: 0 TO 16 hours.
Research in special projects. May be repeated. Approved for S/U grading only. Prerequisite: Consent of instructor.
Neuroscience

Neuroscience, Program in
Interim Program Director: Paul Gold
Program Office: 318 B Morrill Hall
Phone: 333-4971
www.life.uiuc.edu/neuroscience/

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

NEUR 403  Memory and Amnesia  credit: 3 OR 4 hours.
Same as PSYC 403. See PSYC 403.

NEUR 404  Introduction to Neurobiology  credit: 3 hours.
Same as MCB 414. See MCB 414.

NEUR 405  Cognitive Neuroscience  credit: 3 OR 4 hours.
Same as PSYC 404. See PSYC 404.

NEUR 411  Bio Psych Lab  credit: 4 hours.
Same as PSYC 411. See PSYC 411.

NEUR 412  Neurobiology of Vision  credit: 3 hours.
Same as PSYC 412. See PSYC 412.

NEUR 413  Psychopharmacology  credit: 3 OR 4 hours.
Same as PSYC 413. See PSYC 413.

NEUR 414  Brain, Learning, and Memory  credit: 3 OR 4 hours.
Same as PSYC 414. See PSYC 414.

NEUR 415  Human Neuropsych  credit: 2 TO 4 hours.
Same as PSYC 415. See PSYC 415.

NEUR 419  Brain, Behavior & Info Process  credit: 3 hours.
Same as MCB 419, BIOE 419, and BIOP 419. See MCB 419.

NEUR 421  Principles of Psychophysiology  credit: 3 OR 4 hours.
Same as PSYC 421. See PSYC 421.

NEUR 422  Cellular Molec Neurobiology  credit: 3 hours.
Same as MCB 412. See MCB 412.

NEUR 425  Struct Funct of Nervous System  credit: 4 hours.
Same as MCB 415. See MCB 415.

NEUR 426  Integrative Neurophysiology  credit: 3 hours.
Same as MCB 416. See MCB 416.

NEUR 427  Modeling Neural Systems  credit: 4 hours.
Same as BIOE 417, BIOP 417, and MCB 417. See MCB 417.

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

NEUR 444  Hormones and Behavior  credit: 3 OR 4 hours.
Course Information: Same as IB 430, and PSYC 444. See PSYC 444.

NEUR 451  Neurobio of Aging  credit: 3 OR 4 hours.
Same as PSYC 451 and NEUR 451. See PSYC 451.

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 up to 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 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 8 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 to a maximum of 16 hours. 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. May be repeated in the same or subsequent terms to a maximum of 16 hours. Approved for S/U grading only. Prerequisite: Consent of instructor.
Nuclear, Plasma, and Radiological Engineering

Nuclear, Plasma, and Radiological Engineering
Head of Department: James F. Stubbins
Department Office: 214 Nuclear Engineering Laboratory, 103 South Goodwin, 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.

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; one of PHYS 101, PHYS 211, CHEM 104, CHEM 204, or ME 300.

NPRE 241  Intro to Radiation Protection  credit: 2 hours.
Introductory course in the elements of radiation protection and health physics, emphasizing practical applications. Same as ENVS 241. Seniors in nuclear engineering may not receive credit for NPRE 241. Prerequisite: MATH 220 or equivalent; a biology, chemistry, or physics course; or consent of instructor.

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: Senior standing and consent of instructor.

NPRE 398  Special Topics  credit: 1 TO 4 hours.
Considers selected areas which are of current interest to undergraduates in nuclear engineering but which are not adequately covered in other formal courses. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

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; and other applications such as propulsion and research reactors. Students who plan to take 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. NPRE students will not receive credit for this course toward a graduate degree. Prerequisite: Consent of instructor.

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; and comparison
between fossil fuel systems, fission systems, and controlled thermonuclear fusion systems. 3 undergraduate hours. 4 graduate hours. Prerequisite: Junior standing; NPRE 402/ME 405 or NPRE 247; or consent of instructor.

NPRE 421  **Plasma and Fusion Science**  credit: 3 hours.
Course provides an 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. Prerequisite: Junior standing in the College of Engineering or consent of instructor.

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; or consent of instructor.

NPRE 429  **Plasma Engineering**  credit: 3 hours.
Course covers the 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 or consent of instructor.

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. Prerequisite: Junior standing in engineering or the physical sciences.

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 or equivalent.

NPRE 435  **Prin Imaging w Ionizing Rad**  credit: 3 hours.
Techniques used to generate ionizing radiation useful in the imaging of solids and medical imaging will be studied. The theory and applications of biological and medical imaging modalities that use ionizing radiation will be covered. This includes x-ray diagnostic methods such as plain film, and digital, computer axial tomography (CAT) and radionuclide imaging techniques such as positron emission tomography (PET), single photon emission computed tomography (SPECT) and gamma cameras. It will also cover the theory and applications of materials imaging. These include x-ray, electron, and neutron diffraction, in addition to small angle neutron and x-ray scattering (SANS, and SAXS). Prerequisite: NPRE 446 or consent of instructor.

NPRE 441  **Prin of 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 or consent of instructor.

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; and disposal, both temporary and permanent. Prerequisite: NPRE 446 or equivalent.

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, NPRE 446, or equivalent.

NPRE 446  **Prin Rad Interact 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: PHYS 214 and MATH 385; credit or concurrent registration in MATH 380; or equivalents.

NPRE 447  **Prin Rad Interact 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 or consent of instructor.

NPRE 448  **Nuclear Sys Eng and 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: NPRE 455, ME 300, MATH 380, and MATH 385.

NPRE 451  **Nucl Plasma Rad Eng Lab**  credit: 3 hours.
Radiation detection and instrumentation; radiation dosimetry and shielding; basic measurements in nuclear engineering; engineering applications; and micro computer data acquisition and experimental control. Prerequisite: NPRE 446 or equivalent.

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, and control rod calibration experiments, and measurements in subcritical, critical and supercritical systems. Prerequisite: NPRE 451.

NPRE 455  **Neutron Diffusion & Transport**  credit: 3 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 or equivalent or consent of instructor.

NPRE 457  **Safety Anlys Nucl Reactor Sys**  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; and methods of systems safety analysis. Same as CSE 462. 3 undergraduate hours. 3 to 4 graduate hours. Prerequisite: NPRE 402/ME 405 or NPRE 247 or equivalent; or consent of instructor.

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; and class design projects applying these basic principles. Prerequisite: NPRE 448.

NPRE 480  **Topics in Energy Security**  credit: 3 hours.
Examines the interplay between security and supplies of energy and survival essentials such as food and water. Topics covered can include: coal, oil, uranium, and natural gas and the evolution of importance of various fuels in the Franco-Prussian, First and Second World Wars, in subsequent conflicts in Southwest and Central Asia and in Africa, and in military planning for possible future conflicts. Some offerings will focus on regional issues such as evolution of the concept of energy and food self-sufficiency in India, Bangladesh, and China; the impact of drought and international drainage basin accords; building and securing fossil fuel pipelines; oil in the South China Sea; and the interaction between nuclear power and military security in Pakistan, India, China, Japan, and Korea. Same as GLBL 480. May be repeated in separate terms to a maximum of 6 hours. Prerequisite: Junior standing and completion of the Composition I and Quantitative Reasoning I requirements; or graduate standing.

NPRE 481  **Writ Sem on Tech & Security**  credit: 3 hours.
This course 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; 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. Prerequisite: Credit is not give for NPRE 481 and NPRE 482, nor for NPRE 481 and NPRE 483.

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. Prerequisite: Junior or graduate standing.

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. Prerequisite: Junior standing and completion of the Composition I requirement, or graduate standing.

NPRE 498  Special Topics  credit: 1 TO 4 hours.
Considered selected areas of current interest in nuclear engineering which are not adequately covered in other formal courses. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

NPRE 501  Fund of Nuclear Engineering  credit: 4 hours.
Lecture and problem course to provide background for further work in nuclear engineering; problems in materials, heat transfer, and fluid flow; and special emphasis on basic ideas and the mathematical similarity of problems in heat transfer, fluid flow, and neutron diffusion. Prerequisite: NPRE 247 or equivalent; credit or concurrent registration in NPRE 446; or consent of instructor.

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; and liquid metal coolant systems. Prerequisite: NPRE 501 or consent of instructor.

NPRE 521  Interaction 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 or equivalent.

NPRE 522  Controlled Fusion Systems, I  credit: 4 hours.
Development of plasma models for fusion analysis; treatment of plasma heating and confinement with applications to current experiments; energy balances; and energy extraction. Same as ECE 522. Prerequisite: NPRE 421 or consent of instructor.

NPRE 523  Controlled Fusion Systems, II  credit: 4 hours.
Development of plasma models for high-beta pulsed-fusion systems and for pellet fusion systems; heating and confinement mechanisms; energy balances and energy extraction; and applications to current experiments. Prerequisite: NPRE 522 or consent of instructor.

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; and 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 or equivalent or consent of instructor.

NPRE 541  Nuclear Radiation Shielding  credit: 4 hours.
Basic and advanced concepts in radiation sources, gamma ray and neutron shielding, geometry factors in shielding, computational techniques (such as Monte Carlo and discrete ordinates), special topics (such as shield heating, duct streaming, and albedo theory), and practical aspects. Prerequisite: NPRE 441 or consent of instructor.

NPRE 554  Nucl Eng Lab Investigations  credit: 1 TO 8 hours.
Individual experimental investigation in nuclear engineering. 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; and advanced topics. Same as PHYS 520. Prerequisite: NPRE 455; graduate standing in physics; or consent of instructor.

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; and advanced topics. Same as PHYS 521. Prerequisite: NPRE 555; NPRE 521 or graduate standing in physics; or consent of instructor.

NPRE 558  Adv Nuclear Engineering Design  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: Five 400- and/or 500-level nuclear engineering courses including NPRE 247, NPRE 448, and NPRE 501, or equivalents; or consent of instructor.

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; and advanced topics. Prerequisite: NPRE 555 or consent of instructor.

NPRE 596  Sem in Nuclear Sci and 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. May be repeated. Approved for both letter and S/U grading.

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: At least 12 hours of graduate work; consent of instructor.

NPRE 598  Special Topics  credit: 2 TO 4 hours.
Considers selected areas of current interest in research which are not adequately covered in other courses. Prerequisite: As specified for each topic offering; see Schedule or departmental course information.

NPRE 599  Thesis Research  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
Natural Resources and Environmental Sciences

NRES 100  **Fundamentals of Env Sci**  credit: 3 hours.
Introduction to environmental sciences and issues with an emphasis on Illinois. 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.

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 Comparv 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 Compartv Cult

NRES 244  **Sci-Values 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: 1 hours.
Eight week lab and field course involving description, interpretation, and classification of soil profiles. Overnight field trip required. Students pay costs that reflect actual expenses. May be repeated to a maximum of 3 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. Same as IB 280.

NRES 285  **Natural Resource Field Lab**  credit: 2 hours.
Lecture and field course will examine use and reuse of natural resources including drinking water, sewage treatment, solid waste (landfills and recycling), energy generation, and industrial production. Students will learn about the usage and possible conservation and reuse of natural resources through weekly site visits to local facilities. Course will meet the final eight weeks of the Spring term. Field trips required; fees required. May be repeated to a maximum of 4 hours. Prerequisite: NRES 104.

NRES 287  **Nature Society and Democracy**  credit: 3 hours.
Students develop critical and analytic thinking about socially-induced environmental destruction and possible alternatives that could develop contemporary society into an ecologically responsible society. Same as PS 273. Prerequisite: SOC 100 or ECON 101 or PS 100 or NRES 104.
This course satisfies the General Education Criteria for a:
UIUC Social Sciences
UIUC: Western Compartv Cult

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 329  Urban Forestry  credit: 3 hours.
Management of wooded areas in urban and community settings, including how trees improve the urban environment and how they react to urban stresses. Students learn to conduct urban tree inventories, write municipal tree ordinances, and to place monetary value on individual privately-owned and civically-controlled trees. Includes field trips and laboratory. Fee required. Prerequisite: NRES 302 or HORT 301.

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 332  Wood Utilization and Anatomy  credit: 3 hours.
Principles and methods of harvesting trees; conversion processes of lumber, wood-based, and non-wood plant fiber materials; recycling wood for energy; structure of wood and its relationship to the properties and uses of wood and plant fibers. Offered in alternate years.

