Fairmount College of Liberal Arts and Sciences

Department and Program Contacts
Anthropology, (316) 978-3195—Peer Moore-Jansen, chairperson; Keith Prufer, graduate coordinator
Biological Sciences, (316) 978-3111—David McDonald, chairperson; William Hendry III, graduate coordinator
Chemistry, (316) 978-3120—Dennis Burns, chairperson; William T.K. Stevenson, graduate coordinator
Communication, Elliott School of, (316) 978-3185—Susan S. Huxman, director; Patricia Dooley, graduate coordinator
Community Affairs, School of, (316) 978-7200—Paul Cromwell, director
Criminal Justice, (316) 978-5896—Michael Birzer, graduate coordinator
Ethnic Studies, (316) 978-6546—Anna Chandler, program director
Gerontology, (316) 978-6684—Mary Corrigan, graduate coordinator
Computer Science, (316) 978-3156—Rajiv Bagai, chairperson; Rodney Bates, graduate coordinator
Earth, Environment and Physical Sciences, (316) 978-3140—Wan Yang, graduate coordinator
English, (316) 978-3130—Margaret Dawe, chairperson, Christopher Brooks, graduate coordinator
Geology, (316) 978-3140—John Gries, chairperson; Wan Yang, graduate coordinator
History, (316) 978-3150—Judith Johnson, chairperson; John Dreifort, graduate coordinator
Liberal Studies, (316) 978-3358—David Soles, graduate coordinator
Mathematics, (316) 978-3160—Buma L. Fridman, chairperson; Kenneth Miller, graduate coordinator
Modern and Classical Languages and Literatures, (316) 978-3180—Eunice Myers, chairperson; Maria Akhrova, graduate coordinator
Philosophy, (316) 978-3125—David Soles, chairperson
Physics, (316) 978-3190—Elizabeth Behrman, chairperson; Hussein Hamdeh, graduate coordinator
Political Science, (316) 978-3165—David Ericson, chairperson
Psychology, (316) 978-3170—Charles Burdals, chairperson; Robert Zettle, graduate coordinator
Religion, (316) 978-3108—Stuart Larsen, director
Social Work, School of, (316) 978-7250—Linnea GlenMaye, director & graduate coordinator

Sociology, (316) 978-3280—Ron Matson, chairperson; David Wright, graduate coordinator
Urban and Public Affairs, Hugo Wall School of, (316) 978-7240—Ed Flentje, director
Public Administration, (316) 978-6693—Samuel Yeager, graduate coordinator
Urban Studies, Center for, (316) 978-7240—Ed Flentje, director
Women's Studies, (316) 978-3358—Ramona Liera-Schwichtenberg, chairperson

Graduate Certificate Contacts
Applied Communication, (316) 978-6105—Patricia Dooley, graduate coordinator
Economic Development, (316) 978-6693—Sam Yeager, graduate coordinator
Great Plains Studies, (316) 978-6764—Diane Quantic, program coordinator
Public Finance, (316) 978-6332—Sam Yeager, graduate coordinator

Anthropology (ANTH)
Graduate Faculty
Professors: Dorothy Billings, Donald Blakelee, Robert Lawless, Clayton A. Robarchek
Associate Professors: David Hughes, Peer Moore-Jansen (chairperson), Jacqueline Snyder
Assistant Professors: Keith Prufer (graduate coordinator)

The anthropology department offers a course of study leading to the Master of Arts (MA) degree.

Admission Requirements
Admission to the MA program in anthropology requires the completion of a minimum of 15 semester hours in anthropology to include courses in history and theory of anthropology and in the three main subdivisions of the discipline, and a grade point average in the last 60 hours of credit of 3.250 (on a 4.00 scale).

The deadline for application is February 1 for fall and Oct. 1 for spring. Prospective students are required to submit a written statement of purpose that addresses their intended area(s) of specialization. Applications will be reviewed by the entire faculty and accepted if there is a faculty member specializing in the applicant's area of interest and available to serve as graduate advisor.

Applicants will be notified of the faculty's decision by March 15 for fall admission or November 15 for spring admission.

Students deficient in any of the course prerequisites may be admitted conditionally pending removal of the deficiencies.

Degree Requirements
Only graduate students may enroll in 700- and 800-level courses for credit. All graduate students who have been required to take ANTH 647 “Theories of Culture” must successfully complete this requirement prior to enrolling in ANTH 746 “Advanced Cultural Anthropology.” Graduate enrollment in ANTH 770 “Independent Readings” requires successful completion of the corresponding core course of the particular area of focus, that is, ANTH 736 or 746 or 756. To enroll in ANTH 837 “Seminar in Cultural Anthropology,” graduate students must have taken 5 hours of graduate coursework in anthropology including ANTH 746 “Advanced Studies in Cultural Anthropology.”

To enroll in ANTH 820 “Seminar in Biological Anthropology,” graduate students must have taken 5 hours of graduate coursework in anthropology including ANTH 756 “Advanced Studies in Biological Anthropology.” To enroll in ANTH 801 “Seminar in Archaeology,” graduate students must have taken 5 hours of graduate coursework in anthropology including ANTH 736 “Advanced Studies in Archaeology and Ethnohistory.” To enroll in ANTH 871-2, ANTH 873-4, or ANTH 875-6, graduate students must successfully completed ANTH 736, 746, and 756 and have their final project (thesis, project, or internship) approved by their committee.

The MA degree in anthropology has three tracks.

Track 1 requires the completion of 30 semester hours, including the presentation of a thesis and comprehensive exams. At least 60 percent (18) of these hours must be in courses numbered 700 or above. The 30 hours must include a core course in archaeological anthropology (ANTH 736), cultural anthropology (ANTH 746), biological anthropology (ANTH 756), and two seminars.

Track 2 requires the completion of 33 semester hours, including the three core courses (ANTH 736, 746, and 756), two seminars, and the presentation of a thesis or approved project.

Track 3 requires the completion of 36 semester hours, at least 21 in anthropology including ANTH 736, 746, and 756, and two seminars. At least 12 from (in) other discipline(s) are also required. Either an examination or an internship is also required.

A total of 4 hours of thesis, project, or internship, to complete the 30, 33, or 36 semester hours requirements for each track shall include either 2 hours each of ANTH 871 and 872 (internship), ANTH 873 and 874 (project), or ANTH 875 and 876 (thesis). Students in all tracks are required to form a thesis/project/internship committee of at least two full-time graduate teaching faculty from within the anthropology department and at least one graduate faculty from another department. The committee approves proposals for and an oral defense of all theses, projects, and internships. Comprehensive exams are graded by all full-time teaching faculty in the department. All students who present a
thesis, project, or internship must pass an oral defense of their effort. A foreign language examination is contingent upon the nature of the thesis topic.

Examinations
Students in Track 1 are required to take the comprehensive examination and students in Track 3 may take it in consultation with their MA committee. (The comprehensive examination is not required for students in Track 2.) Students must have completed a minimum of 15 semester hours of graduate work in anthropology, including ANTH 736, ANTH 746, and ANTH 756, before taking the examination which is usually given during the fourth week of each semester. All graduate students taking the comprehensive examination must obtain the Packet for the Comprehensive Examination (PACE) from the department office for the detailed information on this requirement. Students are required to sign up for the comprehensive exam during the semester prior to taking it. Also, students must attend a comprehensive exam workshop during the semester prior to taking the exam.

Courses for Graduate/Undergraduate Credit

ANTH 502. Introduction to Archaeological Laboratory Techniques (1-3). Maximum of 3 hours. An introduction to the laboratory processing of archaeology materials. Direct experience in all phases of preparing excavated materials for analysis, including cleaning, restoring, preserving, numbering, and cataloging of ceramic and lithic artifacts and other remains. Prerequisite: ANTH 305.

ANTH 506. Peoples of the Pacific (3). General education further study course. A survey of the races, languages, and cultures of non-literate peoples of Polynesia, Micronesia, and Indonesia.

ANTH 508. Ancient Civilizations of the Americas (3). General education further study course. A cultural survey of the Aztec, Maya, and Inca. Prerequisite: instructor's consent.

ANTH 511. The Indians of North America (3). General education further study course. A survey of tribal societies and native confederations north of Mexico from the prehistoric through the historic period. Prerequisite: ANTH 102.

ANTH 515. China (3). General education further study course. An introduction to the people of China and aspects of their culture: economy, government, society, religion, and the arts. Historical attention on the many adjustments the Chinese made during the 20th century following political revolutions, industrialization, and expanding trade relations.

ANTH 516. Japan: People and Culture (3). General education further study course. An introduction to the culture of Japan including its history and prehistory, aspects of traditional culture and 20th century Japan, its economy, politics and social organization.

ANTH 519. Applying Anthropology (3). The application of anthropological knowledge in the solution of social problems in industry, public health, and public administration. Prerequisite: ANTH 102.

ANTH 522. Art and Culture (3). General education further study course. A survey of the visual and performing arts of non-western peoples with special attention to their relationships in the cultural setting. Prerequisite: ANTH 102.

ANTH 526. Social Organization (3). A survey of the varieties of social organization among peoples throughout the world. Deals with family systems; kinship; residence patterns; and lineage, clan, and tribal organizations. Prerequisite: 6 hours of anthropology.

ANTH 528. Medical Anthropology (3). General education further study course. Studies the health and behaviors of various human societies, especially in, but not limited to, those outside the western, scientific tradition. Covers attitudes toward the etiology of disease, the techniques of healing, the use of curative drugs and other agents, the roles of healers and therapists, and the attitudes of the community toward the ill. A library or field research project is required. Prerequisite: 3 hours of nursing or 3 hours of anthropology or instructor's consent.

ANTH 538. Early Man in the New World (3). A critical examination of facts and theories concerning early man in the New World from the peopling of the continent to the beginning of the Archaic Tradition, and of the role of cultural contacts between eastern Asia and North America. Prerequisite: ANTH 305.

ANTH 542. Women in Other Cultures (3). Deals with the place of women in primitive and other non-Western societies, in various aspects of culture: political, economic, social, religious, domestic, intellectual, psychological, and aesthetic. Compares and contrasts societies in order to see how different kinds of roles for women are related to different kinds of societies.

ANTH 555. Paleoanthropology and Human Paleontology (3). A detailed examination of human evolutionary history as evidenced by fossil remains and a survey of various interpretive explanations of the fossil record. Prerequisite: ANTH 101 or BIOL 203 or equivalent.

ANTH 557. Human Osteology (3). Deals with human skeletal and dental materials with applications to both physical anthropology and archaeology. Lecture and extensive laboratory sessions; includes bone and tooth identifications, measurement and analysis, and skeletal preservation and reconstruction. Individual projects are undertaken. Prerequisite: ANTH 101 or equivalent.

ANTH 597. Topics in Anthropology (3). Detailed study of topics in anthropology. Content varies with interest of instructor. Consult Schedule of Courses for current topic.

ANTH 600. Forensic Anthropology (3). Cross-listed as CJ 600. Encompasses the area of criminal investigation involving biological evidence: blood, hair, fingerprint, dentition, and skeletal system. Covers procedures of collection, preservation, marking, transportation, referral, laboratory analysis, classification, and identification emphasizing anthropological interpretation. Prerequisite: ANTH 101 or equivalent.

ANTH 602. Archaeological Laboratory Analysis (1-3). Students analyze archaeological materials, including ceramic, lithic, faunal, and vegetal remains according to accepted methods. Students learn to apply standard methods of identification and modes of interpretation to the materials to produce an acceptable archaeological report. Prerequisites: ANTH 502 and instructor's consent.

ANTH 606. Museum Methods (3). An introduction to museum techniques relating to the acquisition of collections and related procedures, such as accessioning, cataloging, documentation, presentation, and storage. Emphasizes current trends in museological philosophy concerning purpose, function, and relevance of museums, as well as career opportunities. Prerequisite: instructor's consent.

ANTH 607. Museum Exhibition (3). Contemporary philosophy of exhibition design and the application of recent concepts to the planning and installation of an exhibit. Prerequisite: ANTH 606 or instructor's consent.

ANTH 609. Biological Anthropology Laboratory Analysis (1-3). Analyzes biological anthropology materials including human and non-human skeletal material of both forensic contemporary or prehistoric origin according to standardized methods for recording and collecting data in biological anthropology. Learn methods of identification, analysis, and interpretation and prepare a standard technical report. Prerequisites: ANTH 101, 106, 356, or 557.

ANTH 611. Southwestern Archaeology (3). General education further study course. A comprehensive survey of the prehistoric, historic, and living cultures of the American Southwest particularly emphasizing the cultural continuities and changes covering 11,000 years. Prerequisite: one introductory course in anthropology or departmental consent.

ANTH 612. Indians of the Great Plains (3). An investigation of the cultural dynamics of the Great Plains area from the prehistoric period to the present. Prerequisites: 6 hours of anthropology and departmental consent.

ANTH 613. Archaeology of the Great Plains (3). General education further study course. The archaeology of the Great Plains area from earliest evidence to the historic period. Prerequisite: one introductory course in anthropology or departmental consent.

ANTH 647. Theories of Culture (3). A survey of the main theoretical movements in cultural anthropology, including both historical and contemporary schools of thought. Prerequisite: 6 hours of anthropology.
ANTH 651. Language and Culture (3). Cross-listed as LING 651 and MCLL 651. An introduction to the major themes in the interactions of language and society and language and culture, including ethnography of communication, linguistic relativity, and determinism; types of language contact; the linguistic repertoire; and cross-cultural discourse analysis. Content may vary with instructor. Prerequisite: 3 hours of linguistics or MCLL 351 or 6 hours of anthropology.

ANTH 690. Field Methods in Anthropology (3-6). A maximum of 6 hours can be counted as anthropology hours toward either degree. Instructs the student in archaeological and ethnological field methods through actual participation in a field research program. The project depends upon the specific Summer Session and varies from year to year. Prerequisite: instructor’s consent.

ANTH 736. Advanced Studies in Archaeology and Ethnohistory (3). Special area and theory problems in a historical approach to culture. Prerequisites: graduate standing and 6 hours of anthropology.

ANTH 746. Advanced Studies in Cultural Anthropology (3). Entails an in-depth coverage of selected topics in cultural anthropology, including social structure, economic and political organization, religion, personality, arts and knowledge systems, and current research methods. Prerequisites: graduate standing and 6 hours of anthropology, including ANTH 647 or equivalent as determined by the graduate coordinator.

ANTH 756. Advanced Studies in Biological Anthropology (3). In-depth coverage of selected topics in biological anthropology, including the history of evolutionary thought, human variation, growth and development, population dynamics, paleoanthropology, and primatology. Focuses on current issues, methods, and theory in biological anthropology. Prerequisites: graduate standing and 6 hours of anthropology (must include ANTH 103 or instructor’s consent).

ANTH 766. Advanced Studies in Cultural Anthropology (3). Intensive study of advanced theoretical questions in cultural anthropology. Repeatable up to 6 hours. Prerequisites: graduate standing and 5 hours of completed graduate coursework in anthropology (including ANTH 746).

ANTH 847. Colloquium in Anthropology (1-2). Seminar-style experience in recent research in all of the subfields of anthropology. All students attending presentations must receive 2 credits. Prerequisite: graduate standing in anthropology.

ANTH 848. Recent Developments in Anthropology (3). A review of the latest discoveries and interpretations in the science of human beings. Repeatable up to 6 hours. Prerequisite: 5 hours of anthropology.

ANTH 867. Independent Reading (2-3). Repeatable up to 6 hours. Prerequisite: departmental consent.

ANTH 870. Internship in Anthropology (2-2). Students following applied or multidisciplinary tracks, such as museums, international business education, or health professions receive professional work experience in their field through an internship at a designated workplace approved by departmental committee. Course need not require a tangible end product (e.g., paper, thesaurus, and/or visual production or exhibit). May be repeated, but limited to a total of 4 credit hours. Prerequisite: committee consent.

ANTH 871-872. Internship in Anthropology (2-2). In consultation with their major advisor and committee, students design a project (e.g., a museum exhibit, a written plan for an international business venture, a lesson plan for an anthropology unit in schools) that applies anthropological method and theory to the specific needs of an institution, group, or population. Requires a tangible end product (e.g., paper, thesaurus, and/or visual production or exhibit). May be repeated, but limited to a total of 4 credit hours. Prerequisite: committee consent.