NRES 334  Wood Composites  credit: 3 hours.
Theories of adhesion and wood bonding; the effects of physical properties and processing parameters on the performance of wood and non-wood plant fiber composites. Offered in alternate years. Prerequisite: CHEM 102.

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 366  Environmental Botany  credit: 3 hours.
Same as IB 366. See IB 366.

NRES 380  Environmental Textiles  credit: 3 hours.
Study of textile systems that offer protection from chemical, biological, thermal, and mechanical hazards; geotextiles that prevent soil erosion, reinforce dikes and highways, and control seepage of polluted water; and interior textiles such as carpeting, upholstery, window and wall treatments that enhance the aesthetic and functional aspects of interior environments. Successful completion of high school chemistry is recommended.

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. 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: NRES 351 or CEE 330 or CHEM 232 and MATH 220 or MATH 234.

NRES 406  Fluvial Geomorphology  credit: 4 hours.
Same as GEOG 406, and GEOL 406. See GEOG 406.

This course includes the application of principles of population biology to the analysis, management, and conservation of wildlife populations, models of population growth, spatio-temporal variation in abundances, estimation of demographic parameters and methods of decision-making. One semester of calculus or statistics is recommended. Prerequisite: NRES 348.

NRES 409  Fishery Ecol and Conservation  credit: 4 hours.
Ecological and conservation concepts are applied to fisheries management practices. Will discuss current literature related to the interface between basic and applied aspects of fish populations, focusing on life history, conservation biology and genetics, growth and recruitment, competition, predation, trophic and community ecology, ecosystem management, and human dimensions. Prerequisite: NRES 348.

NRES 410  Applied Natural Resource Econ  credit: 4 hours.
Economic principles are used to model the efficient management of natural resource stocks over time, including fisheries, forests, soil, water resources, and wildlife. The development of applied economic skills to complement the modeling of biological and physical systems is emphasized. Prerequisite: ACE 100 or ECON 102.

**NRES 416  Forest Biology and Protection  credit: 3 hours.**
Relationship between environmental factors and the structure and function of forests, including carbon, water, and nutrient cycles. Integrates a basic understanding of forest ecology into forest resource management. Two Saturday field trips required. Prerequisite: NRES 211 or consent of instructor.

**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: MATH 220 or MATH 234 and completion of the statistics requirement.

**NRES 422  Earth Systems Modeling  credit: 4 hours.**
Courses Information: Same as ATMS 421, GEOG 421, and GEOL 422. See ATMS 421.

**NRES 425  Forest Resource Management  credit: 4 hours.**
Integration and synthesis of forestry concepts and quantitative decision-making techniques applied to managing forests to meet the objectives of both public and private forest land owners. Field trips required. Prerequisite: Completion of or concurrent enrollment in NRES 410 and NRES 421.

**NRES 426  Tree Physiology  credit: 3 hours.**
Study of tree functions as they relate to tree structure, environment, and cultural practices; emphasizes photosynthesis, carbohydrate metabolism, nitrogen metabolism, water relations, and symbiotic associations of trees. Offered in alternate years. Prerequisite: IB 103 and CHEM 104.

**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: MATH 220 or MATH 234, and 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 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 432  Mechanics of Wood Materials  credit: 3 hours.**
Examines the static strength properties and structural designs of wood and wood-based materials. Students conduct the standard strength property tests on wood and wood composites, as well as non-wood fibrous material. Topics include the designing of wood beams and columns. Factors related to the derivation of allowable stresses of wood materials are also discussed. Prerequisite: PHYS 101 or PHYS 140.

**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 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  **Ecological Numeracy**  credit: 3 hours.
Same as GEOG 446, and UP 446. See UP 446.

NRES 449  **Science Technology and Policy**  credit: 4 hours.
Explores environmental policy processes highlighting the scientific, technological, and institutional factors that influence the formulation, application, evaluation, and changes of environmental policy. Introduces a set of key environmental and sociological problems for class analysis and explores possible outcomes based on the perspectives of social and natural scientists. Same as SOC 458. Prerequisite: NRES 287.

NRES 451  **Environmental Organic Chem**  credit: 3 hours.
Transport and transformations of organic compounds in the environment with emphasis on the mechanisms, kinetics, and products of reactions that occur under environmental conditions typical of the atmosphere, surface and subsurface waters, and solid phases of the earth. Topics include hydrolysis, redox reactions, disinfection, and photochemistry. Same as ENVS 451. Prerequisite: CHEM 232 or CHEM 236.

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: NRES 454 or GEOG 479.

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 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 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 480  Fiber and Textile Performance  credit: 4 hours.
Examines chemical composition, polymer structure, and engineering potential of textile fibers; effects of chemical finishes and recycling
procedures on performance characteristics of consumer textile products; and introduces physical and chemical metrology techniques
useful for quality control and research purposes. Same as ACE 480. Offered in alternate years. Prerequisite: NRES 283 or CHEM 104.

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 483  Soil Mineralogy  credit: 3 hours.
Description and identification of common soil minerals; weathering of minerals; relationships of soil mineralogy to soil development;
plant and animal ecology as it relates to soils; agricultural and technological uses of soils. Prerequisite: NRES 201 and GEOL 101 or
GEOL 107.

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 140, MATH 220 or MATH 234, and 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 and MATH 220 or 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. May be repeated. No more than 8 hours may be offered 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 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: MATH 220 or MATH 234.

NRES 516 Ecosystem Biogeochemistry credit: 4 hours.
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.

NRES 535 Advanced Forest Biometry credit: 2 hours.
Examines and discusses developments and techniques used in forest sampling, process based growth models and ecological models. Offered in alternate years. Upper division courses in statistics and modeling are recommended.

NRES 540 Public Involvement in Res Mgmt credit: 3 TO 4 hours.
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.

NRES 572 Chemistry of Soil Fertility credit: 4 hours.
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.

NRES 573 Pedogenesis and Soil Taxonomy credit: 4 hours.
Historical review of soil genesis and classification; morphology and genesis of diagnostic soil horizons and features; soil genesis processes and reactions; classification of soils; and characteristics, geography, and production potentials of major soil groups of the world. Offered in alternate years. Prerequisite: NRES 471 or NRES 474, or GEOG 404.

NRES 579 Physics of Flow in Soils credit: 4 hours.
Derivation and application of the fundamental physical principles and laws that govern the behavior of soils, with emphasis on transport phenomena and physical characteristics of soils. Offered in alternate years. Prerequisite: MATH 441 and NRES 489.

NRES 580  **Solute Transport in Soils**  credit: 4 hours.
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: MATH 441 and NRES 489.

NRES 582  **Textile Finishing**  credit: 4 hours.
Examines developments in textile finishing technology to enhance the aesthetic and functional qualities of fibers and fabrics. Same as ACE 582. Prerequisite: NRES 480 and CHEM 232 and consent of instructor.

NRES 585  **High Performance Fibers**  credit: 4 hours.
Investigation of textile fibers and fibrous systems for non-classical applications, such as medicine and hygiene; protective apparel systems for heat and toxic chemicals; fiber reinforced components of building structures, transportation vehicles, sports equipment; and geotextiles. Same as ACE 585. Offered in alternate years. Prerequisite: NRES 480 and consent of instructor.

NRES 586  **Soil Organic Matter**  credit: 4 hours.
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.

NRES 590  **Professionalism and Ethics**  credit: 2 hours.
Same as CPSC 590. See CPSC 590.

NRES 594  **NRES Professional Orientation**  credit: 1 hours.
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.

NRES 599  **Thesis Research**  credit: 0 TO 12 hours.
Research conducted in various phases of horticulture, natural resources, and environmental sciences leading to a thesis in natural resources and environmental sciences. May be repeated. Approved for S/U grading only.
Naval Science

Naval Science
Head of Department: David L. Allen
Captain, USN, Department Office: 236 Armory Building, 505 East Armory, Champaign
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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. May be repeated. Approved for both letter and S/U grading.

NS 101 Introduction to Naval Science credit: 2 hours.
Nautical 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.
NUTR 420  **Nutritional Aspects of Disease**  credit: 3 hours.
Same as FSHN 420. See FSHN 420.

NUTR 426  **Biochemical Nutrition I**  credit: 4 hours.
Same as FSHN 426. See FSHN 426.

NUTR 427  **Biochemical Nutrition II**  credit: 2 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 aspects of nutrition with emphasis on the function, regulation, and metabolism of macronutrients in higher animals, including humans. Same as ANSC 521, and FSHN 511. Prerequisite: MCB 350 or MCB 452 and an upper division course in nutrition.

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 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.
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 510  Comparative Immunobiology  credit: 4 hours.
Same as ANSC 450, and MCB 442. See ANSC 450.

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. May be repeated to a maximum of 4 hours. 1 graduate or professional hour. Approved for both letter and S/U grading. 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 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 521  **Ecological Parasitology** credit: 3 hours.

Same as IB 480. See IB 480.

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, and IB 592. 4 graduate or professional hours. Students may not receive credit for both PATH 591 and CPSC 440 or IB 488 or EDSY 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 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 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 Veterinarian or residency status; 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. 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. 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. May be repeated to a maximum of 6 hours. Prerequisite: Credit 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.
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. 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. 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; geographic 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.

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. Same as IB 591. 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.
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 VB 596. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: Consent of instructor.

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 VP 598 and 599 Prerequisite: Must be Graduate Veterinarian.

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

PATH 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 areas; functions, obligations, and organization of the profession. Approved for both letter and S/U grading. Prerequisite: Second-year standing in veterinary curriculum.

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  Special Pathology  credit: 4 hours.
Disease processes including specific diseases, affecting organs and anatomic systems. 4 graduate or professional hours. Prerequisite: Second-year standing in veterinary curriculum or consent of instructor.
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. 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, or 1 or 2 graduate hours. Approved for S/U grading only. Prerequisite: One semester of epidemiology.

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 gradding. May be repeated to a maximum of 6 hours if topics vary. Prerequisite: Registration in the veterinary curriculum or consent of instructor.
PBIO 599  **Thesis Research**  credit: 0 TO 16 hours.

Individual work under supervision of members of the staff in their respective fields. May be repeated. Approved for S/U grading only.
Persian

Linguistics
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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 OR 5 hours.
General review of the essentials of grammar, selected reading of materials emphasizing Iranian life and culture, compositions, and practice in speech. 5 undergraduate hours. 4 graduate hours. Prerequisite: PERS 202.

PERS 404  Intermediate Persian II  credit: 4 OR 5 hours.
General review of the essentials of grammar, selected reading of materials emphasizing Iranian life and culture, compositions, and practice in speech. 5 undergraduate hours. 4 graduate hours. 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.

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

**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.

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

**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.

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

**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.

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

**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.

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

**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 up to 1 time(s). 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 207  Early Modern Philosophy I  credit: 2 hours.
Bacon, Hobbes, Locke, Berkeley, and Hume. PHIL 207 and PHIL 208 taken concurrently in the summer session are the equivalent of PHIL 206. Offered in the Summer session only.
PHIL 208  **Early Modern Philosophy II**  credit: 2 hours.
Descartes, Spinoza, Leibniz, and Kant. PHIL 207 and PHIL 208 taken concurrently in the summer session are the equivalent of PHIL 206. Offered in the Summer session only.

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:
UIUC: Hist&Philosoph Perspect

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 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 present 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 up to 1 time(s) 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 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: One course in 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. Prerequisite: PHIL 325, PHIL 411, PHIL 441, PHIL 443, or PHIL 447; or consent of instructor.

**PHIL 447 Post-Structuralist Philosophy** credit: 3 OR 4 hours.
Intensive study of a selection of the major writings of recent French philosophers, such as Foucault and Derrida. 3 undergraduate hours. 3 or 4 graduate hours. Prerequisite: PHIL 325, PHIL 441, or PHIL 443, 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 475 Philosophy of Social Science** credit: 3 OR 4 hours.
Survey of philosophical problems encountered in the disciplines concerned with the individual and society, with particular emphasis on the extent to which questions and subject matter in these fields are amenable to scientific treatment. Same as ANTH 429, and SOC 455. 3 undergraduate hours. 4 graduate hours.

**PHIL 477 Philosophy of Psychology** credit: 3 OR 4 hours.
Philosophical examination of the aims, methods, and structure of psychology, with special attention to such issues as the nature of explanations of behavior, the adequacy of behaviorism as a philosophy of psychology, and the place of the mind in psychological investigation. Same as PSYC 477. 3 undergraduate hours. 4 graduate hours. Prerequisite: 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: 4 hours.
Study of selected major philosophers, movements, problems, or topics in the history of philosophy; see Class Schedule for current topics. May be repeated. Students may register in more than one section per term.

**PHIL 511 Seminar Ethical Theory** credit: 4 hours.
Intensive study of problems in ethical theory. May be repeated if topics vary. Students may register in more than one section per term.

**PHIL 512 Seminar Social Philosophy** credit: 4 hours.
Seminar designed to study special problems in social philosophy. See Schedule for current topics. May be repeated.

**PHIL 513 Seminar Philosophy of Logic** credit: 4 hours.
Selected topics in contemporary logical theory. May be repeated. Prerequisite: A course in logic or consent of instructor.

**PHIL 514 Seminar in Cognitive Science** credit: 2 OR 4 hours.
Same as PSYC 514, ANTH 514, CS 549, EPSY 551, and LING 570. See PSYC 514.

PHIL 517  Seminar Philosophy of Science  credit: 4 hours.
Various problems arising from specific studies in philosophy pertaining to science and vice versa. To be offered with varying topics. May be repeated.

PHIL 520  Seminar Semantics  credit: 4 hours.
Intensive study of important contemporary contributions in the fields of semantics, analytic philosophy, and the philosophy of language. Same as COMM 520. May be repeated. Prerequisite: Graduate standing in philosophy or equivalent.

PHIL 521  Seminar Contemporary Problems  credit: 4 hours.
Intensive study of selected problems or topics in contemporary philosophy. May be repeated. Students may register in more than one section per term.

PHIL 523  Seminar Theory of Knowledge  credit: 4 hours.
Selected topics and writings of major importance in the contemporary philosophy of knowledge. May be repeated.

PHIL 525  Seminar Philosophy of Mind  credit: 4 hours.
Selected topics from major writings in the philosophy of mind. May be repeated.

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.
May be repeated. Approved for S/U grading only.
Physics

Physics
Head of Department: Jeremiah D. Sullivan
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Phone: 333-3761
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PHYS 100  Thinking About Physics  credit: 1 hours.
Course is designed for students who want to prepare for PHYS 211 by improving their conceptual and problem solving skills. Students will learn 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. Students may register for PHYS 100 and PHYS 211 concurrently. Prerequisite: Credit or concurrent registration in MATH 220, or consent of the instructor.

PHYS 101  College Physics, Mech & Heat  credit: 5 hours.
Noncalculus-based course for students in the life sciences, preprofessional health programs, agriculture, and veterinary medicine. Topics include Newton's Laws, work and energy, rotational motion, fluids, thermodynamics, and waves. Prerequisite: Trigonometry.

PHYS 102  College Physics, E&M & Modern  credit: 5 hours.
Noncalculus-based course for students in life sciences, preprofessional health programs, agriculture, and veterinary medicine. Topics include electric forces and fields, electric potential, electric circuits, magnetic forces and fields, geometrical optics, relativity, and modern physics. Prerequisite: PHYS 101.

PHYS 110  Physics Careers  credit: 0 hours.
This course is designed to give students 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. Students will hear first-hand from a variety of presenters 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.
Course is 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.

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 students in the College of Engineering.

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 lecture course attempting 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.

This course satisfies the General Education Criteria for a:
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  **Univ Physics, Mechanics**  credit: 4 hours.
Lectures with demonstrations, discussions, and laboratory. For students in engineering, mathematics, physics, and chemistry. Topics include Newton's Laws, work and energy, static properties and fluids, oscillations, transverse waves, systems of particles, and rotations. Credit is not given for both PHYS 211 and PHYS 101. Prerequisite: MATH 220; credit or concurrent registration in MATH 230.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

PHYS 212  **Univ Physics, Elec & Mag**  credit: 4 hours.
Lectures with demonstrations, discussions, and laboratory. For students in engineering, mathematics, physics, and chemistry. Topics include 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. Credit is not given for both PHYS 212 and PHYS 102. Prerequisite: PHYS 211; credit or concurrent registration in MATH 242.

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.
Lectures with demonstrations, discussions, and laboratory. For students in engineering, mathematics, physics and chemistry. Topic is 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. Credit is not given for both PHYS 213 and PHYS 101. Prerequisite: PHYS 211; credit or concurrent registration in MATH 242.

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

PHYS 214  **Univ Physics, Quantum Phys**  credit: 2 hours.
Lectures with demonstrations, discussions, and laboratory. For students in engineering, mathematics, physics, and chemistry. Topics include interference and diffraction, photons and matter waves, the Bohr atom, uncertainty principle, and wave mechanics. Credit is not given for both PHYS 214 and PHYS 102. Prerequisite: PHYS 212 (includes MATH 242 and PHYS 211).

This course satisfies the General Education Criteria for a:
UIUC: Physical Sciences
UIUC: Quant Reasoning II

PHYS 219  **Introductory Relativity**  credit: 2 hours.
Examines the consequences of Einstein's postulates for space and time; relativistic momentum and energy: E=mc^2; the equivalence principle, gravity, and the spacetime viewpoint of general relativity; the relativistic unity of electric and magnetic fields. Credit not given for both PHYS 219 and 325. (Offered in Fall term only.) Prerequisite: Credit or concurrent registration in PHYS 102 or 212.

PHYS 280  **Nuclear Weapons & Arms Control**  credit: 3 hours.
Beginner's course on the physics of nuclear weapons, nuclear weapon effects, delivery systems, and defenses against nuclear attack; nontechnical, but about technology. Designed to assist students in making informed judgments about nuclear armaments and arms control; includes presentation of current issues. 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. Vector analysis will be developed as needed. Topics include 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. Credit not given for both PHYS 325 and PHYS 219. Prerequisite: Credit or concurrent registration in PHYS 212 and in MATH 385 or equivalent; or consent of instructor.
PHYS 326  **Mechanics and Relativity II**  credit: 3 hours.
Continuation of PHYS 325. Topics include 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 380; or consent of instructor.

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 students enrolled in the physics graduate program. Prerequisite: PHYS 325 or consent of instructor.

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: PHYS 102 (includes PHYS 101) or PHYS 214 (includes PHYS 211 and PHYS 212); MATH 385 or equivalent; or consent of instructor.

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; or consent of instructor.

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; or consent of instructor.

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 or consent of instructor.

PHYS 419  **Space, Time, and Matter-ACP**  credit: 3 OR 4 hours.
Philosophical examination of some fundamental concepts and theories of the physical world, such as time, matter, causation, space, and geometry; interpretation of quantum theory. Graduate students write an additional paper. Same as PHIL 419. 3 undergraduate hours. 4 graduate hours. Credit is not given for both PHYS 419 and PHYS 420. Prerequisite: Junior standing; one physical science course; one of PHYS 214, PHIL 101, PHIL 270, or PHIL 317; or consent of instructor.

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. This course is identical to PHYS 419, with the exception that no final term paper is required and no Advanced Composition credit is given. Same as PHIL 420. Approved for both letter and S/U grading. Credit is not given for both PHYS 420 and PHYS 419. Prerequisite: Junior standing; one physical science course; one of PHYS 214, PHIL 101, PHIL 270, or PHIL 317; or consent of instructor.

PHYS 427  **Thermo & Statistical Physics**  credit: 4 hours.
Course in statistical and thermal physics designed primarily for advanced undergraduates; topics include 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. 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 or consent of instructor.

PHYS 429  **Atmospheric Dynamics**  credit: 4 hours.
Same as ATMS 402. See ATMS 402.
PHYS 435  Electromagnetic Fields I  credit: 3 hours.
Concerns 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: PHYS 325; MATH 385 or
equivalent; credit or concurrent registration in MATH 380; or consent of instructor.

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; or consent of instructor.

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. Students may not receive credit for both PHYS 460 and
MSE 304. Prerequisite: Junior standing in science or engineering, or equivalent.

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.
Lecture and problem course surveying subatomic physics; includes 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. Offered Spring term only. Prerequisite: PHYS 485 or PHYS 486 or consent
of instructor.

PHYS 479  Plasma and Fusion Science  credit: 3 hours.
Same as ECE 421 and NPPE 421. See NPPE 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; topics covered
include 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. Lectures and problems. Prerequisite: CHEM 104; PHYS 214;
MATH 385 or equivalent.

PHYS 486  Quantum Physics I  credit: 4 hours.
Studies atomic phenomena integrated with an introduction to quantum theory; discussion of topics includes 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: PHYS 214; MATH 385 or equivalent;
credit or concurrent registration in MATH 415; or consent of instructor.

PHYS 487  Quantum Physics II  credit: 4 hours.
Continuation of PHYS 486. Topics treated include 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.
Introduction to Physics Research is designed for second-semester juniors interested in pursuing physics research careers and
advanced physics training. The course introduces students to current research topics through extensive reading, writing, and oral-
presentation activities. Students generally become involved in a research group at this time, leading to a full-time summer research
experience. 3 undergraduate hours. Prerequisite: Physics major junior standing or consent of instructor.

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. Prerequisite: Upperclassman; consent of adviser and
staff member who supervises the work.

PHYS 498  Special Topics in Physics  credit: 1 TO 4 hours.
Lecture course on topics of current interest in physics. For advanced undergraduates or graduates. Prerequisites: Determined for each
offering; see Schedule.

PHYS 499  Senior Thesis  credit: 3 hours.
The Senior Thesis course guides students in the writing of a senior thesis on their independent research (usually performed during the summer prior to the fall semester). 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 or consent of instructor; 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 or equivalent or consent of instructor.

PHYS 501 Continuum Mechanics credit: 2 hours.
Basic information on 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 506 and PHYS 507, or equivalents.

PHYS 502 Complex Variables in Physics credit: 2 hours.
Review of complex variable theory, with emphasis on calculations useful to physicists; integration, conformal mapping, Laplace and Fourier transforms, and additional topics of use in theoretical physics. Prerequisite: MATH 380 and MATH 385, or equivalents. Recommended: some previous exposure to complex variables.

PHYS 503 Lie Groups and Applications credit: 2 hours.
Introduces Lie groups with emphasis on concepts and applications to physics problems; includes finite groups, three dimensional rotation groups, classification and representation of Lie groups, integrations, and applications to particle, nuclear, and condensed matter physics. Prerequisite: PHYS 580 or consent of instructor.

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; PHYS 486 or equivalent; or consent of instructor.

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 506, and PHYS 507; or equivalents.

PHYS 506 Mathematical Physics I credit: 2 hours.
Use of special functions in solving homogeneous partial differential equations of physics; emphasis on applications to topics such as electrostatics, wave guides and resonant cavities, vibrations of membranes, heat flow, and potential flow in fluids. Prerequisite: MATH 380 and MATH 385, or equivalents. This course may be taken concurrently with PHYS 500 or PHYS 502.

PHYS 507 Mathematical Physics II credit: 2 hours.
Solution of inhomogeneous differential equations with particular emphasis on problems in electromagnetism; additional topics such as perturbation theory, variational methods, and integral equations; emphasis on application of the techniques to nonquantum physics problems. This course may be taken concurrently with PHYS 500 or PHYS 502. Prerequisite: PHYS 506 or equivalent.

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: MATH 380 or MATH 385 or equivalent; PHYS 326 or equivalent; or consent of instructor.

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); or consent of instructor.

**PHYS 516  General Relativity II**  credit: 4 hours.
Continuation of PHYS 515 with emphasis on applications to astrophysics and cosmology. Topics include: relativistic stars, gravitational collapse, black holes, gravitational waves, numerical relativity, and cosmology. Same as ASTR 516. Offered in alternate Spring terms. Prerequisite: PHYS 515 or consent of instructor.

**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 541  Physics of Compact Objects**  credit: 4 hours.
A rigorous survey of the physical properties of black holes, white dwarfs, and neutron stars. The formation of compact objects. Equilibrium configurations, equations of state, stability criteria, and mass limits: the influence of rotation and magnetic fields. Pulsar phenomena. Black hole spacetimes. Hawking radiation. Mass flow in binary systems; spherical and disk accretion; high-temperature radiation processes; pulsar spin-up. Compact x-ray sources and x-ray bursts. Supermassive black holes in star clusters and dense galactic nuclei. Gravitational and neutrino radiation from supernova collapse and binary coalescence. Same as ASTR 541. The course does not assume any previous knowledge of astronomy or general relativity. (Offered in alternate years.) Prerequisite: PHYS 436 or equivalent; or consent of instructor.