ANTH 873-874. Advanced Project in Anthropology (2-2). Prerequisite: committee consent. Requires consultation with and approval by an appropriate faculty sponsor. Offered in the nondegree category. May, J. Karen L. Brown Sullivan

ANTH 875-876. Thesis (2-2). The Master of Science (MS) program offered by the Department of Biological Sciences provides an advanced education under either the research thesis option or nonthesis option. A variety of specializations in the broad areas of cell, molecular, endocrine, reproductive, and environmental biology are available. All incoming students are assigned to a temporary graduate advisor after which they choose a permanent graduate advisor and committee. The advisors work with the students to develop a program of studies that meets the students’ educational goals.

Master of Science and Areas of Specialization

The Master of Science (MS) program offered by the Department of Biological Sciences provides an advanced education under either the research thesis option or nonthesis option. A variety of specializations in the broad areas of cell, molecular, endocrine, reproductive, and environmental biology are available. All incoming students are assigned to a temporary graduate advisor after which they choose a permanent graduate advisor and committee. The advisors work with the students to develop a program of studies that meets the students’ educational goals.

Admission Requirements

Completed application forms and two official transcripts of all previous academic work must be submitted to the Graduate School according to published deadlines. Admission as a full standing student requires: (1) the completion of 24 semester hours in biological sciences and 15 semester hours in chemistry; (2) an overall grade point average of at least 2.750 (4.000 scale) for the most recent 60 semester hours completed; (3) a grade point average of at least 3.000 (4.000 scale) for all undergraduate biological sciences courses; (4) three letters of reference from science faculty; (5) receipt of GRE general aptitude and advanced test in biology scores; and (6) TOEFL scores if English is not the student’s first language. Students who do not meet these requirements but who wish to begin graduate coursework may qualify for conditional acceptance into a nondegree category.

Degree Requirements

All students are required to attend the departmental seminar course (BIOL 797) each semester and must give at least two oral presentations. The Master of Science (MS) program offered by the Department of Biological Sciences provides an advanced education under either the research thesis option or nonthesis option. A variety of specializations in the broad areas of cell, molecular, endocrine, reproductive, and environmental biology are available. All incoming students are assigned to a temporary graduate advisor after which they choose a permanent graduate advisor and committee. The advisors work with the students to develop a program of studies that meets the students’ educational goals. All students are required to attend the departmental seminar course (BIOL 797) each semester and must give at least two oral presentations.
BIOL 518. Biology of Aging (3). Cross-listed as GERO 518. An introduction to the phenomenon of aging, including a survey of age-related processes and mechanisms of senescence emphasizing humans. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: A basic course in biological sciences that satisfies general education requirements.

BIOL 524. Vertebrate Zoology (4). 2R; 4L. Evolution, distribution, systematic, natural history, and special characters of vertebrate animals. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with instructor. Prerequisites: BIOL 204 or 211 and CHEM 212; BIOL 527 is also recommended.

BIOL 526. Endocrinology (4). 3R; 3L. The hormonal regulation of bodily functions is considered in representative vertebrate systems, including humans. Students enroll in both lecture and laboratory portions of class. Students earning graduate credit submit a term paper on a topic chosen in consultation with the instructor. Prerequisites: BIOL 204 or 211 and CHEM 212.

BIOL 527. Comparative Anatomy (5). 3R; 4L. An intensive study of representative chordates emphasizing vertebrate anatomy. Students earning graduate credit complete additional assignments chosen in consultation with the instructor, such as a term paper based on technical literature, dissection of additional animals, etc. Prerequisites: BIOL 204 or 211 and CHEM 212.

BIOL 528. Parasitology (4). 2R; 4L. A study of the parasites of man and other vertebrate hosts. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisites: BIOL 204 or 211 and CHEM 212.

BIOL 530. Applied and Environmental Microbiology (3). A characterization of the roles of microbes in nature and man made environments. Discussions of microbial ecology and communities, interrelationships with higher organisms, biogeochemical cycling, biotechnology, and bioremediation. Students earning graduate credit produce an additional research paper based on primary literature on a topic chosen in consultation with the instructor. Prerequisites: BIOL 204 or 111 and CHEM 212.

BIOL 532. Entomology (4). 2R; 4L. An introduction to the morphology, physiology, life cycles, behavior, ecology, and economic significance of insects. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor or develop proficiency in a specific taxon by performing an individual systematic project. Prerequisites: BIOL 204 or 211 and CHEM 212.

BIOL 534. Mammalian Physiology (3). An introduction to mammalian—primarily human—physiology. Emphasizes nervous and endocrine control systems and the coordination of body functions. Students earning graduate credit submit a term paper based upon library research on a topic in mammalian physiology chosen in consultation with the instructor. Prerequisites: BIOL 204 or 211 and CHEM 531, or instructor's consent.

BIOL 535. Mammalian Physiology Laboratory (2). 4L. An empirical approach to mammalian physiology. Students seeking graduate credit submit an additional laboratory report relating the results of a laboratory experiment to those found in the current technical literature. Prerequisite or Corequisite: BIOL 534.

BIOL 540. Developmental Biology (4). 2R; 4L. Developmental processes in animals emphasizing vertebrates. Centered on the cell interactions controlling differentiation and morphogenesis. Students earning graduate credit complete additional assignments chosen in consultation with the instructor. Prerequisites: BIOL 204 or 211 and CHEM 212; BIOL 420 recommended.

BIOL 560. Plant Ecology (2). 2R. An examination of the relationship of plants to their environment at the organismal, population, community, and ecosystem levels. For graduate credit, a student must prepare and present a thirty-minute lecture over one of the topics covered in this course. Prerequisites: BIOL 418 and CHEM 212 or instructor's consent.

BIOL 572. Computer Methods in Biology (3). Includes mathematical modeling of biological systems, tools for recording and retrieving experimental results, computer-aided instruction, Internet and online science resources, software for scientific publication including digital photo-documentation and reference managers for bibliographies. Students select a biology topic of interest, study non-statistical and computer approaches previously used, and develop their own approach. Half the course is lectures and demonstrations and half is individual student projects. Graduate students are expected to have had prior experience with the primary literature and be prepared to execute a more sophisticated laboratory research project. Prerequisite: one of the following: BIOL 418, 419, 420, or instructor's consent.
credit perform an individual project on comparative community structure and report the results as a technical paper. Prerequisite: BIOL 418 or instructor's consent.

BIOL 578. Aquatic Ecology (4). 2R, 4L. Introduction to the biological and physical processes that operate in lakes, streams, and estuaries. Requires assigned readings, individual projects, and field trips. Students earning graduate credit investigate and compare the characteristics and properties of two freshwater ecosystems or investigate a specific taxon or trophic level in a freshwater ecosystem. The results of this investigation are reported as a technical paper. Prerequisite: BIOL 418 or instructor's consent.

BIOL 590. Immunobiology (3). The nature of antigens and antibodies and their interactions. Includes cellular and humoral aspects of immunologic phenomena. Students earning graduate credit prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisites: BIOL 204 or 211 and CHEM 531.

BIOL 595. Avian Biology (3). Presents birds (Class Aves) as models in contemporary animal behavior, physiological ecology, evolutionary biology, population ecology and conservation. The laboratory portion of the course teaches field identification of resident and migratory species by sight, song and call note on frequent field trips to a diversity of habitats, and culminates in a field survey of avian species diversity and abundance conducted by each student. Additional laboratory topics are bird banding, determination of age, sex, body lipid reserves, morphological measurement, and population census. Student-led discussions of current papers in avian biology are required, as is an all-day Saturday field trip during spring migration through the Central Flyway, which includes south-central Kansas. Graduate students must write a term paper on an approved topic in avian biology. Prerequisites: BIOL 204 or 211 and CHEM 212, or instructor's consent.

BIOL 610. Topics in Botany (3-4). Selected offerings in botany. Consult the Schedule of Courses for current offerings(s). Students wishing to enroll in courses not listed in the current Schedule must complete a Directed Independent Study Abstract form and obtain approval prior to enrollment. Students earning graduate credit prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: BIOL 418.

BIOL 640. Topics in Zoology (3-4). Selected offerings in zoology. Consult the Schedule of Courses for the current offerings(s). Students wishing to enroll in courses not listed in the current Schedule must complete a Directed Independent Study Abstract form and obtain approval prior to enrollment. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: BIOL 418.

BIOL 641. Topics in Evolutionary Biology (3). Introduction to the nature of antigens and antibodies and their interactions. Includes cellular and humoral aspects of immunologic phenomena. Students earning graduate credit prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: BIOL 418.

BIOL 646. Research in Biochemistry (3). Cross-listed as CHEM 669. S/U grade only. Students in the biochemistry field major participate in a biochemistry research project under the direction of a faculty member. Requires a written report summarizing the results. May be repeated once for credit. Prerequisites: BIOL 420 and CHEM 662 or 663.

BIOL 660. Topics in Microbiology (2-4). See BIOL 610. Prerequisite: BIOL 330 and instructor's consent.

BIOL 665. Pathogenic Microbiology (4). 2R, 4L. An introduction to the important pathogenic micro-organisms and their relationships to health and disease in humans. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisites: BIOL 204 or 211, CHEM 212 and instructor's consent.

BIOL 668. Special Topics in Biochemistry (3). Primarily for students who choose the biochemistry field major. Discusses a small number of current problems in biochemistry in depth. Requires reading published research papers in the field. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisites: BIOL 204 or 211, CHEM 662 and 663.

BIOL 669. Research in Biochemistry (2). Cross-listed as CHEM 669. S/U grade only. Students in the biochemistry field major participate in a biochemistry research project under the direction of a faculty member. Requires a written report summarizing the results. May be repeated once for credit. Prerequisites: BIOL 420 and CHEM 662 or 663, and CHEM 664 and instructor's consent.

BIOL 670. Glycobiology (3). Introduction to glycoprotein biosynthesis, structure, and function. Covers the various roles of carbohydrates in modifying protein structure and function. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: BIOL 420.

BIOL 700. Cancer Biology (3). The basic mechanisms of carcinogenesis will be covered by discussing the control of normal and abnormal cell growth in several model systems. Students earning graduate credit will also submit a term paper dealing with a specific topic to be determined by discussion with the instructor. Prerequisite: BIOL 420.

BIOL 730. Aquatic Toxicology (3). The qualitative and quantitative study of the fate and effects of toxic agents in the aquatic environment. Class examines the concentrations or quantities of chemicals that occur in the aquatic environment and includes a detailed study of the transport, distribution, transformation, and ultimate fate of various environmentally important chemicals. Class is for undergraduate or graduate students interested in advanced training in toxicology. Prerequisites: BIOL 525 or equivalent and CHEM 531 or equivalent, or instructor's consent.

BIOL 760. Experimental Molecular Biology (4). 2R, 6L. Introduces upper-level undergraduate and graduate students to molecular biology techniques. The methodology primarily involves the manipulation of DNA and the expression of genetic material in prokaryotic and eukaryotic systems. Prerequisite: BIOL 419 or 420.

BIOL 767. Mechanisms of Hormone Action (3). The mechanisms of action of several hormones is described and used to illustrate the major intracellular signal transduction pathways. Includes gonadotropin-releasing hormone, the glycoprotein hormones, luteinizing hormone, follicle-stimulating hormone, chorionic gonadotropin, thyroid-stimulating hormone, steroid hormones, thyroid hormone, activin/inhibin, prostaglandins, insulin, and growth hormone. Mostly lectures covering signal transduction pathways. Students write brief summaries of recent research papers related to the current week's lecture topics. Each student makes an oral presentation of a research paper in journal club format. Students earning graduate credit write a term paper describing in detail a hormone not described in class and its mechanism of action. Prerequisites: BIOL 420 and CHEM 662 or their equivalents, plus either BIOL 534 or 526 or their equivalents, and instructor's consent.

BIOL 780. Molecular Genetics (3). Studies the physiochemical nature of genetic material and the mechanisms of genetic regulation of metabolism. Students earning graduate credit produce a term paper and deliver a class seminar based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: BIOL 419 or 584.

BIOL 797. Departmental Seminar (1). Forum for the weekly presentation and discussion of the ongoing research projects performed by departmental faculty, graduate students, and guest scientists from outside departments and institutions. All MS degree-bound graduate students are required to attend the seminar each semester and must enroll for credit during the two semesters in which they give presentations that are the basis for their grade. One of these presentations may be their thesis defense. Prerequisite: acceptance into MS program.

Courses for Graduate Students Only

BIOL 890. Research (2-5). S/U grade only. Students performing research on their thesis projects should enroll for an appropriate number of hours. An oral presentation of the research results must be presented to the student's thesis committee before a grade is assigned.

BIOL 891. Thesis (2). S/U grade only. Students must be enrolled in this course during the semester in which the thesis is defended.
Chemistry (CHEM)

Graduate Faculty


Associate Professor: David M. Eichhorn, Michael J. Van Stipdonk

Assistant Professors: James G. Barn

The Department of Chemistry at Wichita State offers courses of study leading to the Master of Science (MS) and the Doctor of Philosophy (PhD) degrees in the areas of biochemistry and analytical, inorganic, organic, physical and polymer chemistry.

Admission Requirements

To enroll in the graduate program in chemistry, students must follow the admission procedures required by the Graduate School. The chemistry department requires a baccalaureate degree in chemistry, a grade point average of at least 3.000/4.000 (both overall and in chemistry), two letters of recommendation from individuals familiar with the applicant’s academic background, a one-page typed statement of goals and research interests, and submission of test scores from the general GRE exam. The department strongly recommends test scores from the chemistry subject GRE as well. International students must have a minimum TOEFL score of 550 paper-based, 213 computer-based, or 79 Internet-based. Applicants whose transcripts do not explicitly list the chemistry courses which they have taken must submit an official description of the courses which comprise their chemistry degree. Students deficient in any of the requirements may be admitted conditionally provided they follow the specified procedures required to remove any deficiencies.

Applications are reviewed as completed throughout the year.

Assessment Exam Requirements for the MS and PhD Degrees

All entering Master of Science and Doctor of Philosophy students are required to take analytical, inorganic, organic, physical chemistry and biochemistry assessment exams in their first semester in the program. Both MS and PhD students must receive a pass or remove deficiencies in four of the subject areas listed above within the first year in the program. Deficiencies may be removed by enrolling in an appropriate course designated by the Graduate Affairs Committee and passing with a B or better grade. Assessment exams are given three times a year—fall, spring, and summer.

Master of Science Requirements

The MS degree in chemistry requires the completion of 30 credit hours, including the presentation of a thesis based on original research. The program requires at least 6 credit hours in research, CHEM 990. Also, at least 15 credit hours in chemistry courses numbered above 701 must be taken, including at least one course from four of the following six areas: analytical chemistry, inorganic chemistry, organic chemistry, physical chemistry, biochemistry, and polymer chemistry. Students must successfully complete CHEM 700 once, and full-time students must register each semester in CHEM 701. Additional courses, which may be outside the major field, are selected by students in consultation with their advisor and the department’s advisory committee.

Thesis. The thesis is reviewed by a committee from the department, and an oral examination given by a faculty committee appointed by the Graduate School must be passed.

Students must select a faculty member to be their research advisor by the beginning of their second semester in the graduate program.

Doctor of Philosophy Requirements

All PhD students are required to take 24 course hours, of which 12 must be in the area of major interest, and 9 of the remaining 12 must be from two of the other five areas. The courses must be numbered higher than 701. Students are required to begin cumulative examinations at the beginning of their second year. Students must pass six cumulative examinations out of 16 attempts to remain in the program. During their fifth semester, students are expected to develop and orally defend an original research proposal. Two enrollments in departmental seminar (CHEM 700) and continuous enrollment in departmental colloquia (CHEM 701) are required. The final requirement for the degree is the defense of a dissertation based on original research. Well-prepared entering students should be able to complete the requirements within four years.

Dissertation. The dissertation is reviewed by a committee from the department, and an oral examination given by a faculty committee appointed by the Graduate School must be passed. Students must select a faculty member to be their research advisor by the beginning of their second semester in the graduate program.

Students in the PhD program in good standing, who have completed all required courses, have satisfactorily presented their Departmental Research Seminar, have defended their Creative Research Proposal, and have satisfied all other requirements for admittance to candidacy for the PhD degree, will upon request and approval by the student’s committee be awarded the MS degree.

Courses for Graduate/Undergraduate Credit

CHEM 514. Inorganic Chemistry (3). General education further study course. Basic inorganic chemistry emphasizing molecular symmetry and structure, fundamental bonding concepts, ionic interactions, periodicity of the elements, systematics of the chemistry of the elements, acid-base chemistry and non-aqueous solvents, classical coordination chemistry, and introductory bioinorganic chemistry. Prerequisite: CHEM 212 with a C or better.

CHEM 523. Analytical Chemistry (4). 2R; 6L. Lab fee. General education further study course. Evaluation of data; theory and application of gravimetric analysis and precipitation, neutralization, and oxidation-reduction volumetric analysis. Prerequisite: CHEM 212 with a C or better.