**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 or equivalent; PHYS 485 or PHYS 487 or equivalent; or consent of instructor.

**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 or consent of instructor; 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; and selected additional topics. Prerequisite: PHYS 504 or consent of instructor.

**PHYS 564  Surface Physics**  credit: 4 hours.
Same as MSE 582. See MSE 582.

**PHYS 565  Theory 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.
An 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; or consent of instructor.

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. Prerequisite: Consent of instructor.

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; credit or concurrent registration in PHYS 582 strongly recommended. In exceptional circumstances, PHYS 570 may be taken concurrently with departmental approval.

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 or consent of instructor.

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 or equivalent; or consent of instructor.

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 or consent of instructor.

PHYS 582  **General Field Theory**  credit: 4 hours.
Covers 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 or consent of instructor.

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 or consent of instructor.

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. Prerequisite: Consent of instructor.

PHYS 598  **Special Topics in Physics**  credit: 1 TO 4 hours.
Lecture course in topics of current interest. Several subjects are announced in each Class Schedule. Among them are semiconductor physics, magnetic resonance, surface physics, lattice dynamics, band theory of solids, crystal imperfections, nuclear structure, field theory, elementary particle physics, advanced statistical mechanics, plasma theory, astrophysics, atmospheric physics, group theory and applications. Prerequisite: Determined for each offering; see Class Schedule.

PHYS 599  **Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
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 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 508 Plant Disease Epidemiology**  credit: 4 hours.

Fundamental concepts and principles of plant disease epidemics; includes pathometry, crop loss assessment, pathogen and host dynamics, quantification of pathosystem components, pathosystem management, disease forecasting, and decision analysis. Offered in alternate years. Prerequisite: PLPA 204 or equivalent and CPSC 440 or equivalent.

**PLPA 509 Mol Bio of Microbe-Plant Int**  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

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 conte 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: Ronald Sousa
Department Office: 4080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-3390
www.sip.uiuc.edu

PORT 101 Elementary Portuguese I  credit: 4 hours.
For students who have no credit in Portuguese.

PORT 102 Elementary Portuguese II  credit: 4 hours.
Continuation of PORT 101. Prerequisite: PORT 101.

PORT 103 Intermediate Portuguese I  credit: 4 hours.
Rapid reading, review of grammar, composition, and conversation. Prerequisite: PORT 102 or two years of high school Portuguese.

PORT 104 Intermediate Portuguese II  credit: 4 hours.
Continuation of PORT 103. Prerequisite: PORT 103 or three years of high school Portuguese.

PORT 191 Freshman Honors Tutorial  credit: 1 TO 3 hours.
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.

PORT 199 Undergraduate Open Seminar  credit: 1 TO 5 hours.
May be repeated. Approved for both letter and S/U grading.

PORT 200 Advanced Grammar  credit: 3 hours.
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 or consent of instructor.

PORT 210 Composition & Conversation I  credit: 3 hours.
Prerequisite: PORT 104 or consent of instructor.

PORT 212 Composition & Conversation II  credit: 3 hours.
Prerequisite: PORT 210 or consent of instructor.

PORT 320 Readings in Portuguese  credit: 3 hours.
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.

PORT 334 Brazilian Women's Lit Trans  credit: 3 hours.
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.

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

PORT 400 Port Speakers Rom Lang  credit: 3 hours.
Accelerated language learning course designed for speakers of Romance languages. Focus will be primarily on those linguistics structures specific to Portuguese which differ significantly from equivalents in other Romance languages. 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: Native or near-native proficiency in a Romance language (Spanish, French, Italian, or Rumanian).

PORT 402 Intensive Portuguese  credit: 6 hours.
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.
PORT 404  **Luso-Brazilian Culture**  credit: 2 TO 4 hours.

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 420  **Studies in Portuguese Lit**  credit: 3 hours.

May be repeated to a maximum of 6 hours if topics vary. Prerequisite: Consent of instructor.

PORT 460  **Principles of Language Testing**  credit: 3 OR 4 hours.

Same as EIL 460, EPSY 487, FR 460, ITAL 460, ITAL 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 556  **Intro Romance Ling**  credit: 4 hours.

Same as FR 562, ITAL 556, LING 556, RMLG 556, and SPAN 556. See SPAN 556.

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: 3 hours.

Same as EIL 580, FR 580, GER 580, ITAL 580, SLS 580, and SPAN 580. See SPAN 580.

PORT 581  **Ling Psych Found of Lang Tchg**  credit: 4 hours.


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, and SPAN 584. See SPAN 584.

PORT 587  **Lang and Social Interaction II**  credit: 2 OR 4 hours.

Same as EIL 586, 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

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 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 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:
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
UIUC Social Sciences

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

PS 273  **Nature Society and Democracy**  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 310  Urban Gov in the US**  credit: 3 hours.
Examines the growth of cities; their legal status; and urban politics and organization in the United States. Class Information: 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.
Same as COMM 322, and SPCM 325. See SPCM 325.

**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 electorates 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 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. Same as ASST 345. 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 350  **Gov & Pol of Germany**  credit: 3 hours.
Examines the structures and processes of postwar German politics, with special attention to foreign policy formulation and problems. 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 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** 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. Prerequisite: PS 280 or PS 283, six hours of Political Science credit, 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** 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. Prerequisite: PS 280 or PS 283, six hours of Political Science credit, or consent of instructor.

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.
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 COMM 389. Prerequisite: PS 280 or PS 283, six hours of Political Science credit, or consent of instructor.

**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 Policy** 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 392 Chinese Foreign Policy** credit: 3 hours.
Examines the formulation, substance, and conduct of Chinese foreign policy, with emphasis on the period since 1949. Special attention is given to the forces shaping Chinese policy. Same as EALC 392. 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 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 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 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 457 Governing Globalization** 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 or order, welfare, and legitimacy in the governance of world's peoples and states. 3 Undergraduate hours. 4 Graduate hours. Prerequisite: Consent of instructor.

**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. Approved for both letter and S/U grading. 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  **Foundations of Organizational Behavior** credit: 4 hours.
Same as BADM 510, PSYC 553, and SOC 575. See BADM 510.

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; presupposes knowledge of basic international relations theory. Prerequisite: PS 580.

PS 525  **Logic of Political Inquiry I** credit: 4 hours.
Application of analytic principles and procedures to various topics in interactive decision making theory. May be repeated to a maximum of 8 hours.

PS 526  **Logic of Political Inquiry II** credit: 4 hours.
Special topics in theory formation and testing. May be repeated to a maximum of 8 hours if topics vary.

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 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 588  Comparative Foreign Policies  credit: 2 OR 4 hours.
Focuses on the formulation and implementation of foreign policy within the state, both as an international phenomenon, and as a national one for specific states (e.g., United States, Russia, India, China, Japan, etc.). Prerequisite: PS 540 or 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. 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.
Psychology

Psychology
Acting Head of Department: Lawrence Hubert
Department Office: 315 Psychology Building, 603 East Daniel, Champaign
Phone: 333-0631
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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 PSYC 103.

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 basic topics in experimental psychology; emphasizes perception, learning, memory, motivation, emotion, cognition, language development, and decision-making. Uses simple laboratory experiments to investigate these topics. Credit is not given for both PSYC 103 and PSYC 100.

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.

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

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 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.

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

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.

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

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.

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

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, 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 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:
**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. 3 undergraduate hours. 3 graduate hours.

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

**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 248; and 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 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 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 COMM 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 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, 230; or consent of instructor.

**PSYC 360  American Sign Language credit: 3 hours.**

Same as LING 360, SHS 360, and SPED 360. See SPED 360.

**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  Cross Cultural Psych 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 398  **Junior Honors Seminar**  credit: 0 TO 4 hours.
Seminar on experimental methods and contemporary psychological research. 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 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. Introduces experimental design; one-way ANOVA. 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; introduces multivariate methods, such as factor analysis, scaling, classification, and clustering. Discrete multivariate analysis-multiway contingency tables. 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: 4 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 8 hours. 4 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 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. 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, IB 330; 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 or PSYC 248; or consent of instructor

PSYC 415  **Human Neuropsych**  credit: 2 TO 4 hours.
Surveys how the neurological substrate of the human brain governs and influences cognition; biological bases of language, memory, spatial processing, and emotion; principles of brain organization, localization of function and individual differences; includes developmental and clinical issues. Same as NEUR 415. 3 undergraduate hours. 2 or 4 graduate hours. Prerequisite: PSYC 210 or equivalent.

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.

PSYC 423  **Language Acquisition**  credit: 3 OR 4 hours.
Survey of theory and research on the acquisition of language, concentrating on the acquisition of a first language by the young child. Same as COMM 423, and LING 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. 3 undergraduate hours. 4 graduate hours. Prerequisite: One of PSYC 210, 224, PSYC 248 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 TO 3 hours.
Same as EPSY 430. See EPSY 430.

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

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: 3 OR 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 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 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  **Current Topics in Psych**  credit: 2 TO 4 hours.
Special topics in the field of psychology. May be repeated to a maximum of 12 hours. Prerequisite: Junior standing and consent of instructor.

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. 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 506  **Psych Scaling Unidimen Meth**  credit: 4 hours.
Measurement of psychological values; centrally concerned with how subjective values of multiple physical dimensions combine to produce unidimensional subjective values; and includes conjoint and functional measurement theory and methods, theoretical models of judgment and the analysis of empirical structures, and applications of scaling models to problems in social, personality, perception, and cognitive psychology. Same as SOC 585. Prerequisite: PSYC 407, SOC 587, or equivalent course in quantitative methods.

**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 522  Models of Human Memory**  credit: 4 hours.
Detailed examination and comparison of human memory models. Emphasis on understanding the central aspects of 5-8 recent models and their similarities and differences. Prerequisite: PSYC 224, and PSYC 518, or consent of instructor.

**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 COMM 524, and LING 524. Prerequisite: LING 425, PSYC 425 or PSYC 462, or consent of instructor.

**PSYC 525  Psycholinguistics**  credit: 2 OR 4 hours.
Critical survey of methods and theories in the psychological study of the communication process; emphasis on linguistic, information-theory, and learning-theory approaches; psycholinguistic analysis of language decoding and encoding; and the development and measurement of symbolic processes, including meaning. Same as COMM 525, and LING 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 528  **Cog Determinants of Behav**  credit: 4 hours.
Theoretical and experimental analyses of the role of decision processes and causal attributions in the control of behavior; examines a variety of subparadigms from several areas of psychology. Prerequisite: Twelve hours of psychology.

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 Psych Prac**  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 538.

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 535  **Motivation and Morale in Indus**  credit: 4 hours.
Concepts and methods in the study of motivation of employees; determinants of employee attitudes and job satisfaction; and modification of attitudes and morale. Same as LIR 535. Prerequisite: Sixteen hours of graduate credit in psychology or consent of instructor.

PSYC 538  **Intro to Clin 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 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 542 Mental Models in Complex Sys  credit: 4 hours.
Same as IE 541. See IE 541.

PSYC 545 Strategies of Clin Intrvention  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. Prerequisite: Consent of instructor.

PSYC 550 Comm Psych and Soc Syst Change  credit: 2 OR 4 hours.
Intensive examination of the historical antecedents, conceptual models, strategic tactics, and evaluation methods of planned social and ecological change; focuses on the role of the community psychologist in such endeavors; and reviews interventions in several social systems, such as criminal justice education, employment, and mental health. Prerequisite: PSYC 239 or equivalent; graduate standing in psychology or consent of instructor.

PSYC 551 Soc Psych Theory and Meth I  credit: 4 hours.
First of 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. 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 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.
Same as BADM 510, PS 514, and SOC 575. See BADM 510.

PSYC 554 Classroom Learning  credit: 4 hours.
Same as EPSY 552. See EPSY 552.

PSYC 556 Eye Movements in Cognition  credit: 4 hours.
Same as EPSY 550. See EPSY 550.