CHEM 524. Instrumental Methods of Chemical Analysis (4). 2R; 6L. Lab fee. Introduction to electroanalytical chemistry and optical method of analysis and separation of complex mixtures, both inorganic and organic. Also discusses basic computer programming as it applies to analytical chemistry. Prerequisite: CHEM 523.

CHEM 531. Organic Chemistry I (5). 3R; 6L. Lab fee. General education further study course. An introduction to the study of carbon compounds emphasizing reaction mechanisms, stereochemistry, and spectrographic analysis. Prerequisite: CHEM 212 with a C or better.

CHEM 532. Organic Chemistry II (5). 3R; 6L. Lab fee. A continuation of CHEM 531 emphasizing the structure and reactions of principal functional groups and compounds of biological interest. Prerequisite: CHEM 531 with a grade of C or better.

CHEM 546. Physical Chemistry I (3). General education further study course. Kinetic theory, kinetics, transport phenomena, quantum theory, spectroscopy, and statistical thermodynamics. Prerequisites: CHEM 212 with a grade of C or better, one year of college physics, and MATH 344 or its equivalent.

CHEM 547. Physical Chemistry Laboratory (2). 6L. Lab fee. Physical chemistry experiments that illustrate principles learned in CHEM 546 and 548. Prerequisite or Corequisite: CHEM 546.


CHEM 603. Industrial and Polymer Chemistry (3). Bridges the industrial-academic gap. Includes petroleum refining processes and distillation technology. Inorganic topics include glass technology, electro-refining and electroplating, and battery chemistry. Discusses cellulose(biomass)-based products such as gelling polysaccharides and natural fibers along with industrial adsorbents (clays, zeolites, ion exchange...
resins, carbon blacks), and emulsion technology. Topics in polymer chemistry include ways of making polymers, resins, elastomers, and synthetic fibers; methods of polymer analysis, structure-property correlations (how structure influences physical properties); plastics recycling, and methods of plastics and composites processing. Prerequisite or Corequisite: CHEM 532.

CHEM 605. Medicinal Chemistry (3). For students interested in chemistry related to the design, development, and mode of action of drugs. Course describes those organic substances used as medicinal agents and elucidates the mode of action and chemical reactions of drugs in the body; illustrates the importance and relevance of chemical reactions as a basis of pharmacological activity; drug toxicity, allergic reactions, carcinogenicity, etc.; and brings about a better understanding of drugs. Includes transport, basic receptor theory; metabolic transformation of drugs; discussion of physical and chemical properties in relation to biological activity; drug design, structure-activity relationships, and discussion of a select number of organic medicinal agents. Prerequisites: CHEM 532 or equivalent; a semester of biochemistry (CHEM 661 or 662) and a year of biology are strongly recommended.

CHEM 615. Advanced Inorganic Chemistry (3). Includes modern bonding theories, structure and spectra of inorganic compounds, coordination and organometallic chemistry, boranes, inorganic ring systems and polymers, inorganic environmental chemistry, mechanisms of inorganic reactions, and solid state chemistry. Prerequisites: CHEM 514 and 546.

CHEM 616. Inorganic Chemistry Laboratory (2). 6L. Lab fee. Experimental methods of inorganic chemistry. Prerequisite or Corequisite: CHEM 615.

> CHEM 661. Introductory Biochemistry (3). General education further study course. An introductory course for chemistry majors including chemistry/business majors and students in life sciences. Not recommended for the BS in chemistry for health sciences or biochemistry field majors for whom CHEM 662 and 663 are required. Introduces thermodynamics and biological oxidation-reduction reactions; structure, metabolism, and synthesis of proteins, hydrocarbons, lipids, and nucleic acids; enzyme kinetics, photosynthesis, and transfer of genetic information. Prerequisite: CHEM 532.

CHEM 662. Biochemistry I (3). Study of major constituents of the cell: protein, carbohydrate, glycoprotein, lipid, nucleic acid, nucleoprotein; enzyme catalysis; biological oxidations; photosynthesis; and introduction to intermediary metabolism. A fundamental background of biology or microbiology is recommended but not essential. Prerequisites: CHEM 523 and 532 or equivalents.

CHEM 663. Biochemistry II (3). Study of metabolism and control of carbohydrates, lipids, phosphoglycerides, spinogolipids, sterols, amino acids and proteins; synthesis of porphyrins, amino and polypeptides; synthesis and metabolism of purines, pyrimidines, and nucleotides; synthesis and structure of DNAs, RNAs and proteins; organization and functioning of genes; evolution of proteins and nucleic acids; hereditary disorders of metabolism; biochemistry of endocrine glands; major nutrients and vitamins; body fluids and generalized tissues. A fundamental background of biology or microbiology is recommended but not essential. Prerequisite: CHEM 662.

CHEM 664. Biochemistry Laboratory (3). 1R; 6L. Lab fee. Practical training in biochemical procedures and literature searching; experiments include isolation, characterization and assay of biomolecules and use of centrifugation, chromatography, electrophoresis, spectrophotometry, enzyme kinetics, and radioactive labeling techniques. Should be taken concurrently with CHEM 662 or CHEM 663. Prerequisite: CHEM 532 or equivalent.

CHEM 666. Special Topics in Biochemistry (3. (Offered fall semester in even-numbered years.) Discusses a small number of current problems in biochemistry in depth. Requires reading of published research in the field. Prerequisites: BIOL 211 and CHEM 662 and 663.

CHEM 669. Research in Biochemistry (2). Cross-listed as BIOL 669. S/U grade only. Students in the biochemistry field major participate in a biochemistry research project under the direction of a faculty member. Requires a written report summarizing the results. May be repeated once for credit. Prerequisites: BIOL 420 and CHEM 662 or 663, and CHEM 664 and instructor's consent.

CHEM 690. Independent Study and Research (2-3). Studies performed must be directed by a faculty member in the Department of Chemistry. Repeatable for credit. A maximum of 3 credit hours may be counted toward graduation. Prerequisite: departmental consent.

CHEM 700. Chemistry Seminar (1). S/U grade only. Students give seminars on either papers recently published in the literature or on their own research. Repeatable for credit.

CHEM 701. Chemistry Colloquium (1). S/U grade only. Speakers for the colloquium consist of outstanding chemists from other institutions and faculty. Repeatable for credit.

CHEM 704. Environmental Science Colloquium (1). Cross-listed as GEOL 704. Students in the master's program in environmental science are required to enroll each semester (maximum 4 credit hours). Includes presentations by guest speakers and required readings for class discussion. May also include student involvement in environmentally related community groups and projects.

CHEM 706. Environmental Science Internship (3-4). Cross-listed as GEOL 706. Students in the master's program in environmental science may gain interdisciplinary skills in environmental science by participating in applied and/or basic research internships projects with local business, industry, or government agencies. Internship option is an alternative to thesis research for degree requirements. Enrollment in internship projects requires an approved proposal. Completion of an internship for graduation requires a formal oral presentation of the internship activity and a written report. Prerequisites: CHEM 702 and 703.

CHEM 709. Special Topics in Chemistry (2-3). A discussion of topics of a special significance and interest to faculty and students. Offerings announced in advance. Repeatable for credit.

CHEM 712. Coordination Chemistry (3). The study of the synthesis, characterization, and properties of coordination compounds. Includes nomenclature, fundamental bonding concepts, principles of synthesis, mechanisms of substitution and electron transfer reactions, catalysis, and solid-state phenomena. Prerequisite: CHEM 615 or equivalent.

CHEM 713. Physical Methods in Inorganic Chemistry (3). An introduction to electronic and vibrational spectroscopy, magnetic susceptibility, EPR, NMR, Mossbauer spectroscopy, and X-ray crystallography as applied to inorganic systems. Emphasis on interpretation of results for understanding the electronic and molecular structure of compounds.

CHEM 717. Physical Organic Chemistry (3). Discussion of advanced topics in stereochemistry and conformational analysis and organic reaction mechanisms. Prerequisite: CHEM 532.

CHEM 722. Advanced Organic Synthesis (3). Discussion of modern synthetic methods in organic chemistry, including carbon-carbon forming reactions, oxidation and reduction reactions, protective groups, and organometallic chemistry. Prerequisite: CHEM 532.

CHEM 738. Structure Determination and Spectral Analysis of Organic Compounds (3). Discusses chromatographic techniques, infrared, ultraviolet, nuclear magnetic and electron spin resonance and mass spectroscopy, and their practical utilization in structure determination. Prerequisite: CHEM 532.

CHEM 744. Computational Quantum Chemistry (3). An introduction to molecular orbital procedures and methods for calculating a wide range of physical, chemical, and electronic properties of systems large enough to be of interest to inorganic, organic, and biochemists. Using commercial molecular orbital software programs such as MOPAC, SPARTAN, and GAUSSIAN, students learn to select appropriate “model” computational procedures to predict properties of molecules and reactions. By comparison with experiment, students learn to assess the range of applicability and accuracy of the “model” methods as applied to various categories of chemical systems. Properties considered include energies and structures of molecules, ions, and transition states; vibrational frequencies, IE and RAMAN spectra; thermochemical properties, heat of formation, bond and reaction energies, isomerization energy barriers; reaction pathways; molecular orbitals, atomic charges, dipole and multipole moments, ionization potentials, bond orders; orbital energies and photoelectron spectroscopy; excited state properties, singlet and triplet surfaces. Prerequisite: CHEM 546 or equivalent (MATH 344 is necessary.)
CHEM 751. Chain Growth Polymerization (3). Mechanisms, kinetic, and thermodynamic aspects of polymerization processes which proceed by a chain growth mechanism, free radical, anionic, cationic, and metalloene catalysts. Prerequisites: CHEM 531 and 548.

CHEM 752. Step Growth Polymerization (3). Polymerization process which proceeds by a step growth or ring-opening mechanism. Preparation of thermoplastics, including relationships between molecular weight and reaction condition. Preparation of thermosets including relationships between structure, conversion, and gelation. Discusses individual systems such as nylon, epoxy resins, and polyimides in detail. Prerequisites: CHEM 531 and 548.

Courses for Graduate Students Only

CHEM 809. Special Studies in Chemistry (2-3). Systematic study in selected areas of chemistry. Repeatable for credit. Course content differs from one offering to the next.

CHEM 815. Bioinorganic Chemistry (3). The study of the role of inorganic chemistry in biological systems. Includes electron transport, biological catalysis mediated by metal ions, metal storage and transport, ion transport, and the role of transition metals in metabolism. Prerequisites: CHEM 615 and 663 or equivalents.

CHEM 823. Analytical Spectroscopy (3). Absorption (UV-visible, IR, and atomic); emission; flame emission and atomic absorption spectrometry, molecular fluorescence, and phosphorescence methods; Raman, nuclear magnetic resonance, and electron spin resonance spectroscopy; X-ray methods. Lectures and discussions on theory and practice. Particular emphasis on instrumentation and the acquisition of artifact-free data. Prerequisite: CHEM 524 or equivalent.

CHEM 824. Electroanalytical Chemistry (3). Includes voltammetry, polarography, chronoamperometry, and coulometry; reversible and irreversible diffusion controlled processes; CE (chemical reaction before electrical reaction), EC (electrical reaction before chemical reaction), and catalytic reaction; and organic polarography and voltammetry. Prerequisite: CHEM 524 or equivalent.

CHEM 835. Bioorganic Chemistry (3). Includes the chemistry of amino acids and peptides, enzyme structure and function, and inhibitor design. Prerequisites: CHEM 662, 663, 732, or 662 and concurrent enrollment in 663 and 732.

CHEM 842. Chemical Kinetics (3). A description of reacting systems, including the mathematical and experimental characteristics of simple and complex kinetic systems. Discusses the theories of chemical kinetics, as well as the kinetics of homogeneous reactions in the gas phase, the kinetic aspects of solution reactions, heterogeneous reactions, and selected topics of current interest. Prerequisite: CHEM 548 or equivalent.

CHEM 843. Statistical Thermodynamics (3). Develops Boltzmann, Fermi-Dirac, and Bose-Einstein statistical mechanics with applications to gaseous-state and solid-state chemical problems. Emphasizes the relationship of statistical mechanics to thermodynamics. Considers applications of statistical thermodynamics to polymers. Prerequisites: CHEM 548 and 845 or equivalents.

CHEM 852. Techniques of Polymer Characterization (3). A study of physical, spectroscopic, and diffraction techniques to determine the size, structure, and morphology of polymers.

CHEM 853. Polymer Properties (3). Kinetics and thermodynamics of the crystallization process and the influence of sample history on the gross morphology of the crystallites. Structural features which preclude the development of polymer crystals and encourage amorphous character, relationships between structure, Tm and Tg, theoretical strengths of materials, the time dependent mechanical behavior of polymers, and the Maxwell and Voigt models of viscoelasticity. The Boltzmann superposition principle and how it can be used to predict creep behavior, mechanisms of deformation, yielding and fracture in polymers. Prerequisite: degree in chemistry or related subject.

CHEM 861. Enzyme Mechanisms (3). An introduction to the study of enzyme mechanisms. Modern approaches include steady-state, relaxation, and chemical modification methods. Prerequisite: CHEM 662 or 663 or equivalent.

CHEM 863. Analytical Biochemistry (3). A review of modern analytical methods used in biochemistry and molecular biology including absorbance and fluorescence spectroscopy, chromatography (affinity, gel-filtration, HPLC, ion-exchange, ion-pair), gel electrophoresis, radioactive tracer methods; cloning, sequencing, and recombinant DNA procedures. Prerequisites: BIOL 210 and 211 and CHEM 662 or 663 or equivalent.


CHEM 890. Research in Chemistry (2-12). S/U grade only. Research for the student planning to receive an MS. Research is directed by a faculty member. Repeatable for credit.

CHEM 990. Research in Chemistry (2-14). S/U grade only. Research for the student planning to receive the PhD. Research is directed by a faculty member. Repeatable for credit.

Communication, Elliott School of (COMM)
Other Courses. In addition to the required courses, students, with the advice and consent of their faculty advisor, must select courses to complete the Plan of Study, as discussed in the Graduate School section of the Graduate Catalog. The Plan of Study will be individually designed to accommodate a student’s background, interests, and needs and must include a minimum of 60 percent of their graduate hours at the 700-899 level.

Examinations
Written comprehensive examinations will be administered to all candidates during the final semester of their degree program. In addition, students writing a thesis will present an oral defense of the thesis.

Graduate Certificate in Applied Communication
Designed for students who want concentrated study in communication skills, the Graduate Certificate in Applied Communication is awarded for the successful completion of a program totaling 14 credit hours of graduate course work selected from a prescribed subset of courses. The curriculum is integrated by a 2-hour foundation course and a more advanced course in organizational communication. The remaining 9 credit hours of course work are chosen from a group of elective courses in speaking, writing, and visual communication. An applicant for the program must meet WSU Graduate School Category A requirements. In addition, students whose first language is not English must achieve a TOEFL score of at least 600 paper-based, 250 computer-based, or 100 Internet-based.

Courses for Graduate/Undergraduate Credit
COMM 500. Advanced Reporting (3). 1R–4L. For juniors and seniors; the techniques of reporting and writing the more complex and important types of news stories. Covers police beat stories, sports, and economic reporting; includes the study and practice of journalistic interviewing. Prerequisites: junior standing, COMM 301 with a C or better, and either 401 or 422.

COMM 502. Public Information Writing (3). Uses basic journalistic skills of clear, precise writing to communicate effectively with various audiences. Students write press releases, speeches, and popularizations of complex documents. Techniques learned are valuable in writing grant proposals, committee reports, pamphlets, and journal articles. Prerequisites: COMM 301 with a C or better, junior standing, or departmental consent.

COMM 510. Editing for Print (3). Selection, evaluation, and preparation of copy and pictures for publication. Covers copy editing, rewriting, headline and caption writing, and page layout. Prerequisites: junior standing and COMM 301 with a C or better.

COMM 511. Strategic Communication in Organizations (3). Emphasizes the importance of effective communication in building meaningful relationships, grooming civic leadership and producing marketable employees. Human communication skills taught include: how to give effective presentations, facilitate small group discussions, handle conflict, manage diverse constituencies at various levels of organizational, interpersonal, small group, public and contemporary topics and issues. Prerequisite: COMM 130 or instructor’s consent.

COMM 525. Advertising Copywriting (3). Detailed practice at writing various kinds of advertising copy; including print and broadcast forms. Emphasizes terse, precise writing that evokes response sought by advertiser. Prerequisites: COMM 324 and COMM 301 with a C or better or departmental consent.