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 Adv Prob in Attitude Res  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 Adv Prob in Res on 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.
Examination of laboratory investigations of cognitive development in children; emphasis on current theories of cognition and language; and class projects involving some laboratory work with children. Prerequisite: Twelve hours of psychology; 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. 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 computer packages LISTREL and EQS; 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 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: Donna Buchanan
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 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 only. May be repeated to a maximum of 9 undergraduate hours.

REES 550  **Seminar Russ & E Euro 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. Does not count as an area studies core course. Prerequisite: Enrollment in the M.A. program in REES and consent of the Director of the Russian, East European, and Eurasian Center.
Rehabilitation Counseling

Community Health
Head: Janet Reis
Department Office: 120 Huff Hall, 1206 South Fourth, Champaign
Phone: 333-2307
www.chlth.uiuc.edu/

REHB 199  Undergraduate Open Seminar  credit: 1 TO 4 hours.
May be repeated up 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 481  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 401 and 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.
(REHAB 381) 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.

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 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 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, Program for the Study of
Director of Program: Raj Pandharipande
Program 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. This course can be used to fulfill either Western or Nonwestern general education categories, but not both. Same as PHIL 110.
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 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 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 up to 1 time(s). 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 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 Comparv 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: Non-Western Cultures
UIUC: Literature and the Arts

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 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 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: Non-Western Cultures
UIUC: Literature and the Arts

**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 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 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 401  **Introductory Coptic I**  credit: 3 hours.
Same as COP 401, and LING 414. See COP 401.

RLST 402  **Introductory Coptic II**  credit: 3 hours.
Same as COP 402, and LING 415. See COP 402.

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. 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 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 YDHS 420. See YDHS 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 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 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.
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 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: Ronald Sousa
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 556  Intro Romance Ling  credit: 4 hours.
Same as FR 562, ITAL 556, LING 556, PORT 556, and SPAN 556. See SPAN 556.

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-countryside 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: 244-3061
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. Approved for both letter and S/U grading.

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. Approved for both letter and S/U grading.

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. Approved for both letter and S/U grading. 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. Approved for both letter and S/U grading. 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. Approved for letter and S/U grading. 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. Approved for both letter and S/U grading.

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

RST 390  Honors  credit: 2 hours.
Same as CHLH 390 and KIN 390. See KIN 390. May be repeated to a maximum of 6 hours.

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 a:
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. Approved for both letter and S/U grading.

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). Approved for both letter and S/U grading. 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: 6 OR 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. Must be repeated to a maximum of 12 undergraduate hours credit. Prerequisite: Senior standing; RST 480 and RST 410.

RST 501  Foundations of Leisure Studies  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.

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RST 502  **Leisure Systems Administration**  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  **Personnel Admin in Leisure**  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 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 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 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. Approved for both letter and S/U grading.

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.
Russian

Slavic Languages and Literature
Head of Department: Harriet Murav
Department Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-0680

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 up to 1 time(s). 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 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 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 credit 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 up 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 up 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 credit hours only. 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 FR 471, GER 469, HUM 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 FR 475, GER 475, LAT 475, and SPAN 475. See SPAN 475.

RUSS 478  **Topics Secondary Lang Tchg**  credit: 4 hours.
Same as FR 478, GER 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  **Advanced Russian Language**  credit: 3 hours.
Reading and translation of general and individually specialized materials, to increase speed, accuracy, and vocabulary; designed for graduate students preparing to offer a reading knowledge of Russian for the Ph. D. No graduate credit.

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 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.

RUSS 576  **Methods in Slavic Grad Study**  credit: 3 OR 4 hours.
Surveys major figures and approaches in Russian literary theory and criticism from the eighteenth century to the present. Same as CWL 576. Taught in Russian. Prerequisite: RUSS 302; or equivalent proficiency. Taught in Russian.

RUSS 581  **Ling Psych Found of Lang Tchg**  credit: 4 hours.
Same as EIL 581, FR 581, GER 581, ITAL 581, PORT 581, and SPAN 581. See FR 581.
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.
First of four terms leading to a reading knowledge of Danish, Norwegian, or Swedish, and to an oral command of one of these languages; linguistic structure, reading, and oral practice.

SCAN 102  Beginning Scandinavian II  credit: 4 hours.

SCAN 103  Intermediate Scandinavian I  credit: 4 hours.
Readings in Danish and Norwegian, or in Swedish; structure of Swedish, or of Danish and Norwegian. Prerequisite: SCAN 102 or equivalent.

SCAN 104  Intermediate Scandinavian II  credit: 4 hours.
Continuation of SCAN 103. Readings in classical and modern Danish, Norwegian, or Swedish texts. Prerequisite: SCAN 103.

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

SCAN 215  Scandinavian Prose Fiction  credit: 3 hours.
Works by Jacobsen, Strindberg, Vesaas, Myrdal, and Nobel Prize winners Hamsun, Undset, Lagerkvist, and Johnson; readings and discussion in English. Same as CWL 215.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

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 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 475  Women and Society in Scan Lit  credit: 3 hours.
Survey of how women and their social roles are portrayed in Scandinavian literature, primarily of the nineteenth and twentieth centuries. Readings and discussion in English. Same as CWL 475, and GWS 475. Prerequisite: One college-level literature course or one course in women's studies, 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  Swedish Cinema  credit: 3 hours.
Survey of Sweden's major film movements, genres, and directors. Weekly lectures, discussions, and screenings of representative films from the silent era to the present. 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 496  Special Topics in Scan Studies  credit: 2 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

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

SHS 120  Child, Comm, & Lang Ability  credit: 3 hours.
Course 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 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.
Course 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.

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 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.

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.
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 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

**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 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 360  American Sign Language**  credit: 3 hours.
Same as LING 360, PSYC 360, and SPED 360. See SPED 360.

**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  Introduction to Stuttering**  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 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: 3 OR 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 - 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.

**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 510 Stuttering II** credit: 4 hours.
Advanced study of stuttering disorders; topics vary, but emphasis is placed on measurement, clinical evaluation, and therapeutic methods. Prerequisite: A course in stuttering.

**SHS 511 Head/Neck Ca & Neuro Voice Dis** credit: 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, 301, 411 or equivalent or consent of instructor.

**SHS 512 Orofacial Anomalies** credit: 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: 2 TO 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. Prerequisite: Consent of instructor

**SHS 531  Lang Disorders Preschool Child**  credit: 2 TO 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. Prerequisite: SHS 320 or equivalent, or consent of instructor.

**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 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, SHS 550 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 553 or consent of instructor

**SHS 557  Adv Clin Prac Aud Assess Rehab**  credit: 1 TO 4 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 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. Courses Information: Certain sections are approved for S/U grading only. Check the class schedule for a list of these sections.

**SHS 593  Special Problems**  credit: 2 TO 8 hours.
Investigative projects in speech and hearing not including theses. 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

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 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 COMM 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 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 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
http://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 535  **Sem Neuroling of Bilingualism**  credit: 4 hours.
Same as EIL 535, and LING 535. See LING 535.

SLS 580  **Classroom Lang Acquisition**  credit: 3 hours.
Same as EIL 580, FR 580, GER 580, ITAL 580, PORT 580, and SPAN 580. See SPAN 580.

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
www.linguistics.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.
Sociology

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 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  **Latin Am & Latino 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
UIUC Social Sciences

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:

**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:

**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:

**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:

**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:

**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:

**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:

**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:
SOC 300  Attitude Theory and Change  credit: 3 hours.
Same as COMM 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 in U.S. Society  credit: 3 hours.
Same as GWS 320. See GWS 320.

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 COMM 351 and 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 377 Crowds and Violence credit: 3 hours.
Crowd formation and participation; recurring forms of individual and social behavior in crowds; routine and problematic crowd dispersal; social movement origins and participation; growth and organization; strategies, tactics, and consequences for participants and society; origins and consequences of racial, prison, sports and festival riots, and of violent confrontations between protest movements and the police.

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 326 Lincoln Hall.

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. 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.
Examination of historical 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 455  **Philosophy of Social Science**  credit: 3 OR 4 hours.
Same as ANTH 429, and PHIL 475. See PHIL 475.

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 458  **Science Technology and Policy**  credit: 4 hours.
Same as NRES 449. See NRES 449.

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 465  **Empire and War**  credit: 3 OR 4 hours.
Examination of the background and ramifications of the new wars. Against the backdrop of contemporary globalization we turn to dynamics in the United States as a prelude to the "war on terrorism". In light of data and debates we consider continuities and discontinuities between neoliberal globalization and "war on terrorism", or "permanent war", with regard to government, geopolitics and military strategies, economic policies and trade, corporations, and culture, media and spin. 3 undergraduate hours or 4 graduate hours.

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, postmodernism and capitalism. 3 undergraduate hours or 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 a:
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.

**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 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 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**  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 COMM 580. Prerequisite: 4 hours graduate credit in sociology.

**SOC 579**  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 580**  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 581**  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 582**  Multivar Anlys in Psych and Ed  credit: 4 hours.
Same as EPSY 584, and PSYC 594. See PSYC 594.

**SOC 583**  Psych Scaling Unidimen Meth  credit: 4 hours.
Same as PSYC 506. See PSYC 506.

**SOC 584**  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 585**  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 586**  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 599  Thesis Research**  credit: 0 TO 16 hours.
May be repeated. Approved for S/U grading only.
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.

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 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  **Treat and Prevent of Sub Abuse**  credit: 4 hours.
Introduction to the issue of substance abuse and its impact on society; addresses the physiological, psychological, social, and cultural aspects of substance abuse. At the individual and family level, examines the causes, development, and treatment of substance abuse. At the societal level, examines public policy and service issues regarding the treatment and prevention of abuse. Special attention devoted to examining substance abuse issues among diverse population groups. 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.**

Systematic and critical examination of procedures, and 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). The course uses Kettner's framework for analyzing and assessing 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 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 Welfare Pol and Svcs  credit: 4 hours.**
Examines child welfare policies and practice in relation to social services which support, supplement, or substitute for parental care of children. A particular focus is on the ongoing evolution of social policy regarding the role of the state in managing relationships between children and their caregivers, particularly with respect to vulnerable and/or stigmatized populations (e.g., the poor, single-parent families, families of color, sexual minorities). 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

**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: Graduate standing in social work 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 TO 8 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 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. 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: 2 TO 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: 4 TO 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 needed 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: 2 TO 8 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.
Legal 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: Graduate standing in social work or consent of instructor.

SOCW 593  **Design of Social Work Research**  credit: 4 hours.
This course is intended for students in the Ph.D. program in Social Work. Issues and problems in social work research design. Includes review of the research process; quantitative, qualitative, and evaluative research methodologies; critical assessment and use of measurement instruments; design of original research study, and the art of research proposal writing. Prerequisite: Admission to Ph.D. program.