COMM 526. Media Buying and Selling (3). Principles, methods, and strategies of buying and selling media for advertising, including study of reach and frequency of the various mass media and specialized media, budgeting, research, rates, market share, and other tools of current buying and selling strategies. Prerequisite: COMM 324 or instructor’s consent.

COMM 550. Opinion Writing (3). Studies editorial judgment, including practice in the writing of print, broadcast, and electronic opinion pieces, and the examination of traditional and new technology research materials available to opinion writers. Prerequisites: COMM 301 with a C or better and junior standing.

COMM 571. Feature Writing (3). Writing features for newspapers and magazines. Nonfiction topics may include personal experience essays, consumer pieces, travel articles, and personality profiles. Prerequisites: COMM 301 with a C or better and junior standing.

COMM 581. Communication Practicum (1-3). Application of theory, principles, and practices to professional settings where students work under instructor supervision to continue their professional preparation in various areas of media and communication. Prerequisites: COMM 301 and instructor’s consent.

COMM 604. Video Storytelling (3). Application of video equipment and techniques for field productions. Execution of visual and audio expression in relation to production video productions in a field setting. Prerequisite: COMM 304 or instructor’s consent.

COMM 609. Interactive Media Production (3). Investigation and application of production techniques for educational and instructional broadcasting, emphasizing television. Prerequisite: COMM 304.

COMM 612. Scholastic Journalism Instructional Strategies (3). Assists those who are preparing to advise and teaches who currently supervise a student newspaper or yearbook. Emphasizes techniques for teaching various forms of writing and design, duties relating to production and finance of school publications, and methods to help students become better communicators. Prerequisite: COMM 301 with a C or better or instructor’s consent.

COMM 622. Studio B: Live Television News (3). Reporting and writing about events in the university and community. Story assignment and preparation under the instructor’s guidance; story broadcast over WSU Cable Channel 13. May be repeated for credit with advisor’s consent. Prerequisite: COMM 422 or instructor’s consent.

COMM 626. Integrated Marketing Communications Campaigns (3). Instruction and practice in planning and developing integrated advertising and public relations campaigns. Teaches students to perform a situation analysis, identify objectives, develop strategies and tactics, and write a plans book, as well as produce advertising and public relations campaign materials. Prerequisites: COMM 324 and 525 or instructor’s consent.

COMM 633. Senior Honors Project (3). For undergraduates seeking Departmental Honors in communication. An individual written and oral project, including a review of literature, methodology, and critical analysis on a communication topic approved by the instructor. Prerequisites: senior standing; minimum GPA of 3.500; COMM 430, 535, 630, 631; and departmental consent.

COMM 635. Leadership Techniques for Women (3). Cross-listed as WOMS 635. Provides the female student experience in decision making and improves skills in leadership through role playing and exercise in group dynamics.

COMM 636. Advanced Public Speaking (3). Skills development in a variety of advanced presentational methods, including speaking from a TelePrompTer, using PowerPoint technology, spokesperson/press conference speaking, conducting a training session, formal manuscript speaking, after dinner speaking, and writing a speech for another person. Prerequisite: COMM 255.

COMM 640. Issues in Corporate Communication (3). Examines how corporations craft messages that are persuasive to their various publics. Special attention to how companies use communication strategies to cope with situations that threaten their reputations.

COMM 650. Communication Training and Development (3). An examination of communication concepts, processes, technologies, and strategies related to training and development. Includes the application of these elements to formal instruction across disciplines and at various educational levels as well as in most professional training settings.

COMM 660. Seminar in Communication (1-3). Special seminars dealing with current problems, issues, or interests in various areas of communication. Repeatable for credit in different topics only.

COMM 661. Directing the Forensics Program (3). A study of the methods and procedures in coaching and directing the high school and collegiate forensic programs (debate and individual events). The future teacher is made aware of the literature and professional organizations in the field.
COMM 675. Directed Study (1-3). Individual study or projects. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

COMM 690. Communication Internship (1-2). Cross listed as THEA 675. Credit for professional experience that integrates theory with a planned and supervised professional experience designed to complement and enhance academic program. Individualized programs must be formulated in consultation with and approved by appropriate faculty sponsors. May be repeated, but limited to a total of 4 credits in COMM 481 and COMM 690. Graded CR/NC. Prerequisite: departmental consent.

COMM 712. Advanced Interpersonal Communication (3). Advanced exploration of concepts and variables in interpersonal communication through the study of different theories as well as practical experiences in dyadic and small-group communication. Prerequisite: COMM 302 or instructor’s consent.

COMM 720. Dimensions of Mass Communication (3). A detailed study of mass media, their role as social institutions; their control, support, content, and audience; and their effects.

COMM 722. The Art of Conversation (3). Conversation is the form of communication people engage in most naturally and frequently, but about which they seldom think seriously. Helps participants enhance their understanding and appreciation of, as well as their skill in, the art of conversation. Includes the nature of conversation, principles of conversational communication, types of conversation, conversation in the media, and conversation analysis. Prerequisites: COMM 302 and junior standing or departmental consent.

COMM 750. Workshops in Communication (1-4).

COMM 770. The Audience (3). Application of research techniques to the measurement of audience behavior emphasizing mass media audiences. Includes focus group interviews, survey research, and radio and television ratings.

Courses for Graduate Students Only

COMM 801. Introduction to Communication Research (3). An integrative approach to an understanding of the nature and scope of communication research and graduate studies in communication and theatre/drama. Provides an overview of current research in the discipline. Instruction in the basic steps of research; availability of library and other sources; bibliographic search; computer accessing of source materials; organization, style, and format of a research report and citation of sources in accordance with standard style guides. Should be taken at the beginning of the graduate program.

COMM 802. Historical and Qualitative Methodologies in Communication Research (3). An introduction to historical, critical, and observational methodologies in communication research. Emphasizes historical, critical, and observational research, particularly those forms of research common to communication studies. Prerequisite: COMM 801.

COMM 803. Empirical/Quantitative Research Methodology in Communication (3). An introduction to empirical research methods in communication. Emphasizes both experimental and nonexperimental research, particularly those forms of research common to communication studies. Studies research design, methods, and reporting techniques. Prerequisite: COMM 801.

COMM 812. Contemporary Theories of Communication (3). Studies selected conceptual models useful in the academic study of human communication, including theories involving such contexts as interpersonal communication, public communication, and mass communication.

COMM 820. Investigation and Conference (1-3). Cross-listed as THEA 820. Directed research and experimentation for graduate students in some phase of (a) speech communication, (b) electronic media, or (c) speech education. Repeatable for credit up to a total of 6 hours.

COMM 825. Group Communication (3). Examines communication processes that operate in groups in various contexts. Provides an overview of relevant theory, as well as methodologies through which group communication may be critically analyzed in applied settings.

COMM 860. Seminar in Communication (1-3). Special seminars dealing with current problems, issues, or interests in various areas of communication. Repeatable for credit in different topics only.

COMM 865. Organizational Communication (3). Cross-listed as MGMT 865. An analysis of communication models emphasizing their applications to communication problems in organizations. Explores social psychological processes underlying persuasion in interpersonal relations and through the mass media. Critically analyzes communication systems and techniques within formal organizations.

COMM 870. Directed Study (1-3). Individual study or projects. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

COMM 875-876. Thesis (1-3-1-3). Prerequisite: departmental consent.

Community Affairs, School of

The School of Community Affairs, created in 1999, brings together the programs of criminal justice, ethnic studies, and gerontology to form a unique and diverse curriculum to better serve the needs of students to work in an ever-changing urban and global community. Additionally, the Midwest Criminal Justice Institute (MCJI) and the Regional Community Policing Training Institute (RCPTI) provide opportunities to blend teaching, research, and service. As a result, the School of Community Affairs not only serves as a quality educational unit for students, but also functions as a research and service unit that assists with a broader range of needs identified in the community.

Criminal Justice (CJ)

Graduate Faculty
Professors: Paul Cromwell (director, School of Community Affairs), Michael Palmiotto
Associate Professors: Andrea Bannister (director, RCPTI), Ronald G. Iacovetta, Delores Craig-Moreland, Martha Smith, Brian Withrow (director, MCJI, and the forensic science program)
Assistant Professor: Michael Birzer (graduate coordinator)

Master of Arts in Criminal Justice

Admission Requirements

The Master of Arts in Criminal Justice (MACJ) at Wichita State University is housed in the School of Community Affairs. It is one of the nation’s oldest criminal justice graduate degree programs. Intended to advance learning beyond the more general undergraduate educational curriculum, the MACJ expands the knowledge base of both graduating seniors and the administrative capacity of working professionals to optimally perform in their chosen careers in criminal justice.

In addition to the Graduate School admission requirements, applicants must submit (1) three letters of reference from people acquainted with the applicant’s background and potential; (2) a brief autobiographical statement describing particular interests, experiences, and goals related to academic and professional work in criminal justice; and (3) scores on the Graduate Record Exam (GRE: verbal and quantitative).

Applicants are evaluated with respect to (1) undergraduate grade point average (a minimum GPA of 3.000 based on the last 60 hours required for consideration of admission to degree status); (2) amount, type, and scope of undergraduate preparation; (3) reference letters; and (4) GRE scores. Final recommendation on a candidate’s admission to the MACJ program is made to the Graduate School by the graduate coordinator of the criminal justice program.

Degree Requirements

The MACJ degree requires a minimum of 36 hours, including 27 hours taken in courses numbered 700 or above.

Core Curriculum. All degree candidates are required to complete CJ 802, 893, 894, and 897. CJ 802 and 894 must be completed in the first semester of study with a B or better. CJ 802 is a prerequisite for 897. Candidates must pass a written comprehensive examination during their final semester.

Examinations

Students are required to pass a written comprehensive examination.
Courses for Graduate/Undergraduate Credit

CJ 501. Integrity in Public Service (3). Cross-listed as PADM 501. Explores the student to basic principles of personal and professional integrity and how those principles apply to their daily life as a member of the community and as an employee of a government or social service agency. Employs a case study method, using cases and examples from a wide range of government and non-profit agency experiences. Students become aware of the moral and ethical issues which may arise in their professional and personal lives; begin to develop critical thinking and analytical skills regarding ethical behavior; and become more personally and professionally responsible. Prerequisite: junior- or senior-level or instructor’s permission.

>CJ 513 Violent Crime (3). General education further studies course. Examines the extent, causes and policy implications of violent crime. Begins with a review of the rates of violent crime in various parts of the U.S. and will provide students with some direct experience of violence such as an emergency room observation period or a panel of victims of violence. Course also covers the theoretical approaches of violent crime as well as factors related to violence among strangers vs. families. Critical reviews of various policy responses to violence, including their likelihood to prevent or reduce violent crime will be required. Prerequisite: CJ 191.

CJ 515. Sex Crimes (3). Examines and defines what is classified as criminal forms of sexual behavior and the unique challenges they present to the criminal justice system. Also examines the extent and nature of sex crimes, sexual predator laws, sexual harassment and the victims of such crimes. Also discusses the theoretical developments in the field. Prerequisite: CJ 191.

CJ 516. Profiling (3). Familiarizes students with the methods used to profile violent crimes, including homicide, rape, arson and burglary; includes scope of the problem in each of these crimes, typical investigation sequence and the role of profiling up to the trial preparation stage. Prerequisite: CJ 191.

CJ 517. Homicide Investigation (3). Introduction to death investigations from an investigation-oriented perspective. Emphasis will be given to crime scene investigations, mechanisms of injury and death and sex-related homicides. Prerequisite: CJ 191.

>CJ 518. Criminal Justice & Crime in Film (3). General education further studies course. Presents films and associated popular cultural materials related to the criminal justice system and crime. The genre of the crime film has become an important component of contemporary culture. The course begins with basics of film criticism and will provide students with instruction on elements of a film genre. American and European films will be considered.

CJ 541. Medical and Legal Aspects of Death Investigation (3). Emphasizes the manner, cause, and mechanism of death; physiological effects of trauma; postmortem changes; identification techniques; investigation of child deaths; and the components of a complete death investigation. Considers and analyzes the history, function, and responsibilities of the coroner/medical examiner. Prerequisite: CJ 191.

CJ 551. Workshop (1-6). Specialized instruction using variable format in relevant criminal justice subjects. Repeatable for credit up to 6 hours.

>CJ 593. Crime Causation and Criminal Justice Policy (3). General education further study course. Introduction to theoretical issues in criminal justice. Primary emphasis is the etiology of criminal and delinquent activity and the response of the criminal justice system to such behavior. Discusses the significant contributions of outstanding criminologists, as well as elaborating the application of these perspectives to criminal justice agencies. Prerequisite: CJ 191.

CJ 598. Contemporary Issues in Criminal Justice (3). A capstone course for criminal justice majors nearing the completion of the baccalaureate degree. Explores current criminal justice issues and integrates material learned in the criminal justice curriculum. Covers theories of crime and delinquency; origins and development of criminal law and procedure; functions and operations of criminal justice agencies in America, including the response to juvenile offenders; prevention of crime and delinquency; privatization in corrections and policing; the nature, meaning, and purpose of criminal punishment; the nature and impact of criminal justice policy; and the relationship between criminal justice and human diversity. Prerequisites: CJ 191, 391, 392, 407, 593, and senior standing. For undergraduate criminal justice majors only.

CJ 600. Forensic Anthropology (3). Cross-listed as ANTH 600. Encompasses the area of criminal investigation involving biological evidence: blood, hair, fingerprint, dentition, and skeletal system. Covers procedures of collection, preservation, marking, transportation, referral, laboratory analysis, classification, and identification emphasizing anthropological interpretation. Prerequisite: 15 hours of criminal justice courses including CJ 191 or junior, senior, or graduate standing.

CJ 610. Correctional Counseling (3). Analysis of the role of a correctional counselor. Emphasizes current practices in community-based and institutional correctional counseling. Discusses application of theories of counseling which are widely used in correctional settings, rehabilitative programs, and special needs of offenders. Prerequisite: CJ 191.

CJ 641. Forensic Psychiatry (3). Analysis of the role of psychiatry in the criminal justice process. Introduces the student to concepts and procedures of forensic psychiatry. Prerequisite: 15 hours of criminal justice courses including CJ 191 or junior, senior, or graduate standing.

CJ 643. Forensic Science (3). An overview of the various sciences used in the forensic investigation of crime, including toxicology, drug identification, questionable documents, firearm and toolmark identification, trace evidence analysis, fingerprint identification, forensic pathology, forensic serology, forensic odontology, and forensic anthropology. Prerequisite: 15 hours of criminal justice courses including CJ 191 or junior, senior, or graduate standing.

CJ 651. Dispute Resolution (3). Examines a range of topics including causation, typologies, communications, mediation, arbitration, and other dispute resolution techniques. Includes criminal and victim mediation and both inter-group and inter-organization relations and dispute resolution techniques. Analyzes case studies. Prerequisite: 15 hours of criminal justice courses including CJ 191 or junior, senior, or graduate standing.


CJ 692. Community Policing (3). Reviews the various models and strategies of community policing. Examines key concepts, such as problem oriented policing, crime prevention, community relations, and empowering the community, and the integration of these concepts into community policing. Prerequisites: 15 hours of criminal justice courses including CJ 191 or junior, senior, or graduate standing.

CJ 781. Cooperative Education (1-4). Provides a field placement that integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic program. Students work with a faculty member in the formulation and completion of an academic project related to the field experience. The cooperative education experience must be an integral part of the student's graduate program. Individualized programs must be formulated in consultation with, and approved by, the cooperative education coordinator. Open only to CJ graduate students. Repeatable for credit. No more than 6 hours may be counted toward a plan of study. Enrollment limited to 4 hours per semester. Offered Cr/NCr only.

CJ 782. Workshop in Criminal Justice (1-6). Prerequisite: CJ 191 and instructor's consent.

CJ 783. Advanced Special Topics in Criminal Justice (1-3). Detailed study of topics in criminal justice with particular emphasis established according to the expertise of the various instructors. Prerequisites: CJ 191 and junior- , senior-, or graduate-level standing.

CJ 797. Policy Analysis and Program Evaluation (3). An overview of approaches to public policy analysis and program evaluation. Examines the roles of participants in public policy development, implementation, and evaluation. Explores policy and program functions and their intended and unintended impacts. Examines methodologies for collection of data and their use in the assessment of programs and program impacts. Prerequisites: 15 hours of criminal justice courses including CJ 191 or junior, senior, or graduate standing.
Courses for Graduate Students Only

CJ 802. Quantitative Methods for Public Sector Professionals (3). Cross-listed as GERO 802. Uses standard microcomputer statistical software and analysis to introduce statistics and quantitative analysis for organizational and policy decision making. Emphasizes the application of statistics and writing with quantitative evidence to real public sector policy questions. Assumes little or no background in statistics and software applications.

CJ 817. Crime in Popular Culture (3). Analyzes film as an expression of popular culture; focuses on films dealing with subject of crime. Particular attention to portrayal of violence and the images of women. Discusses the images of police, correctional officers, and other criminal justice professionals.

CJ 820. Terrorism and Modern Societies (3). A broad overview of the many theoretical approaches to the study of terrorism and studies recurring issues regarding the interpretation of various types of terrorism. Focuses not only on theoretical concerns, but also on policy debates and the substantive ramifications of current events. Exposes students to the range and complexity of both domestic and international terrorism and also to different approaches to the study of terrorism.

CJ 850. Workshop (1-6). Specialized instruction using variable format in relevant criminal justice subjects. Repeatable for credit up to 6 hours. Restricted to graduate students.

CJ 853. Crime Prevention through Environmental Design (3). Examines the premises and concepts of Crime Prevention through Environmental Design (CPTED), including access control, natural surveillance, territorial reinforcement, and activity support. Emphasizes case studies and field research.

CJ 855. Seminar on Juvenile Justice (3). An analysis of the criminal justice process as related to the youthful offender. Emphasizes functional components, such as training of corrections personnel, community coordination for delinquency prevention and control, police-school relations, and ethical, administrative, and operational aspects of juvenile justice agencies.

CJ 861. Police Administration (3). A comparative survey and analysis of administrative philosophy; problems, procedures, organizations, and functions of effective agency organization. Considers administrative skills related to operations and personnel.

CJ 882. Individual Directed Study in Criminal Justice (3-6). Faculty directed readings and/or research in special areas of interest in the field of criminal justice. Prerequisite: consent of graduate coordinator and instructor.

CJ 891. Seminar in the Judicial Process (3). Reviews and analyzes the functional and legal theories impacting the administration and operation of the judicial system. Examines actual practice as well as statutory and case law.

CJ 893. Seminar on the Application of Criminological Theory (3). An in-depth analysis of the major theories of criminology and of their importance to the criminal justice process. Emphasizes the student’s development of a consistent and valid frame of reference.

CJ 894. Proseminar in Criminal Justice (3). Familiarizes students with critical issues facing the criminal justice system. Reviews issues which face law enforcement, the courts, corrections, and the juvenile justice system, considering the integrity of the entire criminal justice system.

CJ 895. Seminar in Policing (3). Familiarizes students on such law enforcement topics as the historical development of policing, the police role, occupational socialization, and problems of police work.

CJ 896. Seminar in Corrections (3). Focuses on the major issues and dilemmas facing modern corrections in America. Includes both institutional programs such as prisons and jails, as well as alternatives in community settings, such as diversion, probation, parole, halfway houses, work release centers, and community corrections.

CJ 897. Advanced Research Methods (3). Cross-listed as GERO 897. Advanced research course; studies the selection and formulation of research problems, research design, hypothesis generation, scale construction, sampling procedures, and data analysis and interpretation. Prerequisite: either CJ 802 or equivalent.

CJ 898. Applied Research Paper (3). Original research project under a faculty member’s direction. Project requires a written report. Must be an individual effort, not a group project. Primarily for graduate students who wish to provide evidence of writing and research ability in order to pursue further graduate education. Prerequisite: graduate-level research methods class.

Ethnic Studies (ETHS)

Graduate Faculty

Assistant Professor: Anna M. Chandler

Although a graduate program is not currently available in ethnic studies, the Department of Ethnic Studies participates extensively with other departments in the multidisciplinary Master of Arts in Communications and Master of Arts in Liberal Studies. See requirements for these programs in the Elliott School of Communications and Master of Arts in Liberal Studies sections of the Graduate Catalog.

Courses for Graduate/Undergraduate Credit

>ETHS 512. Aging and Ethnicity (3). Cross-listed as GERO 512. General education further study course. Addresses the needs of students interested in (1) providing services to; (2) exploring the “issues” of; (3) becoming familiar with the rights of; (4) learning the legal procedures for resolving specific problems of; and (5) offering practical solutions for the difficulties encountered by ethnic older persons. Prerequisites: ETHS 100, GERO 100, SOC 111, or instructor’s consent.


ETHS 545. Cross-Cultural Communications Theory (3). An examination of current cross-cultural communication theory and its impact on contemporary cross-cultural issues.

ETHS 580. Individual Projects (3). Students conduct independent research related to a specific ethnic group. Prerequisite: 50 hours of Wichita State credit or program consent. Repeatable for a total of 6 hours.

ETHS 725. Concepts of Cross-Cultural Communications (3). A critical survey of the concepts of cross-cultural communications. An in-depth examination of the rationale used to evaluate different ethnic groups’ language and behavior. Course provides a conceptual understanding of special implications and necessary adaptations of communications to, between, and among diverse ethnic groups in our society.

Gerontology (GERO)

Graduate Faculty

Professors: Raymond H. Hull, Communicative Disorders and Sciences; Samuel J. Yeager, HWS Public Administration

Associate Professors: Linda Bakken, Counseling, Educational, and School Psychology; Delores Craig-Mooreland, CMA Criminal Justice; Alicia A. Huckstadt, Nursing; Nancy McCarthy Snyder, HWS Public Administration; Marilyn L. Turner, Psychology

Assistant Professors: Anna M. Chandler, Ruth B. Pickard, Public Health Science; Mary Corrigan, (graduate coordinator)

The gerontology program offers courses of study leading to the Master of Arts (MA) degree in gerontology. Because gerontology is concerned with gaining and applying knowledge about all aspects of aging in a wide range of professional settings, it is by nature, multidisciplinary. The graduate degree program in gerontology at Wichita State draws upon the faculty and resources of the Hugo Wall School of Urban and Public Affairs and faculty and courses in the colleges of liberal arts and sciences, education, and health professions.

Master of Arts in Gerontology

The gerontology program requires a minimum of 39 hours leading to the MA degree.

The program is designed for students with minimal previous training in gerontology, among them professionals in such areas as communicative disorders, recreation, physical or occupational therapy, allied health, business, ministry, counseling, social work, adult education, mental health, and any field where older people make up a significant and increasing proportion of the client population and where professionals with gerontological training are presently scarce.
Since employment in the area of aging often demands a knowledge of gerontology combined with knowledge and skills found in a particular discipline, students may use elective courses to pursue an emphasis in such areas as administration, health, long-term care, programs and services, research, and policy.

Admission Requirements
In addition to the Graduate School admission requirements, applicants must have a grade point average in their last 60 hours of their bachelor’s degree of 3.000 (on a 4.000 scale) and must submit names of three references. Students without an undergraduate statistics course are required to take a graduate-level statistics course approved by their advisor. International students must have a score higher than 575 paper-based, 230 computer-based, or 88 Internet-based on the TOEFL exam.

Degree Requirements
Students must take certain required core courses with a minimum total of 39 hours including a terminal research project.

Core Curriculum

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>GERO 518</td>
<td>Biology of Aging or NURS 789, Chronic Illness and Aging</td>
<td>3</td>
</tr>
<tr>
<td>GERO 663</td>
<td>Economic Insecurity</td>
<td>3</td>
</tr>
<tr>
<td>GERO 702</td>
<td>Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>GERO 715</td>
<td>Adult Development and Aging</td>
<td>3</td>
</tr>
<tr>
<td>GERO 798</td>
<td>Multidisciplinary Perspectives on Aging</td>
<td>6</td>
</tr>
<tr>
<td>GERO 802</td>
<td>Aging Programs and Policies</td>
<td>3</td>
</tr>
<tr>
<td>GERO 810</td>
<td>Advanced Gerontology Internship*</td>
<td>3</td>
</tr>
<tr>
<td>GERO 850</td>
<td>Selected Topics in Gerontology</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives** 12

Terminal Research Project** (one of the following) 3 
GERO 988, Applied Research Paper or GERO 899, Thesis

Total 39

*GERO 810, Internship, may be waived for those with extensive approved practical experience.

**With the approval of their advisor, students may use their elective hours and terminal research project to pursue an emphasis.

Relevant courses in other departments or programs which students may consider include PADM 702, 710, 725, 745, 775, 802, 845, 865; NURS 789; ACCT 800; MKT 800; PHS 804, 812, 818, 822, 826, 834, 858; and PSY 813. With the consent of their graduate program advisor and program approval, students may take other courses not listed as elective hours.

Students should consult the Gerontology Program Handbook for additional guidance on the program.

Graduate Emphasis in Gerontology
A 12-15-hour emphasis in gerontology may be taken as a part of a graduate degree program in another department. Students who wish to pursue the gerontology emphasis must fulfill the requirements in both departments.

Courses for Graduate/Undergraduate Credit

**GERO 501. Field Experience (3-6). A supervised field experience in an agency or organization planning or providing services to older people, individually designed to enhance each student’s skills and knowledge of the aging service network. Repeatable for 6 hours credit. Prerequisites: 12 hours of gerontology credit and instructor’s consent.

**GERO 512. Aging and Ethnicity (3). Cross-listed as ETHS 512. General education further study course. Addresses the needs of students interested in (1) providing services to; (2) exploring the “issues” of; (3) becoming familiar with the rights of; (4) learning the legal procedures for resolving specific problems of; and (5) offering practical solutions for the difficulties encountered by ethnic older persons. Prerequisites: ETHS 100, GERO 100, SOC 111 or instructor’s consent.

GERO 513. Sociology of Aging (3). Cross-listed as SOC 513. Analysis of the social dimensions of old age, including changing demographic structure and role changes and their impact on society. Prerequisite: SOC 111.

GERO 515. Women and Aging (3). Introduces students to issues in aging that are unique to women, to women’s diverse developmental patterns, and to research methods appropriate for studying aging women and their life experiences. Topics include physical change, role transitions, and adaptation from a lifespan perspective.

GERO 518. Biology of Aging (3). Cross-listed as BIOL 518. An introduction to the phenomenon of aging, including a survey of age-related processes and mechanisms of senescence, emphasizing human. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: a basic course in biology that satisfies the general education requirements.

GERO 520. Family and Aging (3). Cross-listed as SOC 520. An analysis of the families and family systems of older people. Emphasizes demographic and historical changes, widowhood, caregiving, and intergenerational relationships as they relate to the family life of older people. Prerequisites: GERO 100, SOC 111, or junior standing.

GERO 543. Aging and Public Policy (3). Explores the impact of an aging population on social institutions, covers the history of American aging policies and the organization and financing of health care for the elderly, and examines public approaches to responding to the needs of an increasingly diverse aging population. Prerequisite: SOC 111 or GERO 100 or junior standing.

GERO 550. Selected Topics in Gerontology (1-6). Study in a specialized area of gerontology with the focus upon professional programs and current issues in the field of aging. Emphasizing knowledge and skills in applied areas of gerontology as they relate to an emerging area of research and application. Repeatable up to 6 hours. Prerequisite: Instructor’s consent.

GERO 551. Workshop (3). Specialized instruction using a variable format in relevant gerontology subjects. Repeatable for credit up to 6 hours.

GERO 560. The Aging Network (3). An overview of federal, state, and local programs concerning planning, managing, or direct delivery of services to the older population. Prerequisite: 9 hours of gerontology credit or instructor’s consent.

GERO 663. Economic Insecurity (3). Cross-listed as ECON 663. Personal economic insecurity, such as unemployment, old age, health care, disablement, and erratic economic fluctuations. Includes costs and benefits of government action to aid in meeting such insecurities. Prerequisites: ECON 202 or instructor’s consent, and junior standing.

GERO 700. Grant Proposal Preparation (3). Concerned with the process of research and proposal development, including response to published guidelines, project planning, and proposal development and submission. Examines grant funding, including types of funding sources and their purposes and methods and processes of proposal evaluation. Students write and evaluate proposals.

GERO 702. Research Methods (3). Cross-listed as PADM 702. Acquaints students with applied public policy research methods. Emphasizes locating, collecting, appraising, and utilizing both primary and secondary sources of data of the type used in policy, planning, and administrative research. Students must complete several short research projects.

GERO 715. Adult Development and Aging (3). Explores theory and research related to the development of adults and to the aging process. Utilizing an interactive, interdisciplinary perspective, the course examines the process of change, transition, growth, and development across the adult lifespan. Prerequisites: GERO 702 or 6 hours of gerontology.

GERO 720. Independent Readings in Gerontology (1-3). Directed study in a specialized topic in gerontology. Repeatable up to 6 hours. Prerequisite: 12 hours of gerontology credit and departmental consent.

GERO 750. Workshop in Gerontology (1-3). Provides specialized instruction, using a variable format in a gerontologically relevant subject. Repeatable for credit.

GERO 781. Cooperative Education (1-6). Provides practical field experience, under academic supervision, that is suitable for graduate credit and complements and enhances the stu-
ner’s academic program. Repeatable up to 6 hours. Prerequisite: 12 hours of gerontology and instructor’s consent.

GERO 798. Multidisciplinary Perspectives on Aging (3). An introduction to the anthropological study of aging and the aged. Students may choose the subject matter of the thesis. (30 total hours)

GERO 801. Field Research in Gerontology (3). An examination of the methods of participant observation and interview as approaches to understanding aging and the aged. Emphasizes the importance of social values and historical context for understanding current policies, programs, and practices. Prerequisite: GERO 798, 12 hours of gerontology or instructor’s consent.

GERO 802. Quantitative Methods for Public Sector Professionals (3). Cross-listed as CJ 802. Uses standard microcomputer statistical software and analysis to introduce statistics and quantitative analysis for organizational and policy decision making. Emphasizes the application of statistics and writing with quantitative evidence to real public sector policy questions. Assumes little or no background in statistics and software applications.

GERO 803. Program Planning and Evaluation in Aging Services (3). Examines the process of developing service programs in response to a defined community need in aging services. Includes assessment of need; identification and development of community resources; and development and evaluation of program goals, objectives, and methods of implementation. Prerequisite: 12 hours of gerontology or instructor’s consent.

GERO 804. Aging Programs and Policies (3). Analyzes and evaluates policies and programs related to aging and old age. Emphasizes the importance of social values and historical context for understanding current policies, programs, and practices. Prerequisite: GERO 798, 12 hours of gerontology or instructor’s consent.

GERO 810. Advanced Gerontology Internship (3-6). Integrates academic gerontology and practical experience through supervised placement of students in agencies or organizations in gerontology. Repeatable up to 6 hours. Prerequisite: 12 hours of gerontology and instructor’s consent.

GERO 850. Selected Topics in Gerontology (1-6). Cross-listed as CJ 850. Advanced research course; studies the selection and formulation of research problems, research design, hypothesis generation, scale construction, sampling procedures, and data analysis and interpretation. Prerequisite: CJ 802 or equivalent.

GERO 897. Advanced Research Methods (3). Cross-listed as CJ 897. Advanced research course; studies the selection and formulation of research problems, research design, hypothesis generation, scale construction, sampling procedures, and data analysis and interpretation. Prerequisite: CJ 802 or equivalent.

GERO 898. Applied Research Paper (1-3). Original research project under a faculty member’s direction. Project requires a written report and defense of that report before a faculty committee. Must be an individual effort, not a group project. Intended to be a major project or capstone activity completed at the end of a student’s program of study. Prerequisite: graduate-level research methods class. Repeatable.

GERO 899. Thesis (1-3). Repeatable, but total credit hours counted toward degree shall not exceed 4 hours.

Computer Science (CS)

Graduate Faculty
Professor: Shiang-Ching Chou
Associate Professors: Rajiv Bagai (chairperson), Prakash Ramanan
Assistant Professors: Rodney Bates (graduate coordinator), Sattiraju Prabhakar

Master of Science

The Department of Computer Science offers the Master of Science (MS) degree program. Through a combination of advanced courses and electives, the MS program seeks to provide a level of concentration suitable for advanced professional work and/or further graduate study in computer science.

Admission Requirements

All candidates for graduate study must have a bachelor’s degree in computer science or a related field from an accredited institution.

1) Have obtained a total of at least 1000 in the Quantitative and Analytical Writing sections of the general GRE (where Analytical Writing score is the raw score times 100).

2) Have taken a programming course with at least a B grade; otherwise, must start at WSU in the summer term and take CS 211 in that term.

Any CS background course not previously taken, or taken with a grade below C, must be (re)taken at WSU. The student must have an overall GPA of at least a B average in all 9 of the background courses before he/she will be allowed to take any course numbered 600 or above.