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 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

**Head of Department:** Ronald Sousa  
**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>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN 101</td>
<td>Elementary Spanish I</td>
<td>4 hours</td>
<td>For students who have no university credit in Spanish.</td>
</tr>
<tr>
<td>SPAN 102</td>
<td>Elementary Spanish II</td>
<td>4 hours</td>
<td>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.</td>
</tr>
<tr>
<td>SPAN 103</td>
<td>Intermediate Spanish</td>
<td>4 hours</td>
<td>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.</td>
</tr>
<tr>
<td>SPAN 122</td>
<td>Elementary Spanish</td>
<td>4 hours</td>
<td>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.</td>
</tr>
<tr>
<td>SPAN 125</td>
<td>Span for Heritage Speakers I</td>
<td>4 hours</td>
<td>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.</td>
</tr>
<tr>
<td>SPAN 140</td>
<td>El mundo hispano-americano</td>
<td>4 hours</td>
<td>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.</td>
</tr>
<tr>
<td>SPAN 141</td>
<td>Intro to Spanish Grammar</td>
<td>4 hours</td>
<td>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 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.</td>
</tr>
<tr>
<td>SPAN 142</td>
<td>Spanish in the Professions</td>
<td>4 hours</td>
<td>Introduction to Spanish in business, law/law enforcement, medical, education &amp; 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.</td>
</tr>
<tr>
<td>SPAN 143</td>
<td>Span for Heritage Speakers II</td>
<td>4 hours</td>
<td>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 125 or consent of instructor.</td>
</tr>
<tr>
<td>SPAN 191</td>
<td>Freshman Honors Tutorial</td>
<td>1 TO 3 hours</td>
<td>Study of selected topics on an individually arranged basis. Open only to honors majors or to Cohn Scholars and associates. May be repeated up to 1 time(s) to a maximum of 3 hours. Prerequisite: Consent of departmental honors adviser in Spanish.</td>
</tr>
<tr>
<td>SPAN 199</td>
<td>Undergraduate Open Seminar</td>
<td>1 TO 5 hours</td>
<td>May be repeated. Approved for both letter and S/U grading.</td>
</tr>
<tr>
<td>SPAN 200</td>
<td>Readings in Hispanic Texts</td>
<td>3 hours</td>
<td></td>
</tr>
</tbody>
</table>
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. Does not count for credit toward the major. 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 225  **Intro Hispanic Literature I**  credit: 3 hours.
Introduction to the literatures of both Spain and Spanish America; emphasizes the major periods and movements in the light of cultural, artistic, social, and historical contexts and the methodology for reading those texts through literary analysis appropriate for a variety of genres: novel, drama, poetry, short story, essay; focuses on literature written before 1700. No advanced placement credit. SPAN 225 and SPAN 227 must be taken in sequence. Prerequisite: SPAN 200 (or advanced placement credit for SPAN 200), and SPAN 204. Concurrent enrollment in SPAN 228 strongly recommended.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

SPAN 227  **Intro Hispanic Literature II**  credit: 3 hours.
Introduction to the literatures of both Spain and Spanish America; emphasizes the major periods and movements in the light of cultural, artistic, social, and historical contexts and the methodology for reading those texts through literary analysis appropriate for a variety of genres: novel, drama, poetry, short story, essay; focuses on literature written after 1700. No advanced placement credit. SPAN 225 and SPAN 227 must be taken in sequence. Prerequisite: SPAN 225.

This course satisfies the General Education Criteria for a:
UIUC: Literature and the Arts

SPAN 228  **Spanish Composition**  credit: 3 hours.
Basic composition course; problems of written Spanish and principles of Spanish stylistic patterns; weekly written exercises. Prerequisite: 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  **Intensive Spoken Spanish**  credit: 3 hours.
Intensive oral contact with Spanish; meets four hours per week. May be repeated. Prerequisite: SPAN 208.

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 342.

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 344. May be repeated up to 2 time(s).

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 346. 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 301  Culture of Spain  credit: 3 hours.
Survey of Spanish civilization from the beginning to present times. Prerequisite: SPAN 204 and SPAN 228.

SPAN 302  Intro 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 204.

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. Prerequisite: SPAN 140, SPAN 141, SPAN 142 or SPAN 143 or equivalent.

SPAN 402  Span Phonetics & Phonology  credit: 2 hours.
Practical, introductory course to Spanish phonetics, stressing practice in pronunciation. May be offered as intensive eight-week course. 2 undergraduate hours. No graduate credit. Prerequisite: SPAN 140, SPAN 141, or SPAN 142 or equivalent.

SPAN 404  Span Syntax & Morphology  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. 3 undergraduate hours. No graduate credit. Prerequisite: SPAN 204.

SPAN 442  US Latina Lit and Iconography  credit: 3 OR 4 hours.
Same as LLS 442 and GWS 445. See LLS 442.

SPAN 450  Span Lit I Works & Writers  credit: 3 hours.
Introduction to selected Medieval and Golden Age texts. 3 undergraduate hours. No graduate credit. Prerequisite: SPAN 228, SPAN 225, and SPAN 227.

SPAN 452  Span Lit II Works & Writers  credit: 3 hours.
Introduction to selected texts from 1700 to the present. 3 undergraduate hours. No graduate credit. Prerequisite: SPAN 228, SPAN 225, and SPAN 227.

SPAN 454  Span Am Lit I Works & Writers  credit: 3 hours.
Study of major writers and representative works of Spanish American literature from Pre-Columbian times until 1875. 3 undergraduate hours. No graduate credit. Prerequisite: SPAN 228, SPAN 225, and SPAN 227.

SPAN 456  Span Am Lit II Works & Writers  credit: 3 hours.
Study of major writers and representative works of Spanish American Literature from 1875 until the present. 3 undergraduate hours. No graduate credit. Prerequisite: SPAN 228, SPAN 225, and SPAN 227.

SPAN 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 SLS 460. See EIL 460.

SPAN 471  Intro Second Lang Learn Tchg  credit: 4 hours.
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 FR 471, GER 469, HUM 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).

SPAN 475  Intro to Comm Lang Tchg  credit: 4 hours.
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
form of microteachings and observations in local schools. Same as FR 475, GER 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 FR 478, GER 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: 1 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 505 Intro Medieval Span Lit credit: 3 hours.
Historical and cultural background for the Middle Ages; selected readings in medieval literature from the jarchas to the Corbacho. Prerequisite: SPAN 450 or equivalent.

SPAN 510 Sem Medieval Literature credit: 4 hours.
Research work in medieval Spanish literature; theory and practice. Topics vary. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: SPAN 505, or equivalent.

SPAN 512 Literature of the Golden Age credit: 4 hours.
Study of authors, genres, and critical issues of the Golden Age. Prerequisite: SPAN 450 or equivalent.

SPAN 514 Don Quixote I & Critical Read credit: 4 hours.
Detailed study and analysis of Don Quixote I (1605) and its impact on modern literary criticism. Prerequisite: SPAN 450 or equivalent.

SPAN 516 Sem Golden Age Literature credit: 4 hours.
May be repeated to a maximum of 8 hours if topics vary. Prerequisite: SPAN 512 or equivalent.

SPAN 520 Spanish Literature 1800-1900 credit: 4 hours.
Selected literary texts published in Spain during the nineteenth century. Focus on analysis of literary manifestations of major cultural movements and artistic currents and preoccupations. Prerequisite: SPAN 450 and SPAN 452 or equivalent.

SPAN 522 Spanish Literature 1898-1936 credit: 4 hours.
Selected literary texts published in Spain between 1898 and 1936. Focus on analysis of literary manifestations of major cultural movements and artistic currents and preoccupations. Prerequisite: SPAN 452 or equivalent.
SPAN 524  **Contemporary Spanish Lit**  credit: 3 hours.
Study of the representative authors, genres, and literary modalities in the literature of Spain since the Spanish Civil War; particular emphasis on the neo-realist, existentialist (tremendista) novel, and the social novel and theatre, as well as on social and experimental trends in all genres since the mid-1960s and in the post-Franco era. Prerequisite: SPAN 452 or equivalent.

SPAN 526  **Sem Modern Spanish Literature**  credit: 4 hours.
Study of problems in the works of a major writer or group of writers of the eighteenth or nineteenth centuries. May be repeated to a maximum of 8 hours if topics vary. Prerequisite: SPAN 520.

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 524 or equivalent.

SPAN 530  **Colonial Spanish American Lit**  credit: 4 hours.
Studies colonial Spanish American written and pictorial texts. Emphasizes how women, mestizos, creoles, mulattos, indigenous people, and blacks wrote from within the colonial system and produced alternative accounts of the European presence in Spanish America. Prerequisite: SPAN 454 or equivalent.

SPAN 531  **Spanish-American Novel**  credit: 4 hours.
Major movements and writers in the development of the Spanish-American novel from its beginnings to the present. May be repeated to a maximum of 16 hours if topics vary. Prerequisite: SPAN 454 and SPAN 456, or equivalent.

SPAN 532  **Spanish-American Drama**  credit: 3 hours.
Intensive and analytical study of the works of principal playwrights of the modern and contemporary periods in Spanish America. Prerequisite: SPAN 454 and SPAN 456, or equivalent.

SPAN 533  **Spanish-American Short Story**  credit: 3 hours.
Intensive and analytical study of the principal cuentistas of Spanish America. Prerequisite: SPAN 454 and SPAN 456, or equivalent.

SPAN 534  **Spanish-American Poetry**  credit: 4 hours.
Major poets and movements in the development of Spanish-American poetry from the Colonial Period to the present. May be repeated to a maximum of 16 hours if topics vary. Prerequisite: SPAN 454 and SPAN 456, 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: One of SPAN 530 through SPAN 534, depending on topic and consent of instructor.

SPAN 536  **Colonial Latina/o Narratives**  credit: 4 hours.
An introduction to texts produced during the colonial period (1492-1821) and pertaining to the 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 colonial power in that delineation. Prerequisite: Graduate student standing 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: One of SPAN 505 through SPAN 535, depending on topic and consent of instructor.

SPAN 550  **Spanish Phonology**  credit: 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. Prerequisite: SPAN 302.

SPAN 551  **Spanish Morphology**  credit: 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. Prerequisite: SPAN 302 or equivalent; or consent of instructor.

SPAN 552  **Spanish Syntax**  credit: 4 hours.
Systematic introduction to the foundations of Spanish syntax based on standard and more recent treatments of Spanish and syntactic theory. Prerequisite: SPAN 302 or consent of instructor.

SPAN 553  **Spanish Sociolinguistics**  credit: 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. Prerequisite: SPAN 302 or equivalent; or consent of instructor.

SPAN 554 History Spanish Lang  credit: 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. Prerequisite: SPAN 302 or equivalent introduction to Spanish or General Linguistics.

SPAN 556 Intro Romance Ling  credit: 4 hours.
Comparative and historical analysis of the Romance languages. Same as FR 562, ITAL 556, LING 556, PORT 556, and RMLG 556. Prerequisite: Four semesters of a Romance language or Latin, or equivalent; LING 100, SPAN 302, FR 416, or equivalent.

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 556 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-Brasilian, 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, or consent of instructor.

SPAN 580 Classroom Lang Acquisition  credit: 3 hours.
Provides for an introduction to the context, process(es), and product of classroom language acquisition; emphasis is placed upon research, research findings, and implications of research. Same as EIL 580, FR 580, GER 580, ITAL 580, PORT 580, and SLS 580. Prerequisite: HUMAN 471 or equivalent, or consent of instructor.

SPAN 581 Ling Psych Found of Lang Tchg  credit: 4 hours.
Same as EIL 581, FR 581, GER 581, ITAL 581, PORT 581, and RUSS 581. See FR 581.

SPAN 584 Theories in SLA  credit: 4 hours.
Course introduces doctoral students to current mainstream theories (e.g., linguistic, psycholinguistic, cognitive, and social) used in SLA research. Emphasis is on gaining fundamental understanding of how theories work in SLA, how to evaluate them, and what they attempt to explain. Same as CI 584, EALC 584, EIL 584, EPSY 563, FR 584, GER 584, ITAL 584, LING 584, and PORT 584. Prerequisite: EIL 489 or equivalent or consent of instructor.

SPAN 587 Lang and Social Interaction II  credit: 2 OR 4 hours.
Same as EIL 556, ITAL 587, and PORT 587. See EIL 556.

SPAN 588 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 590 Topics in Hispanic Studies  credit: 4 hours.
Topical studies of Hispanic literature or linguistics beyond the scope of regular offerings at the 400- or 500-level. May be repeated to a maximum of 12 hours if topics vary. Prerequisite: Corresponding introductory course at the 400-level, or consent of instructor.

SPAN 595  **Special Topics in Spanish**  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 SIP. Consult Graduate Advisor. May be repeated up to a maximum of 8 hours.

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

Speech Communication
Head of Department: Barbara J. Wilson
Department Office: 244 Lincoln Hall, 702 South Wright, Urbana
Phone: 333-2683
www.spcomm.uiuc.edu

SPCM 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 SPCM 101 and either SPCM 111 or SPCM 112.

SPCM 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

SPCM 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 SPCM 112 Credit is not given for both SPCM 111 and SPCM 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 SPCM 111 - SPCM 112 and SPCM 101. SPCM 111 - SPCM 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

SPCM 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 SPCM 112 Credit is not given for both SPCM 111 - SPCM 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 SPCM 111 - SPCM 112 and SPCM 101. SPCM 111 - SPCM 112 may not be taken by students who have completed the University's Composition I requirement.
Prerequisite: SPCM 111.
This course satisfies the General Education Criteria for a:
UIUC: Freshman Composition I

SPCM 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.

SPCM 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: SPCM 101 or equivalent.

SPCM 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 up to 1 time(s). Prerequisite: Consent of departmental honors advisor.

SPCM 199 Undergraduate Open Seminar credit: 0 TO 5 hours.
May be repeated to a maximum of 6 hours.