Degree Requirements

The MS degree requires 30 credit hours for the thesis option, 33 credit hours for the project option, or 36 credit hours for the course work option.

1. Computer theory (3 credit hours)—CS 720, Theoretical Foundations of Computer Science.

2. Advanced courses (12 credit hours)—Four computer science courses numbered 800-889 or CS 898.

3. Electives (9 credit hours)—A coherent block of graduate-level courses from computer science or closely related technical fields, as approved by the candidate’s graduate advisor. All computer science electives must be at the 600-level or above.

4. Thesis/Project/Coursework:

A. Thesis (6 credit hours)—The thesis option is usually exercised by students planning to pursue a PhD degree in computer science. This option requires 6 credit hours of thesis research (CS 892) in a specialized area of computer science under the supervision of a computer science graduate faculty advisor. This should culminate in the writing of a thesis. The student should pass an oral final examination by the graduate faculty advisor. This examination will pertain to, but is not limited to, the subject matter of the thesis. (30 total hours)

B. Project (9 credit hours)—The project option is usually exercised by students planning to work in industry. This option requires 3 credit hours of project (CS 891), one computer science course numbered 800-889 or CS 898, and one computer science course at the 600-level or above. The project will be supervised by a computer science graduate faculty advisor and can be job-related. The student should write a report on the project and pass an oral final examination by the graduate faculty advisor. This examination will pertain to, but is not limited to, the subject matter of the project. (33 total hours)

C. Coursework (12 credit hours)—Two computer science courses numbered 800-889 or 898, and two computer science courses at the 600-level or above. (36 total hours)
Courses for Graduate/Undergraduate Credit

CS 510. Programming Language Concepts (3). 3R; 1L. Theoretical concepts in the design and use of programming languages, including scope of declarations, storage allocation, subroutines, modules, formal methods for the description of syntax, and semantics. Introduction to the concepts of different styles of languages—imperative languages, functional languages, logic languages, object-oriented languages, etc. Prerequisites: CS 300 and 322, each with a C or better.

CS 540. Operating Systems (3). 3R; 1L. Covers the fundamental principles of operating systems: process synchronization, scheduling, resource allocation, deadlocks, memory management, file systems. Studies a specific operating system in depth. Programming assignments consist of modifications and enhancements to the operating system studied. Prerequisites: CS 310 and 312, each with a C or better, or graduate standing.

CS 560. Data Structures and Algorithms II (3). 3R; 1L. Design and analysis of algorithms and proof of correctness. Analysis of space and time complexities of various algorithms including several sorting algorithms. Hashing, binary search trees, and height balanced trees. Algorithm design techniques including divide and conquer, greedy strategies, and dynamic programming. Elementary graph algorithms. Prerequisites: CS 300, CS 322, and Math 243 and STAT 460 with a C or better in each.

CS 615. Compiler Construction (3). 2R; 2L. First compiler course for students with a good background in programming languages and sufficient programming experience. Covers over-all design and organization of compilers and interpreters, lexical and syntax analysis, construction of symbol tables, scope analysis, type checking, error recovery, run-time organization, intermediate code and its interpretation, code generation, and optimization. Project-oriented course. Emphasizes practical experience gained through the design and implementation of a simplified but non-trivial compiler for a strongly typed, procedural language. The implementation is carried out in a modern systems programming environment. Prerequisite: CS 510 with a C or better.

CS 644. Advanced Unix Programming (3). 3R; 1L. Improves skills in C programming under the Unix environment. Covers file I/O, both buffered and unbuffered, working with the Unix file system, concurrent programming with multiple processes, and process control. Also includes the use of signals and concepts of interprocess communication with pipes and FIFOs. Students must have prior knowledge of C language and its use of structures and pointers. Prerequisite: CS 300 with a C or better or instructor’s consent.

CS 655. Information Delivery on the Internet (3). 3R; 1L. Explores the capabilities of providing information on the World Wide Web. Information is typically provided through some sort of website that incorporates static text and the dynamic capabilities of the Web. Learn how to create an interactive website through the use of CGI and Java programming and how to interconnect a website to databases and generate images on the fly. Java portion covers a wide range of Java language and the Applet interface and utilities. Prerequisite: CS 300 with a C or better or instructor’s consent.

CS 665. Introduction to Database Systems (3). 3R; 1L. Fundamental aspects of database systems, including conceptual database design, entity-relationship modeling, and object-oriented modeling; the relational data model and its foundations, relational languages, and SQL (Structured Query Language); logical database design, dependency theory, and normal forms; physical database design, file structures, indices, and decomposition; integrity, security, concurrency control, recovery techniques, and optimization of relational queries. Prerequisites: CS 300 and 322 with a C or better.

CS 680. Introduction to Software Engineering (3). 2R; 2L. An introduction to the body of knowledge, presently available tools and current theories and conjectures regarding the process of program development. Studies these topics from several different viewpoints, ranging from the individual program statement to a large programming project. Prerequisites: CS 300 and 410, each with a C or better.

CS 684. Applications Systems Analysis (3). 3R; 1L. A study of the methods for analyzing business systems problems and other large-scale applications of the computer. At the crossroads of computer technology, management science and human relations, systems analysis is the keystone in the education of the well-trained computer applications analyst. Includes systems design, cost benefit analysis, data base design, distributed processing, project management, and documentation. Prerequisite: CS 300 with a C or better.

CS 697. Selected Topics (1-3). 1-3R; 1L. Selected topics of current interest. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

CS 720. Theoretical Foundations of Computer Science (3). 3R; 1L. Provides an advanced level introduction to the theoretical bases of computer science. Computer science theory includes the various models of finite state machines, both deterministic and nondeterministic, and concepts of decidability, computability, and formal language theory. Prerequisite: CS 322 or equivalent with a C or better.

CS 742. Computer Communication Networks (3). 2R; 2L. Introduction to network programming for the Internet environment including the basic concepts of TCP/IP, client-server paradigm, programming of clients, and various types of servers, remote procedure calls, concurrency management, and interconnection techniques. Emphasizes the design principles that underlie implementation of practical applications. Prerequisite: CS 300 with a C or better or departmental consent.

CS 750. Workshop in Computer Science (1-3). Short-term courses with special focus on introducing computer science concepts. Repeatable for credit. Prerequisite: departmental consent.

CS 771. Artificial Intelligence (3). 3R; 1L. Heuristic versus algorithmic methods, principles of heuristic approach, and cognitive processes. Also covers objectives and methods of artificial intelligence research and simulation of cognitive behavior. Includes a survey of appropriate examples from various areas of artificial intelligence research. Prerequisites: CS 300 and 322 with a grade of C or better in each.

CS 781. Cooperative Education in Computer Science (1-3). Practical experience in a professional environment to complement and enhance the student’s academic program. For master’s level CS students. Repeatable, but may not be used to satisfy degree requirements. Offered Cr/NCr only. Prerequisites: departmental consent and graduate GPA of 3.000 or above.

CS 798. Individual Projects (1-3). Allows beginning graduate students and mature undergraduate students to pursue individual projects of current interest in computer science. Graded S/U only. Prerequisite: departmental consent.

Courses for Graduate Students Only


CS 817. Advanced Java Technology (3). 3R; 1L. Covers advanced features of the Java language, the underlying implementation technology (Java Virtual Machine), and extensions of the Java technology. Includes concurrent object-oriented programming and Java core reflection, and extensions of the Java technology providing parametric polymorphism and persistence. Includes challenging programming projects. Time also devoted to recent Java research and development results. Prerequisite: CS 510 with a B or better.

CS 843. Distributed Computing Systems (3). 3R; 1L. A study of hardware and software features of on-line multiple computer systems emphasizing network design and communication. Includes distributed data bases, interprocess communication and centralization versus distribution. Also includes study of the use of microcomputers in representative configurations. Prerequisites: CS 540 and 742.

CS 862. Advanced Database Systems (3). 3R; 1L. This course covers recent developments and advances in database technology. It is designed for students who have had a first database course and have a good background in the related computer science disciplines. Possible topics
include: extended relational database management systems, object-oriented database management systems, deductive databases, database type systems and database programming language, persistent languages and systems, distributed databases. Prerequisite: CS 665.

CS 863. Multimedia Database Systems (3). 3R; 1L. Presents state-of-the-art techniques for representing and manipulating information in multimedia databases. Emphasizes image, audio, video, and document data. Covers theoretical principles underlying storage, retrieval, querying, and delivery of such data. Requires good prior knowledge of relational and/or object-oriented databases. Prerequisite: CS 665 with a grade of C or better.

CS 864. Database Query and Processing Optimization (3). 3R; 1L. Covers concepts and techniques for efficient and accurate processing of queries for a variety of data forms, such as centralized and distributed relational databases as well as object-oriented, fuzzy, and multimedia databases. Prerequisite: CS 665 with a grade of C or better; CS 560 recommended.

CS 865. Principles of DBMS Implementation (3). 3R; 1L. Deals with two of the three main components of a relational Database Management System (DBMS): storage management and query processing. The third component, transaction management, will be covered as time permits. Prerequisite: CS 665 with a grade of C or better; CS 560 recommended.

CS 866. XML Databases (3). 3R; 1L. Deals with modeling semi-structured Web databases as XML databases, their schema (DTD and XML schema), integrity constraints, and their query languages (XPath, XSLT, and XQuery). Prerequisite: CS 665 with a grade of C or better.

CS 867. Object-Oriented Databases (3). 3R; 1L. Covers object-oriented technology as it applies to databases and persistent object systems. Focuses on the advantages of the object-oriented database technology in complex application areas. Java database and persistent technologies and the associated tools have an important role here, along with the related industrial standards, such as ODMG. Provides design and implementation experience using a challenging application. Devoted to recent research and development results. Prerequisites: CS 665 and an object-oriented programming language course such as CS 217 or CS 350L or instructor's consent.

CS 868. Database Transaction Management (3). 3R; 1L. Topics covered in this course include logging and recovery from system failures, concurrency control, serial and serializable schedules, schedulers, and deadlock detection and recovery. Prerequisite: CS 665

CS 891. Project (3). An intensive project involving the analysis and solution of a significant practical problem which must be supervised by a CS graduate faculty advisor; it can be job-related. Students must write a report on the project and pass an oral final examination by an ad hoc faculty committee headed by the project advisor. Graded S/U only. Prerequisite: departmental consent.

CS 892. Thesis (1-6). May be repeated for up to 6 hours of credit. Graded S/U only. Prerequisite: departmental consent.

CS 893. Individual Reading (1-5). Graded S/U only. Prerequisite: departmental consent.

CS 898. Special Topics (2-3). 2-3R; 1L. Topics of current interest to advanced students of computer science. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

Criminal Justice
See Community Affairs, School of.

Earth, Environment and Physical Sciences (EEPS)
Graduate Faculty
Professors: Elizabeth C. Behrmann (chairperson, Physics), William D. Bischoff (dean, Fairmont College of Liberal Arts and Sciences), Hussein Hamdeh, James C. Ho, Salvatore J. Mazzullo
Associate Professors: Collette D. Burke, Jason Ferguson, John C. Gries (chairperson, Geology), Syed Taher, Wan Yang (graduate coordinator)
Assistant Professor: Waldemar Axmann, Hongsheng Cao, William Parcell

Planet Earth consists of interacting systems - the lithosphere, biosphere, hydrosphere, and atmosphere - which form the physical foundation of life on Earth and human societies. These systems are changing rapidly due to diverse human activities. The major's program in Earth, Environmental, and Physical Sciences (EEPS) at Wichita State University offers the opportunity for multidisciplinary and interdisciplinary graduate education and research to investigate the consequences of human actions and to seek wise development and utilization of the resources of our planet. The program combines the talents and expertise of faculty in the disciplines of geology, physics, and environmental science, and supporting fields such as biology and chemistry. It is designed to train a new generation of scientists, professionals, and educators who will be well equipped with general knowledge and skills in methodology, critical and creative thinking in scientific research, and advanced knowledge and skills in geology, environmental science, or physics. Graduates will meet the requirements and challenges of the 21st century to become successful science educators, professionals in industry or government, and/or aspirants to PhD studies.

The EEPS program includes three inter-related disciplines: geology, environmental science, and physics. Multidisciplinary and interdisciplinary education for a candidate in EEPS will be achieved through specially designed course work, research, and other learning opportunities. Three required courses (EEPS 700, 701, and 721) will provide knowledge and skills in scientific methodology, research design, and scientific writing and presentation. In addition, EEPS 702 is required for all students in thesis option and non-thesis option B. Follow up courses (i.e., EEPS 710) and discipline-specific graduate courses will enable students to master advanced knowledge and skills in the field chosen by the student; and discipline-specific or interdisciplinary research projects will foster students' ability to conduct independent research, make scientific presentations, and prepare quality scientific manuscripts.

The program is co-administered by the Departments of Geology and Physics. It offers a variety of options for students pursuing a master's degree in EEPS - thesis, non-thesis, and internship. For example, by working on a project in a private company or government agency through internship, a student can gain first-hand experience in the professional workplace; likewise, by taking advanced courses in several fields, a student can broaden his/her scientific background to become a highly qualified science teacher.

Admission Requirements
Applicants for admission to the EEPS master's program should have a bachelor's degree in any field of natural sciences. However, applicants with a bachelor's degree outside the field of natural sciences are also encouraged to apply for conditional admission. Motivated candidates can make up background deficiencies early in their EEPS study before gaining full-standing status in the program.

All applicants also need to meet the general admission requirements of the Graduate School, which can be found in the Graduate Catalog of Wichita State University (see the Graduate School website http://webs.wichita.edu/gradsch).

Degree Requirements
Upon Admission, applicants need to consult with the graduate coordinator of EEPS to evaluate background deficiencies, if any, and to establish a plan of study that best suits the applicant's goals. A master's degree in EEPS requires satisfactory completion of coursework and/or research, which will ensure that students take advantage of the multidisciplinary/interdisciplinary nature of the program. Coursework must include at least 18 credit hours of EEPS 700-800 levels, among which at least 8 hours must be EEPS required courses (including two credit hours of EEPS 700 Technical Sessions). The required courses focus on methodologies, critical and creative thinking in scientific research, and issues common to geology, physics, environmental science, and related disciplines. To further benefit from the interdisciplinary nature of the program, students are encouraged to take courses in different disciplines and other supporting courses.

To meet the requirement of differing career goals, students may choose a thesis, internship, or non-thesis option for degree completion. The thesis and internship topic may be in geology, environmental science; or physics; such activity may be interdisciplinary, involving two or more fields.

Thesis Option: Thesis research is recommended for students who will pursue PhD study or seek professional employment after graduation. Students choos-
Essential elements and skills of effective scientific communication. This course must be taken in conjunction with any course (except EEPS 889 and 890) that requires extensive writing. May be repeated two times for different courses for a maximum of 2 credits toward the degree. Prerequisite: EEPS 700.

EEPS 721. Current Issues in Global Environmental Science (3). Introduces and uses basic concepts relating to ecosystems, habitats, environments, and resources as a basis for understanding environmental problems at different spatial and temporal scales. An interdisciplinary approach frames these problems to facilitate understanding of inter-relationships required for environmental analysis, remediation, and management. Prerequisite: EEPS 710 or instructor’s consent.

EEPS 720. Scientific Writing (1). Procedure, organization, format, and style of a variety of technical and scientific publication vehicles, such as abstracts, professional journal articles, government and industrial reports, and paper and book reviews. Essential elements and skills of effective scientific written communication. This course must be taken in conjunction with any course (except EEPS 889 and 890) that requires extensive writing. May be repeated two times for different courses for a maximum of 2 credits toward the degree. Prerequisite: EEPS 700.

EEPS 700. Technical Sessions (1). Through seminar presentations by students, faculty, and guest lecturers, students will critically analyze essential elements and skills of effective oral presentation of scientific research methodology, data, and results to audiences of diverse backgrounds; and will learn techniques of effective utilization of visual display media, presentation styles, and speaker-audience interactions. Must be taken for two semesters for maximum of 2 credit hours toward the degree. Prerequisite: graduate standing or instructor’s consent.

EEPS 701. Computer Methods in Science (3) IR, 2L. Survey of computer applications commonly used by scientists and emphasizes non-statistical applications. Includes computer-assisted instruction, data management, presentation packages, Internet resources, digital image analysis, graphs and spreadsheets, reference acquisition and management, desktop publishing, and specialized applications for modeling, simulations, mapping, and time-series analysis. Lectures and demonstrations involve individual hands-on activities and student projects. Prerequisites: graduate standing or instructor’s consent.

EEPS 702. Research Methods (1). Essential elements and principles in scientific research, such as project design, funding application, literature research, implementation, collaboration, ethics, and publication. Will include guest resource persons from the library and research offices. Prerequisite: Graduate standing or instructor’s consent.