SPCM 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 Speech Communication, recommendation from an instructor, and approval of application.

SPCM 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.

SPCM 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.

SPCM 211  Business Communication  credit: 2 hours.
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. Prerequisite: SPCM 101.

SPCM 212  Intro to Organizational Comm  credit: 3 hours.
Considers major theories, research questions, and approaches to organizational communication.

SPCM 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.

SPCM 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

SPCM 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.

SPCM 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.

SPCM 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

SPCM 310  The Rhetorical Tradition  credit: 3 hours.
Survey of major trends in the development of rhetorical theory from Homer to the present.

SPCM 321  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: SPCM 101.

SPCM 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: SPCM 101.

SPCM 325  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 COMM 322, and PS 312.

SPCM 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.

SPCM 390  Individual Study  credit: 2 hours.
Individual investigation of special problems. May be repeated to a maximum of 4 hours. Prerequisite: Twelve hours of speech communication; a grade-point average of 3.25; and consent of head of department.

SPCM 396  **Special Topics in Comm**  credit: 3 hours.
Special topics in speech communication not treated in regularly scheduled courses. See Schedule for current topics. May be repeated to a maximum of 6 hours if topics vary.

SPCM 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. Same as COMM 408. 3 undergraduate hours. 4 graduate hours.

SPCM 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.

SPCM 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: SPCM 212.

SPCM 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: SPCM 212.

SPCM 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.

SPCM 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.

SPCM 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.

SPCM 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.

SPCM 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.

SPCM 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.

SPCM 424  **Campaign Messages & Strategies**  credit: 3 OR 4 hours.
Consideration of factors central to the sustained persuasive campaign; special attention to the nature and functions of persuasion in the political campaign. 3 undergraduate hours. 4 graduate hours.

SPCM 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.

SPCM 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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit: 3 OR 4 hours.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCM 435</td>
<td>Adv Interpersonal Comm</td>
<td>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. Same as COMM 435. 3 undergraduate hours. 4 graduate hours. Prerequisite: SPCM 230, or consent of instructor.</td>
</tr>
<tr>
<td>SPCM 436</td>
<td>Family Communication</td>
<td>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. 3 undergraduate hours. 3 or 4 graduate hours.</td>
</tr>
<tr>
<td>SPCM 450</td>
<td>Adv Topics in Public Discourse</td>
<td>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.</td>
</tr>
<tr>
<td>SPCM 462</td>
<td>Interpersonal Health Comm</td>
<td>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.</td>
</tr>
<tr>
<td>SPCM 474</td>
<td>Intro to Research Methods</td>
<td>Introduction to descriptive and experimental methods in communication; intended to produce understanding and critical evaluation of research designs. 3 undergraduate hours. 4 graduate hours.</td>
</tr>
<tr>
<td>SPCM 491</td>
<td>Honors Individual Study</td>
<td>Individual investigation of special problems 2 undergraduate hours. No graduate credit. May be repeated to a maximum of 4 hours. Prerequisite: Twelve hours of speech communication; a grade-point average of 3.50; and consent of head of department.</td>
</tr>
<tr>
<td>SPCM 493</td>
<td>Honors Senior Thesis</td>
<td>Individual study leading to a thesis for honors in the Department of Speech Communication 2 undergraduate hours. No graduate credit. May be repeated to a maximum of 4 hours. Prerequisite: Senior standing; a grade-point average of 3.50; and consent of head of department.</td>
</tr>
<tr>
<td>SPCM 496</td>
<td>Adv Topics in Communication</td>
<td>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.</td>
</tr>
<tr>
<td>SPCM 529</td>
<td>Seminar Communication Theory</td>
<td>Special topics in communication theory and research. May be repeated to a maximum of 16 hours. Prerequisite: Consent of instructor.</td>
</tr>
<tr>
<td>SPCM 536</td>
<td>Seminar Group Discussion</td>
<td>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.</td>
</tr>
<tr>
<td>SPCM 538</td>
<td>Seminar Rhetorical Theory</td>
<td>Study of special topics in the history of rhetorical theory. May be repeated to a maximum of 16 hours.</td>
</tr>
<tr>
<td>SPCM 595</td>
<td>Special Problems</td>
<td>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.</td>
</tr>
<tr>
<td>SPCM 599</td>
<td>Thesis Research</td>
<td>May be repeated. Approved for S/U grading only.</td>
</tr>
</tbody>
</table>

page 639 - Speech Communication
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 360  American Sign Language  credit: 3 hours.
Beginning course in American Sign Language (ASL), the language developed and used by the deaf community of North America; consists of a preparatory phase to attune students to communication in the manual-visual mode, followed by instruction and extensive practice in basic sign vocabulary, sentence structure, elementary conversation, and the literature of the ASL community. Same as LING 360, PSYC 360, and SHS 360.

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 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. Concurrent enrollment in EDPR 432 or EDPR 442, or consent of instructor. Prerequisite: SPED 205 or consent of instructor.

**SPED 408 Learning & Behavior in Gen Edu** credit: 3 hours.
Examination of the role of the general classroom teacher in educating students with learning and behavior problems. Topics include: identifying and describing learning and behavior problems, classroom behavior management techniques, remediation of academic skill deficits, and measuring and evaluating pupil progress.

**SPED 414 Assessment in ECSE** credit: 2 TO 4 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. Students will be required to complete an extensive field based component in order to receive 4 hours. Prerequisite: Consent 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 hours undergraduate and graduate. 4 hours graduate.

**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.

**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.

**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.

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: 2 TO 4 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 511  **Psychopharmacology in SPED**  credit: 4 hours.
General survey of psychoactive drugs used extensively with children in special education, including reasons for the prescription, behavioral effects as observed in the classroom, effects on the child's behavior at home, issues concerning the use of the drugs, and litigation about these issues.

SPED 517  **Disability Issues in SPED**  credit: 4 hours.
Introduction to special education: characteristics, assessment, and teaching methodology for students with learning and other disabilities; methodology is directed to the regular classroom teacher of students with special needs.

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 522  **Academic Remediation**  credit: 4 hours.
Examination of the major theoretical approaches in the areas of mild disabilities and their critical evaluation in light of research. Topics include: assessment and remediation strategies, critical evaluation of research, and issues in mild disabilities.

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 525  **Collaborative Resource Tchg**  credit: 4 hours.
Focuses on effective instructional practices for teachers of students with mild learning and behavior problems. Trains teachers in direct service delivery models for collaborative resource teaching.

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). Course 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 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.

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 doctoral studies or 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
Department Office: 101 Illini Hall, 725 South Wright St., Champaign
Phone: 333-2167
www.stat.uiuc.edu

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. Prerequisite: MATH 220.

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 242, 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 242, 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 230 or MATH 234 or equivalent, and 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 468. 3 undergraduate hours. 4 graduate hours. May be repeated with approval. Prerequisite: STAT 410 or STAT 420; or consent of instructor.

STAT 451  **Probability Theory I**  credit: 3 OR 4 hours.
Same as MATH 461. See MATH 461.

STAT 456  **Probability Theory II**  credit: 3 OR 4 hours.
Same as MATH 466. See MATH 466.

STAT 458  **Math Modeling in Life Sciences**  credit: 3 OR 4 hours.
Same as ANSC 448, and IB 487. See ANSC 448.

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 551  **Theory of Probability I**  credit: 4 hours.
STAT 552  Theory of Probability II  credit: 4 hours.
Same as MATH 561. 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  Reading Course  credit: 4 OR 8 hours.
Directed reading on various topics. May be repeated with approval. Subject to approval by the student's advisor. Prerequisite: 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 OR 5 hours.
Second-year Swahili with emphasis on developing conversational fluency; some readings on Swahili culture and customs. Same as AFST 433. 5 undergraduate hours. 4 graduate hours. Prerequisite: One year of Swahili.

SWAH 404  **Intermediate Swahili II**  credit: 4 OR 5 hours.
More of second-year Swahili with emphasis on conversational fluency; some reading in Swahili literature. Same as AFST 434. 5 undergraduate hours. 4 graduate hours. 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

Theoretical and Applied Mechanical
Interim Department Head: Nancy Sottos
Department Office: 212 Talbot Laboratory, 104 South Wright, Urbana
Phone: 333-2322
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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 Techn and Mgmnt  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. Prerequisite: Junior standing in the College of Business.

TAM 206  Mechanics for MatSE  credit: 4 hours.
Topics from statics, mechanics of materials, and fluid mechanics pertinent to the fields of metallurgical engineering, ceramic engineering, and 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, and the principles of fluid mechanics, conservation equations (control volume analysis) for fluid flow, Reynolds number, and slow inertial and turbulent flows. Course is tailored for students with interests in materials science and engineering. Same as MSE 206. Credit is not given for both TAM 206 and either TAM 251 or TAM 335. Prerequisite: Credit or concurrent registration in MSE 201.

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 242 or MATH 243.

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 242 or MATH 243.

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. 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; and 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. Primarily for Engineering Mechanics majors. Other students meeting the prerequisites may enroll with consent of instructor. Prerequisite: Credit or concurrent registration in TAM 251; sophomore standing in Engineering Mechanics.

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. Prerequisite: Junior standing in engineering.
TAM 324  Behavior of Materials  credit: 4 hours.
Mechanical behavior of engineering materials, including metals, ceramics, polymers, concrete, wood, bitumens, and asphaltic concretes; explanations of macroscopic behavior in terms of phenomena at the microscopic level. Lecture/lab format. Same as CEE 300. Prerequisite: Completion of Composition I general education requirement; TAM 251.

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. Prerequisite: TAM 212; MATH 225 or MATH 415; MATH 385, MATH 386, or MATH 441.

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: TAM 324/CEE 300 or ME 330; or consent of instructor.

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. Prerequisite: TAM 324/CEE 300 or ME 330.

TAM 428  Mechanics of Composites  credit: 3 hours.
Introduction to the 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. Prerequisite: TAM 324/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: TAM 335, ME 310, or AE 312; MATH 380.

TAM 438  Viscous Flow and Heat Transfer  credit: 4 hours.
Same as AE 412, and ME 411. See AE 412.

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. Theoretical and Applied Mechanics students will not receive graduate credit for this course, except by petition to the Graduate Program Committee. Prerequisite: TAM 251 and MATH 380.

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, Hooker'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: TAM 251 and MATH 380.

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. Same as BIOE 461. Prerequisite: TAM 251 or equivalent.

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: MATH 385, MATH 386, or MATH 441; CS 101.

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: Advanced undergraduate or graduate standing; consent of instructor.

TAM 498  Special Topics  credit: 1 TO 4 hours.
Lectures on special topics in selected areas of Theoretical and Applied Mechanics. May be repeated in the same or separate terms as topics vary to a maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: Senior or graduate standing; see also Schedule or departmental course information.

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. Prerequisite: Senior standing; approval of the head of the department.

TAM 500  Seminar  credit: 1 hours.
Lectures and discussion on current topics in theoretical and applied mechanics. Required of all 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; and response of complex structures Same as ME 545. Prerequisite: TAM 412, TAM 542, and TAM 551; or equivalents.

TAM 515  Advanced Physical Acoustics  credit: 4 hours.
Same as ECE 545. See ECE 545.

TAM 517  Stochastic Structural Dynamics  credit: 4 hours.
Same as AE 552. See AE 552.

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 or equivalent; 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; and current topics in materials research (such as high-temperature response and ferroelasticity). Prerequisite: Undergraduate course in material sciences; 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 and ME 555. 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; and aspects of inviscid compressible flow. Prerequisite: TAM 435 or equivalent; MATH 380; MATH 385, MATH 386, or MATH 441.

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; and an introduction to turbulence. Prerequisite: TAM 435 or equivalent; MATH 380; MATH 385, MATH 386, or MATH 441.

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. Prerequisite: Graduate standing in engineering, physics, mathematics, or related field.

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 380; MATH 385, MATH 386, or MATH 441.

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 or equivalent; TAM 541 or equivalent.

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: TAM 251; MATH 380; MATH 385, MATH 386, or MATH 441.

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: TAM 551.

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; or equivalents.

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; and applications to systems of equations. Same as CSE 517. Prerequisite: One of TAM 470, CEE 570, CS 455, ME 471, or an equivalent.

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 graduate hours). Prerequisite: Graduate standing and consent of instructor.

TAM 598  **Advanced Special Topics**  credit: 1 TO 4 hours.
Lectures on advanced special areas of Theoretical and Applied Mechanics. May be repeated in the same or separate terms as topics vary to a maximum of 12 hours. Prerequisite: Graduate standing; see also Schedule or departmental course information.

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

Theatre
Head of Department: Robert Graves
Department Office: 4-122 Krannert Center for the Performing Arts, 500 South Goodwin, Urbana
Phone: 333-3538
www.theatre.uiuc.edu/theatre

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. Approved for S/U grading only. 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. Lecture and discussion sections required. Attendance at Department of Theater productions (ticket fee required). Credit not given for both THEA 101 and 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 108  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 125  Graphic Skills  credit: 0 TO 3 hours.
Introduction to drawing, technical drafting, and model building for the theatre. Drawing and drafting supplies are required. 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: 1 TO 5 hours.
May be repeated to a maximum of 12 hours.

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 210  **Oral Interpretation**  credit: 3 hours.
Oral reading for understanding, appreciation, and communication.

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 108 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 108

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, 108, and 261, or consent of instructor.

THEA 221  **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 125

THEA 222  **Introduction 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 223  **Introduction to Stage Lighting**  credit: 3 hours.
Studio course analyzing current lighting practices and equipment by means of production oriented assignments.

THEA 224  **Advanced Lighting Design**  credit: 3 hours.
Lighting design for the proscenium, arena, and thrust stage. Enrollment limited to Theatre majors. Prerequisite: THEA 231.

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: US Minority Culture(s)

THEA 261  **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 108; 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  **Acting: Movement**  credit: 2 hours.
Basic physical training for expressive body awareness and dynamics. 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. Enrollment limited to theatre majors.

**THEA 276 Acting: Voice**  credit: 2 hours.

Fundamentals of voice and speech production. Deals with the fundamental elements involved in vocal production and good clear speech. Through exercises, the vocal and speech mechanisms are developed and applied to the delivery of text. 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 372, 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 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 412 Rehearsal Techniques**  credit: 3 OR 4 hours.

Laboratory course exploring the interaction between directors and actors in the rehearsal process. 3 undergraduate hours. 4 graduate hours. Maximum of 9 undergraduate hours or 12 graduate hours. Prerequisite: THEA 212 or THEA 270.

**THEA 413 Creative Drama for Children**  credit: 3 hours.
THEA 414  **Theatre for the Child Audience**  credit: 3 hours.
Study of the history, objectives, and techniques of play production for the child audience; laboratory application. Prerequisite: Consent of instructor.

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 up 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. Prerequisite: Junior standing or above or consent of instructor.

THEA 418  **Social Issues Theatre**  credit: 3 OR 4 hours.
Research, writing, and production of original plays addressing selected health and social issues on the UIUC campus in cooperation with the Counseling and Health Center. Course emphasizes training in acting and in methods of peer education and discussion facilitation. Same as GWS 418. 3 undergraduate hours. 4 graduate hours. Maximum of 6 undergraduate hours or 8 graduate hours. Repeat and graduate students will be required to develop additional projects.

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 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. This course 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. This course may be repeated up to 4 hours. Prerequisite: THEA 231, THEA 232 and THEA 425.

THEA 438  **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 441  **Stage Mechanics, IV**  credit: 3 hours.
Advanced study in the design and construction of moving scenic elements. 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 449  **Fabrication and Crafts**  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 446.

THEA 451  **Stage Management**  credit: 4 hours.
Studies in the principles and the craft of stage management. Enrollment limited to Theatre majors. Prerequisite: Minimum of sophomore standing in a Theatre curriculum.

THEA 452  **Theatre 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  **Introduction to Properties**  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. This course may be repeated up 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: THEA 102, 108, 261 and junior, senior or graduate standing

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.

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 108, THEA 261, and junior, senior or graduate standing.

THEA 468  **Hist Theatre West Society, I**  credit: 3 OR 4 hours.
Examines the role of theatre in western culture as a reflection of economic, political, and social forces from its prehistoric origins through the Renaissance. 3 undergraduate hours. 4 graduate hours. Prerequisite: THEA 108, THEA 261 and junior, senior or graduate standing.

THEA 469  **Hist Theatre West Society, II**  credit: 3 OR 4 hours.
Examines the role of theatre in western culture as a reflection of economic, political, and social forces from the late Renaissance to the present. 3 undergraduate hours. 4 graduate hours. Prerequisite: THEA 108, 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 registration 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 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, or 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 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: 1 TO 8 hours.
Individual research in selected topics by arrangement with the instructor. 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: Roscoe L. Pershing
Program Office: 206 Engineering Hall, 1308 West Green, Urbana
Phone: 333-2280
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: Loren E. Bode
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: TSM 100.

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 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 430  **Project Management**  credit: 2 hours.
Same as ABE 430. See ABE 430.

TSM 435  **Elec Microcomputer 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 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.
Ukrainian

Slavic Languages and Literature
Head of Department: Harriet Murav
Department Office: 3080 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-0680

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

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 108  **Planning Policy and Law**  credit: 3 hours.
Case methods illustrate basic constitutional, statutory and judicial legal concepts and policy options with which professionals are involved including: environmental, social and economic planning.

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 218  **Politics of Environ Protection**  credit: 3 hours.
Integrated perspective on both environmental issues and the ways they are addressed within the American political system. Students examine the implications of politics, planning, and policymaking on the increasing awareness that human activities have a significant impact on the environment. Same as ENVS 218.

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 a department-approved agency of their own choice 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 or consent of instructor.

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: 3 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.
UP 407 provides students with an understanding of the fundamental concepts of fiscal planning at the state and local levels of government. It addresses both the theory and methods of state and local finance, but most importantly, it is focused on state and local fiscal policy. The course 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: Undergraduates must have 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 undergraduarate 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.
Course 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 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: Undergraduates must have senior standing.

UP 427  **Preservation Planning Workshop**  credit: 4 TO 6 hours.
Small group field work dealing with application of planning principles and techniques to actual preservation planning problems in a nearby community or area. May be repeated to a maximum of 12 hours. Prerequisite: Graduate standing and UP 420; or UP 347 and UP 420; or consent of instructor.

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. 6 undergraduate or graduate hours. May be repeated to a maximum of 12 hours. Prerequisite: Consent of instructor.

UP 429  **International Plan Practice**  credit: 3 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 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  **Ecological Numeracy**  credit: 3 hours.
Course develops skills of estimation, simple calculations and modeling to understand and participate in the debate about a wide range of environmental issues. Mathematical level does not exceed introductory calculus, but careful analysis is stressed along with limits, indirect effects, efficiency, dynamics and lags, and equity. Students should have two terms of science and one term of calculus. 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 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: UP 260 or graduate standing.

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 fieldwork. Prerequisite: Graduate standing, or completion of UP 347, or consent of instructor.

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  Cities, Societies & Planning  credit: 4 hours.
Explanations of how human settlements work as social, economic, ecological, and institutional phenomena; justifications for attributes of good cities; explanations of how planning works and justifications for circumstances in which planning is worthwhile. Course may not be repeated for credit. Prerequisite: Graduate standing in Urban Planning or consent of instructor.

UP 503  Site and Physical Planning  credit: 4 hours.
Provides grounding in the issues and principles underlying site and physical planning; lecture and discussion sessions are complemented by project work that applies principles and methods to a site. Course may not be repeated for credit. Prerequisite: Graduate standing in Urban Planning or consent of instructor.

UP 504  History of Planning Cities  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. This course may not be repeated for credit. Prerequisite: Graduate standing in Urban Planning or consent of instructor.

UP 505  Frameworks&Methods: 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. Course may not be repeated for credit. Prerequisite: Graduate standing in Urban Planning or consent of instructor.

UP 506  Frameworks&Methods: Evaluation  credit: 4 hours.
Frameworks and methods for evaluating actions and plans, including multiattribute, decision analysis, benefit cost, cost revenue, environmental and social indicators, and survey research applied to problems in transportation, land use, real estate, municipal finance, and international development. Focuses on theoretical basis and skills development sufficient to use methods effectively in deciding what to do. Prerequisite: Graduate standing in Urban Planning or consent of instructor.

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.
Course is an 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 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 506, 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 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 both letter and S/U grading. Prerequisite: Consent of instructor.

UP 594  Seminar  credit: 1 TO 6 hours.
Selected topics in urban and regional planning; several sections each term.

UP 595  Advanced Planning Workshop  credit: 6 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. Meets the capstone requirement for graduation. Prerequisite: Graduate standing in Urban and Regional Planning and consent of instructor.

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, 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. Completion of 8 hours for this course meets the capstone requirement. May be repeated in the same or separate terms to a maximum of 8 hours. Must complete 8 hours for grade. 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.
May be repeated. Approved for S/U grading only. Prerequisite: Graduate standing in Urban and Regional Planning, consent of instructor, and consent of the Department.
Veterinary Biosciences

Veterinary Biosciences
Head of Department: David R. Gross
Department Office: Veterinary Medicine Basic Sciences Building, Room 3516, 2001 South Lincoln Avenue, Urbana, IL 61802
Phone: 333-2506
www.cvm.uiuc.edu/vb/

VB 190  **Discovery Seminar**  credit: 1 TO 5 hours.
May be repeated.

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 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 350 or MCB 452, and VB 610 or equivalent.

VB 516  **Developmental Toxicology**  credit: 3 hours.
Same as ENVS 516. See ENVS 516.

VB 531  **Adv Reproductive Endocrinology**  credit: 3 hours.
Same as ANSC 531, and MCB 531. See ANSC 531.

VB 532  **Adv Reproductive Physiology**  credit: 3 hours.
Same as ANSC 532. See ANSC 532.

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 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: 4 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 453 and VB 620, or equivalent.

**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 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.**
Same as ENVS 596, and PATH 596. See PATH 596.

**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 renal, endocrine, and reproductive 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 gastrointestinal systems of domestic mammals. Some emphasis is placed on relevance to veterinary medicine. 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.
VCM 190  Discovery Seminar  credit: 1 TO 5 hours.
May be repeated.

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 511  Seminar in Prod/Pop Medicine  credit: 1 hours.
Same as VP 511. See VP 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 standing 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 Veterinarian 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.

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. 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 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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. 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  **Vet Clinical Med Consortium**  credit: 1.5 TO 6 hours.
Clerkship in small animal surgery for VM-4 professional students. May be repeated to a maximum of 6 hours. 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. 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. 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 626  Agribusiness in Vet Med  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.

VCM 627  Practice Management  credit: 1 hours.
(VCM 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 1  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 2  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 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 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 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 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.
This course 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.
This course is a continuation of VCM 637. It 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 642  **Your Veterinary Medicine**  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 personal finance and setting actionable goals. Approved for S/U grading only.

VCM 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.

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 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.

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 or third-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. 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 2  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 an 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 1  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 2  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.
(V C M 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 standing in the veterinary medicine curriculum.

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. This course 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. May be repeated up 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. May be repeated up to 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. May be repeated up 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. May be repeated to a maximum of 3 hours. Prerequisite: Fourth year standing or equivalent in the veterinary medicine 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 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.

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 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: 0 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.
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. Participation in language laboratory required. Same as AFST 241.

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. Participation in language laboratory required. Same as AFST 242. Prerequisite: WLOF 201.

WLOF 403  Intermediate Wolof I  credit: 4 OR 5 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. Participation in language laboratory required. Same as AFST 443. 5 undergraduate hours. 4 graduate hours. Prerequisite: WLOF 202.

WLOF 404  Intermediate Wolof II  credit: 4 OR 5 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. Participation in language laboratory required. Same as AFST 444. 5 undergraduate hours. 4 graduate hours. 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 tests 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: Marianne Kalinke
Department Office: 2090 Foreign Languages Building, 707 South Mathews, Urbana
Phone: 333-1288
www.german.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. Participation in the language laboratory is required. Same as AFST 252. Prerequisite: ZULU 201.

ZULU 403  Intermediate Zulu I  credit: 4 OR 5 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. Participation in the language laboratory is required. Same as AFST 451. 5 undergraduate hours. 4 graduate hours. Prerequisite: ZULU 202.

ZULU 404  Intermediate Zulu II  credit: 4 OR 5 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. 5 undergraduate hours. 4 graduate hours. Prerequisite: ZULU 403.