EEPS 710. Great Discoveries and Controversies in Science (3). Foundation, history, and insights that led to great discoveries in various scientific fields, and which caused great and continuing controversies in scientific theory, the advancement of science, and lessons and perspectives to be learned for future scientific research. Course involves lectures, seminars, literature research, essay writing, and presentation by students. Prerequisite: graduate standing or instructor’s consent.

EEPS 889. Internship (1-6). Students may gain interdisciplinary skills by participating in applied and/or basic research internship projects with local business, industry, or government agencies. Enrollment in internship projects requires an approved proposal. Completion of an internship for graduation requires a formal oral presentation of the internship activity and a written report. For students choosing the internship option. Repeatable for a maximum of 6 credit hours toward the degree. Enrollment is limited to 3 credit hours before a student’s internship proposal is approved. Prerequisite: consent of internship supervisor.

EEPS 890. Thesis (1-6). For students choosing the thesis option. Repeatable for a maximum of 6 credit hours toward the degree. Enrollment is limited to 3 credit hours before a student’s thesis proposal is approved. Prerequisite: EEPS 720 and consent of thesis supervisor.
Transfer of Credit. Students must complete 24 hours of credit at Wichita State within the English department. Students may transfer up to 9 hours of credit on the Plan A program and up to 6 hours of credit on plans B and C. If the credit to be transferred comes from a program in which the student took a graduate degree, the time limits imposed by the Graduate School on other transfers of credit will not apply.

Language Requirement. Master's degree candidates in English may fulfill the department's foreign language requirements in any one of the following ways:
1. By submitting a transcript showing the successful completion of at least 15 hours of undergraduate work in a single foreign language or the equivalent as defined by the Fairmount College of Liberal Arts and Sciences.
2. By completing the required 15 hours of undergraduate work in a single foreign language.
3. By taking a test administered by the Department of Modern and Classical Languages and Literatures in the elected foreign language, with a successful score determined by the English department.
4. By submitting a transcript showing successful completion of 6 hours of linguistics.

Master's candidates with a creative writing emphasis (Plan C) have the additional choice of successfully completing 6 semester hours of foreign language in translation in courses approved by the department's graduate committee as a substitute for the language requirement.

Degree Requirements
ENGL 800, Introduction to Graduate Study in English, normally should be included in the student's first semester of graduate study. All work to be counted toward the MA degree in English must be in courses numbered above 700—with the exception of 860, Theory and Practice in Composition—and the following courses in linguistics and in literature: ENGL 515, 521, 522, 524, 526, 527, 610, 615, 667, and 672. ENGL 515 and 615 may be taken to fulfill in part the major author and/or optional course requirements of the degree plans. ENGL 521, 522, 524, 526, and 527 may be taken to fulfill the period and/or optional course requirements of the degree plans. Candidates offering 500-, 600-, or 700-level English courses for graduate credit must satisfy a higher differential of performance relative to undergraduate students in the same courses, with the nature of this differential set by professors.

There are three programs leading to the degree. Plan A, which emphasizes literature, composition, and pedagogy, is especially designed for teachers. Plan B, which requires the student to submit a master's essay, places more emphasis on research, scholarly writing, and the independent study of literature. Plan C emphasizes creative writing. Students are assumed to be following Plan A unless they declare another plan.

Plan A requires the completion of 11 courses for a total of 33 semester hours distributed as follows: ENGL 800, Introduction to Graduate Study in English; two genre courses; three period courses in the ENGL 817-823 series and/or 521-527 series, with a minimum of two courses in English literature and one course in American literature; one course in composition theory and pedagogy (ENGL 680 or 780); and four elective courses in linguistics, literature, or methods of teaching English. With the approval of the Graduate Studies Committee, one of these electives may be taken in the College of Education. Regents' rules require that at least seven courses be at or above the 700 level. A master's essay is not required, but students must take a comprehensive examination based on a standardized reading list composed of eight literary texts from across historical periods and surveying the major genres and which is approved by the graduate studies committee. Students in Plan A will also be tested over two works which represent the pedagogy of composition or rhetoric. This list of ten books will include those being examined in the students' coursework as well as texts to be read outside of class. A new list will be published each semester. Students may take either the December or May comprehensive examination by informing the graduate coordinator of their intent to do so.

Plan B requires ten courses for a total of 30 semester hours distributed as follows: ENGL 800, Introduction to Graduate Study in English; two major author or special topics courses (ENGL 515, 615, 803, 840, 841, 845, or 860), one of which may serve as a context for the development of a thesis prospectus; one genre course consistent with the thesis topic; one period course consistent with the thesis topic; four elective courses; and ENGL 870, Master's Essay. Regents' rules require that at least six courses be at or above the 700 level. A candidate's Plan of Study, approved by the graduate coordinator, should include an appropriate range of courses in canonical and modern literature. Plan B also requires a comprehensive examination based on a standardized reading list composed of 10 literary texts from across historical periods and surveying the major genres and which is approved by the graduate studies committee. This list of 10 books will include those being examined in the students' coursework as well as texts to be read outside of class. A new list will be published each semester. Students may take either the December or May comprehensive examination by informing the graduate coordinator of their intent to do so.

Plan C, a program with an emphasis on creative writing, requires the completion of 30 semester hours plus a comprehensive examination and a thesis, which must be original work in fiction, poetry, or some other suitable literary form. A student's program, individually designed in consultation with the director of creative writing, must include 9 semester hours in the graduate creative writing sequence. The final comprehensive examination will be based on a list of 30 book-length works that the student will be held accountable for; the works will be chosen from the creative writing program master list in consultation with the director of creative writing and with the approval of the graduate coordinator. The number of sections of the Plan C comprehensive examination and its length will be equivalent to that given under Plan B, although the content will be based on the list of book-length works described above.

Admission to the Plan C program will be made upon the recommendation of the director of creative writing upon approval of a manuscript or other written evidence of ability to complete the degree. Such recommendation is subject to the final approval of the graduate coordinator.

Master of Fine Arts in Creative Writing
The degree program for the Master of Fine Arts (MFA) in creative writing places emphasis on the development of skills and understanding in the practice of imaginative writing and upon related academic study. It is not exclusively a studio program; rather, it encourages the development of writers who are able, as the result of additional course work in English, to demonstrate skills useful in teaching, editing, and other related areas. A core of workshops and tutorials leads to a final writing project: a collection of fiction or poetry, a novel, or some other appropriate work. Flexibility is provided in academic course work to allow for a variety of possible interests.

All MFA students are required to take ENGL 800, Introduction to Graduate Study in English. Teaching assistants must take ENGL 667, English Syntax, and ENGL 780, Advanced Theory and Practice in Composition, unless specifically exempted.

Admission Requirements
Applicants must meet the general requirements of the Graduate School, with the additional requirement of a 3.00 grade point average in their previous course work in English. The director of creative writing evaluates the applicant's transcript, prescribing additional undergraduate hours for those who have fewer than 24 credit hours of acceptable course work in English. Courses in freshman composition, grammar, teaching methods, journalism, speech, etc. may not be included in the required 24 hours. Exceptions may be made for outstanding students who have majored in related fields. With the permission of the director of creative writing, gifted writers may study in the program as special students with no specific degree intentions.

Applicants who earned their undergraduate degrees more than 10 years before their application for admission must be interviewed by the director of creative writing before they are admitted into the program.

Applicants who have earned their degrees in countries where English is not the native language must score at least 600 paper-based, 250 computer-based, or 100 Internet-based on the TOEFL (Test of English as a Foreign Language) Examination before they may be admitted to the program.

Degree Program Status
Applicants who seek to be admitted with full-standing in the degree program must submit a sample of original writing in literary fiction (approximately 20 pages), or poetry (about six poems), to the director of creative writing at the time they seek admission.
Counseling. All MFA candidates in English are advised by the director of creative writing who will help the student establish a Plan of Study taking into account the student's interests and future vocational plans.

Transfer of Credit. A minimum of 24 of the total 48 semester hours required for the degree must be taken at Wichita State. No more than 24 hours of credit may be counted toward the degree from other graduate work taken at Wichita State or at another school. If the credit to be transferred comes from a program in which the student took a graduate degree, the time limits imposed by the Graduate School on transfer of credit will not apply.

Degree Requirements

Coursework. The 48 semester hours of coursework are apportioned into two categories: required and elective courses.

A. Required Courses

1. A minimum of 3 hours per semester in ENGL 801, Creative Writing: Fiction, or 805, Creative Writing: Poetry, to a maximum of 12 semester hours.
2. Three hours in ENGL 800, Introduction to Graduate Study in English, or the equivalent, required of all graduate students. ENGL 800 normally should be included in the student's first semester of graduate study.
3. Three hours in ENGL 830, Graduate Studies in Drama; 832, Graduate Studies in Fiction; or 834, Graduate Studies in Poetry. With departmental consent, each course may be repeated for a maximum of 6 hours credit.
4. Three hours in ENGL 841, Graduate Studies in Contemporary Literature; 860, Graduate Seminar in Special Topics; or another suitable seminar in literature. With departmental consent, seminars may be repeated for a maximum of 12 hours credit.
5. Two to 6 hours in ENGL 875, MFA Final Writing Project.
6. For purposes of enrichment, candidates must take at least 3 graduate hours in the humanities or fine arts outside English. The choice is contingent upon the student's having the proper prerequisites.
7. Graduate teaching assistants are required to take ENGL 780, Advanced Theory and Practice in Composition, unless specifically exempted.

B. Elective Courses

Elective courses may be taken to pursue historical, technical, or theoretical studies that the candidate finds useful, to strengthen areas of weakness, or simply to enrich their degree program appropriately. All candidates must successfully complete a minimum of 15 elective hours in English courses numbered 500 and above, with the exception of English courses numbered 515 through 527, which may be taken for graduate credit. Candidates may take up to 26 elective hours in English courses numbered 800 and above in the approved 500-level courses. Other exceptions may be made as approved by the director of creative writing and with the consent of the department chair. Graduate students in 500-, 600- and 700-level courses are expected to meet higher standards of achievement than those imposed on undergraduates in the same courses. Within this unit, as many as 9 hours total of ENGL 880, Writer's Tutorial: Fiction; ENGL 881, Writer's Tutorial: Poetry; and ENGL 855, Directed Reading, may be taken.

Comprehensive Examination. All candidates are required to pass a written comprehensive examination in the final semester of their coursework. This examination is based on a reading list of 30 books chosen from the creative writing program master list by the candidate's final writing project director and the director of creative writing in consultation with the candidate.

Final Writing Project. The MFA final writing project in creative writing consists of a body of original work of publishable quality. The manuscript must be of such length as is appropriate to published books in its genre and is to be written under the direction of a member of the program staff. Candidates may preface their final writing project with a short introduction if they choose to do so.

Final Writing Project Review. Once the candidate has submitted the final writing project, a committee, composed of project director, second reader, and a regular graduate faculty member from English, will examine the work and determine whether or not the project meets the standards of acceptance.

Composition

Courses for Graduate/Undergraduate Credit

ENGL 581. Composition Practicum (1). Required for all teaching assistants in English. Does not count for credit toward the MA or MFA degree. Focuses on techniques and strategies for teaching composition. Each participant enrolls in the syllabus group appropriate to the composition course he or she teaches. Graded S/U only. Repeatable for credit. Prerequisite: appointment as a graduate teaching assistant in the Department of English.

ENGL 680. Theory and Practice in Composition (3). Introduces theories of rhetoric, research in composition and writing programs, and practices in schools and colleges. Students investigate the process of writing, analyze varieties and samples of school writing, and develop their own writing skills by writing, revising, and evaluating their own and others' work. Especially for prospective and practicing teachers; may not be taken for credit by students with credit in ENGL 780.

ENGL 685. Advanced Composition (3). Explores the relationships among contemporary issues, problem-solving, and communication. First objective: engage students in interdisciplinary inquiry into some aspect of social policy, inquiry which asks students to apply the analytical approaches of their major fields to current issues of broad, general interest. Second objective: develop students' abilities to communicate their knowledge and assumptions about this issue to a variety of audiences and for a variety of purposes. Prerequisites: ENGL 101 and 102 and upper-division standing.

ENGL 780. Advanced Theory and Practice in Composition (3). For teaching assistants in English. Review of new theories of rhetoric, recent research in composition, and new promising developments in composition programs in schools and colleges. Students are given practice in advanced writing problems, situations, and techniques and may propose projects for further special study.

Creative Writing

Courses for Graduate/Undergraduate Credit

ENGL 517-518. Playwriting I and II (3-3). Cross-listed as THEA 516 and 517. The writing of scripts for performance. Emphasizes both verbal and visual aspects of playwriting. If possible, the scripts are performed. Not repeatable for credit. Prerequisite: instructor's consent.

ENGL 585. Writer's Tutorial: Prose Fiction (3). Tutorial work in creative writing in literary fiction with visiting writer. Repeatable for credit. Prerequisite: consent of creative writing director.

ENGL 586. Writer's Tutorial: Poetry (3). Tutorial work in creative writing in literary poetry with visiting writer. Repeatable for credit. Prerequisite: consent of creative writing director.

Courses for Graduate Students Only

ENGL 801. Creative Writing: Fiction (3). Advanced work in creative writing; literary fiction. Repeatable for credit. Prerequisite: consent of creative writing director.

ENGL 803. Creative Writing: Nonfiction (3). Advanced work in creative nonfiction: forms of nonfiction requiring a distinctive voice and demanding a formal artistry generally associated with fiction. Prerequisite: consent of creative writing director.

ENGL 805. Creative Writing: Poetry (3). Advanced work in creative writing; literary poetry. Repeatable for credit. Prerequisite: consent of creative writing director.

ENGL 875. MFA Final Writing Project (1-6).

ENGL 880. Writer's Tutorial: Fiction (3). S/U grade only. Tutorial work in creative writing in literary fiction with visiting writer. Prerequisite: consent of creative writing director.

ENGL 881. Writer's Tutorial: Poetry (3). S/U grade only. Tutorial work in creative writing in literary poetry with visiting writer. Prerequisite: consent of creative writing director.

Linguistics

Courses for Graduate/Undergraduate Credit

ENGL 667. English Syntax (3). Cross-listed as LING 667. Studies the basic principles of English syntax, covering the major facts of English sentence construction and relating
them to linguistic theory. Prerequisite: ENGL 315 or equivalent or departmental consent.

ENGL 672. Studies in Language Variety (3). Cross-listed as LING 672. Introduces the study of language variety with special attention to regional and social dialect in America and methods of studying it. May be repeated for credit when content varies. Prerequisite: ENGL 315 or departmental consent.

ENGL 681. Editing American English (3). Students master the rules and conventions of grammar, sentence structure, spelling, punctuation, usage, and mechanics, and learn how to apply them while they are revising and editing a written text. Students work as tutors in the Writing Center to learn and understand the practical application of editing rules. Includes instruction in the conventions of editing Standard English (also known as Edited American English) and in methods of effective tutoring. Prerequisites: ENGL 101 and 102.

ENGL 727. Teaching English as a Second Language (2-3). Cross-listed as LING 727. Discusses current methods of teaching English to non-native speakers. Students learn to analyze interlanguage patterns and to design appropriate teaching units for class and language laboratory use.

**Literature**

**Courses for Graduate/Undergraduate Credit**

ENGL 503. Studies in American Literature I (3). The major fiction, poetry, and nonfiction prose of the classic American period. Discussions may include the historical evolution of American letters, the development of the novel and romance, the transcendental period, and the rise of western and regional literatures. Prerequisite: junior standing and one college literature course.

ENGL 504. Studies in American Literature II (3). Fiction, poetry, and drama from the late 19th century to after World War II. Readings also may include literary criticism and other types of nonfiction prose. Discussions cover themes, topics, and literary forms inspired by the social and cultural movements and events of the first half of the 20th century. Prerequisite: junior standing and one college literature course.

ENGL 512. Studies in Fiction (3). Subjects announced each semester. Repeatable once for credit. Prerequisite: junior standing and one college literature course.

ENGL 513. Studies in Poetry (3). Subjects announced each semester. Repeatable once for credit. Prerequisite: junior standing and one college literature course.

ENGL 514. Studies in Drama (3). Subjects announced each semester. Repeatable once for credit. Prerequisite: junior standing and one college literature course.

ENGL 515. Studies in Shakespeare (3). Subjects announced each semester. Repeatable for credit, except by students who take ENGL 340. Prerequisites: junior standing and one college literature course, or instructor’s consent.

ENGL 521. Readings in Medieval Literature (3). The Pearl Poet, medieval lyric, drama, epic, romance, and saga. Prerequisites: junior standing and one college literature course, or instructor’s consent.

ENGL 522. Readings in Renaissance Literature (3). Sidney, Spenser, Shakespeare (poetry), Donne, Jonson, Milton, and their contemporaries. Prerequisites: junior standing and one college literature course, or instructor’s consent.

ENGL 524. Readings in Restoration and 18th Century Literature (3). Swift, Pope, Johnson, and their contemporaries. Prerequisites: junior standing and one college literature course, or instructor’s consent.

ENGL 525. Readings in Romantic Literature (3). Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, and their contemporaries. Prerequisites: junior standing and one college literature course, or instructor’s consent.

ENGL 527. Readings in Victorian Literature (3). Writers from Carlyle to Yeats studied in relation to political events and the social, scientific, and religious thought of the age. Prerequisites: junior standing and one college literature course, or instructor’s consent.

ENGL 532. Studies in Modern British Literature (to 1950) (3). English and Irish literature of the first half of the 20th century. Subjects announced each semester. Repeatable once for credit. Prerequisite: junior standing and one college literature course.

ENGL 533. Studies in Contemporary Literature (3). Modern literature, primarily British and American, since 1950. Subjects announced each semester. Repeatable once for credit. Prerequisites: junior standing and one college literature course.

ENGL 535. Literary Images of Women: Diverse Voices (3). Cross-listed as WOMS 535. Explores literature written in English by women of diverse ethnic, racial, class, and other backgrounds, as well as of varying sexual orientations, ages, and degrees of physical ability. Materials analyzed both as literary works and as expressions of women’s differences from one another. Works selected on their specific attention to the question of gender as it intersects with other elements of culture.

ENGL 536. Writing by Women (3). Cross-listed as WOMS 536. Explores various themes in critical approaches to literature composed by women writers, especially those whose works have been underrepresented in the literary canon. Genres and time periods covered, critical theories explored and specific authors studied vary in different semesters.

ENGL 580. Special Studies (1-3). Topic selected and announced by the individual instructor. Repeatable once for credit. Prerequisite: departmental consent. Prerequisites: junior standing and one college literature course.

ENGL 610. Old English (3). Cross-listed as LING 610. Studies the Old English language in enough detail to enable the reading of some prose and poetry, including parts of Beowulf in the original. Some literature, including all of Beowulf, is read in translation, with attention to important literary and cultural features of the period. Prerequisites: junior standing and one college literature course.

ENGL 615. Chaucer (3). Chaucer’s Canterbury Tales, Troilus and Cressida, and selected lyrics, with a few works by other late 14th century authors and some critical and historical studies. Focuses on close reading of Chaucer in Middle English. Prerequisites: junior standing and one college literature course, or instructor’s consent.

ENGL 750. Workshop (2-4). Repeatable for credit.

**Courses for Graduate Students Only**

ENGL 800. Introduction to Graduate Study in English (3). Prepares students to perform effectively in graduate classes in English. Covers: (1) basic bibliographical tools; (2) terminology both technical and historical; (3) various approaches to the study of literature, such as intrinsic analysis of a literary work, the relationships of biography to literary study, and the relevance of other disciplines, such as psychology, to literature; and (4) the writing of interpretive and research essays. Maintains a balance between criticism and research throughout the semester.

ENGL 814. Graduate Studies in British and World Literature before 1900 (3). Examines the major genres and authors of literature before 1900. Typical subject matter will include the rise of the novel, the changing role of poetry, and the evolution of drama as written by the major figures. Authors may include Defoe, Richardson, Fielding, Austen, and Cervantes among the novelists; Dryden, Pope, Blake, Rilke, and Lorca among poets; and Webster, Ford, Behn, and Wilde among the dramatists. Repeatable once for credit with a change of content. Prerequisite: Graduate standing.

ENGL 817. Graduate Readings in 20th Century British Literature (3). Yeats, Joyce, Lawrence, Auden, Spencer, and their contemporaries.

ENGL 821. Graduate Readings in American Literature I (3). From the beginnings to 1870 emphasizing Emerson, Thoreau, Hawthorne, Melville, Whitman and Dickinson.

ENGL 822. Graduate Readings in American Literature II (3). From 1870 to 1920 emphasizing James, Twain, Crane, Dreiser, Robinson and Frost.

ENGL 823. Graduate Readings in American Literature III (3). From 1920 to 1970, including Eliot, Stevens, Hemingway, Faulkner, and their contemporaries.
ENGL 830. Graduate Studies in Drama (3). Selected topics in the history and nature of dramatic literature.

ENGL 832. Graduate Studies in Fiction (3). Selected topics in the development of the form and content of prose fiction.

ENGL 834. Graduate Studies in Poetry (3). Selected topics in forms, techniques, and history of poetry.

ENGL 840. Graduate Studies in Criticism (3). Selected topics in the theory and practice for literary criticism.

ENGL 841. Graduate Studies in Contemporary Literature (3). Covers selected topics in the literature of the last quarter-century, including literature in translation. Deals with a broad range of authors and genres. Repeatable for credit with change of content and departmental consent.

ENGL 845. Graduate Studies in a Major Author (3). Careful study of the works of a major author with readings in secondary sources; reports, discussions, and papers. Repeatable for credit with change of content.

ENGL 855. Directed Reading (2-3). For graduate students who want to pursue special research in areas not normally covered in course work. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

ENGL 860. Graduate Seminar in Special Topics (1-3). Intensive study of selected texts, writers, or literary problems. Seminar discussions, reports, and research projects. Repeatable for credit with departmental consent.

ENGL 870. Master’s Essay (1-3).

Ethnic Studies
See Community Affairs, School of.

Geography (GEOG)
Although there is no graduate program in geography, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit
GEOG 695. Special Studies in Geography (1-3). 3R or 2R; 3L. Lab fee (Lab is included when appropriate.) Systematic study in a selected area of topical interest in geography. Course given on demand; repeatable for credit when content differs. May require field trips. Prerequisite: junior standing.

Geology (GEOL)
Graduate Faculty
Professors: William D. Bischoff (dean, Fairmount College of Liberal Arts and Sciences), Salvatore J. Mazzullo
Associate Professors: Collette D. Burke, John C. Gries (chairperson), Wan Yang (graduate coordinator)
Assistant Professors: Hongsheng Cao, William Parcell

Although applications are not being accepted for the MS program in geology pending restructuring of the graduate program, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit
GEOL 526. Sedimentary Geology (3). 2R; 3L. Origin, classification, primary structures, and physicochemical processes controlling deposition of sedimentary rocks. Reviews diagenesis of carbonate rocks and evaporites. Includes a survey of modern and ancient sedimentary depositional environments and petrographic study of sedimentary rocks in thin sections. May require field trips. Prerequisite: GEOL 102 (with lab) or 111.

GEOL 540. Field Mapping Methods (2). 6L. Field mapping methods with special reference to use of level, compass, barometer, alidade, and air photos. Field trips required. Prerequisite: GEOL 102 (with lab) or 111 or GEOL /GEOG 201.

GEOL 544. Structural Geology (3). 2R; 3L. Stress-strain theory and mechanics of rock deformation, description, and genesis of secondary structural features in crustal rocks resulting from diastrophism, elements of global tectonics, and laboratory solution of geologic problems in three dimensions and time. May require field trips and field problems. Prerequisites: MATH 112 or 123; GEOL 312; and GEOL 324 or 526.

GEOL 552. Physical Stratigraphy (3). 2R; 3L. Description, classification, methods of correlation, and determination of relative ages of stratigraphic rock units; stratigraphic principles and practice; importance and use of biostratigraphy; the nature of cyclic sedimentation and controls on deposition; elements of sequence stratigraphy; measurement and correlation of stratigraphic sections in outcrops. Requires field trips. Prerequisites: GEOL 312 and 526.

GEOL 560. Geomorphology and Land Use (2). General education further study course. Identification of landforms and their genetic processes producing landforms; the influence of geomorphology in aspects of natural hazards such as landslides, floods, earthquakes, and volcanic activity; soil erosion, drainage basin modification, coastal and desert environments, mineral resource exploitation, and their effects on humans; importance of these influences in environmental management and land-use planning. Prerequisite: GEOL 111 or GEOL 102 or GEOL /GEOG 201.

GEOL 564. Remote Sensing Interpretation (3). 2R; 3L. Introduces interpretation techniques for most types of images acquired by remotely positioned means. Physical principles that control various remote sensing processes using the electromagnetic spectra are applied to geology, land use planning, geography, resource evaluation, and environmental problems. Derivative maps generated from a variety of images. May require field trips. Prerequisite: GEOL 102 or 111 or GEOL/GEOG 201.

GEOL 570. Biogeology (3). 2R; 3L. General education further study course. Systematic survey of major fossil biogeological materials, analysis of the origin and evolution of life, and paleoecological interpretation of ancient environments and climates. Includes hand lens and binocular microscopic examination of major fossil biogeological materials. Includes application of analyzed fossil data to the solution of problems in biogeochemistry; paleoecology; paleoclimatology; and paleoekography. Cites examples from fields of invertebrate, vertebrate and micropaleontology, and palynology. May require museum and field trips. Prerequisite: GEOL 312.

GEOL 574. Special Studies in Paleontology (3). 2R; 3L. General education further study course. A systematic study in selected areas of biogeology and paleontology. Content differs, upon demand, to provide in-depth analysis in fields of: (a) invertebrate paleontology, (b) vertebrate paleontology, (c) micropaleontology, (d) palynology, and (e) paleoecology. Gives appropriate laboratory instruction in the systematics, taxonomy, and biogeological relationships within the selected fields listed. May require field trips. Repeatable for credit to cover all five areas listed.

GEOL 621. Geochemical Cycling (3). Capstone course. The geochemistry of earth materials and the important geochemical processes; cycles operating on and within the atmosphere, hydrosphere, and lithosphere through time; anthropogenic effects on these cycles today. Prerequisites: GEOL 102 (with lab) or GEOL 111 and CHEM 111; or instructor’s consent.

GEOL 630. Field Studies in Geology (2-6). 1A. Geology of Kansas (1-3); (B) Geology and Natural History of Tropical Marine Environments; (C). Off-campus, systematic field study in a selected area of geological significance. Course given upon demand; repeatable for credit when locality and/or content differ. Where appropriate, travel, lodging, and board costs are charged. Prerequisite: instructor’s consent.

GEOL 640. Field Geology (6). Capstone course. Field investigation of sedimentary, igneous, and metamorphic rock units and their structures. Includes the application of mapping methods in solving geologic problems. Held at an off-campus field camp for five weeks (including weekends). Preparation of geologic columns, sections, maps, and an accompanying report are due on campus during the sixth week. Prerequisites: GEOL 324, 540, 544, and 552.
GEOL 680. Geologic Resources and the Environment (3). 2R; 3L. Occurrence and origin of metallic and nonmetallic economic mineral deposits; laboratory examination of ores and industrial minerals. Occurrence and supply, regeneration, and future demand for water and soil resources; and fossil and nuclear fuels. Studies environmental aspects of resource exploitation and use, generation and disposal of waste, environmental hazards, and reclamation. May require field trips. Prerequisite: GEOL 324.

GEOL 682. Petroleum Geology (3). 2R; 3L. The origin, migration, and accumulation of oil and gas in the earth’s crust; reservoir trap types in common hydrocarbon fields, origin and types of porosity systems, and distribution of world petroleum supplies. Introduces subsurface study techniques. May require field trips. Prerequisites: GEOL 526 and 552.

GEOL 684. Methods of Subsurface Analysis (2). 1R; 3L. Methods of remotely logging and describing the geologic occurrence of subsurface strata; characterization of subsurface strata, including laboratory analysis of recovered subsurface samples; application to petroleum geology, mineral resource evaluation, and environmental geology. Prerequisites: GEOL 312, 526, and 552; or instructor’s consent.

GEOL 690. Special Studies in Geology (1-5). Systematic study in selected areas of geology. Offered on demand; repeatable for credit when content differs. Requires laboratory work or field trips (instructor’s option). Prerequisite: instructor’s consent.

GEOL 698. Independent Study in Geology (1-3). Independent study on special problems in selected areas of geology: (a) general, (b) mineralogy, (c) petrology, (d) structural, (e) paleontology, (f) economic geology, (g) sedimentation, (h) stratigraphy, (i) geophysics, and (j) petroleum. Requires a written final report. Prerequisite: consent of sponsoring faculty.

GEOL 702. Environmental Science I (5) 2R; 3L. Advanced theoretical and applied principles of the interdisciplinary study of environmental science. Includes chemical cycling, atmospheric chemistry, aquatic chemistry, and phase interactions. Prerequisite: acceptance in the master’s program in environmental science or instructor’s consent.

GEOL 703. Environmental Science II (5) 2R; 3L. Advanced theoretical and applied principles of the interdisciplinary study of environmental science. Includes environmental chemical analysis, environmental toxicology, aquatic microbiology, environmental biochemistry, water treatment, photochemical smog, and hazardous waste chemistry. The laboratory portion addresses local environmental problems from a risk assessment perspective. GEOL 702 and 703 (or equivalent) are required for all graduate students in the master’s of environmental science program. Prerequisite: GEOL 702 or instructor’s consent.

GEOL 704. Environmental Science Colloquium (1). Cross-listed as CHEM 704. Students in the master environmental science are required to enroll two semesters during their program of study. Includes presentations by guest speakers and required readings for class discussion. May also include student involvement in environmentally related community groups and projects. Graded S/U only. May be repeated for up to four hours credit.

GEOL 706. Environmental Science Internship (3-6). Cross-listed as CHEM 706. Students in the master’s program in environmental science may gain interdisciplinary skills in environmental science by participating in applied and/or basic research internship projects with local businesses, industry, or government agencies. Internship option is an alternative to thesis research for degree requirements. Enrollment in internship projects requires an approved proposal. Completion of an internship for graduation requires a formal oral presentation of the internship activity and a written report. Prerequisites: Environmental Science I and II.

GEOL 720. Geochemistry (3). The chemistry of natural aqueous solutions and their interaction with minerals and rocks; thermodynamics and kinetics of reactions; emphasizes application to sedimentary environments and environmental problems. Requires some laboratory work. Prerequisites: GEOL 324 and Chem 212 or instructor’s consent.

GEOL 724. Soils (3). Geologic analysis of soil types, their formation, occurrence, and mineralogy; soil management and conservation; environmental aspects of soil occurrence including stability studies, pollution, and reclamation.

GEOL 726. Carbonate Sedimentology (3). 2R; 3L. The origin and genetic description of carbonate particles, sediments and rocks, mineralogy and textural classifications; depositional environments in carbonate rocks and analysis of modern and ancient depositional system. May require field trips. Prerequisites: GEOL 526, 552, or equivalents.

GEOL 727. Carbonate Diagenesis (3). 2R; 3L. Analyzes diagenesis of carbonate sediments and rocks. Includes mineralogic stability in natural waters, meteoric, marine and deep-burial diagenesis, dolomitization processes and products; trace-elements and isotopes as diagenetic tools, cathodoluminescence and x-ray diffraction studies of carbonates; origin and porosity. Prerequisite: GEOL 726 or instructor’s consent.

GEOL 730. Perspectives: Geoscience and the Environment (3). A perspective of global issues of geo-environmental concern with regard to past, present, and future exploitation, use, and availability of earth’s resources; marine and terrestrial pollution and resource use; water, minerals, and fuel resources; population growth and resource availability; the Greenhouse effect, global climatic change, and sea level rise and their effects on populations; future trends in environmental management and remediation of environmental problems of geologic scope. Prerequisite: Geol 312, 680; or instructor’s consent.

GEOL 740. Basin Analysis (3). A practical course in analysis of petroleum-bearing or other sedimentary basins; emphasizes detailed subsurface mapping to document depositional, tectonic, and burial history of sedimentary basins; subsurface lithologic and geochemical sample analysis and evolution of sedimentary facies systems and hydrocarbons maturation history. Includes compilation of existing data to determine geologic evolution of basins. Prerequisites: GEOL 682, 684, or instructor’s consent.

GEOL 745. Advanced Stratigraphy (3). Analysis of stratigraphic sequences at the local to global scales in terms of sequence stratigraphic concepts and high-resolution interpretation of depositional sequences (from outcrop and subsurface data); seismic sequence stratigraphy, and significance of unconformities in sequence identification and development; local to global correlation of sequences and sea level history through time; cratonic sequences of North America. Required 7-day field trip. Prerequisites: GEOL 312, 526, and 726.

GEOL 750. Workshop in Geology (1-3). Short-term courses with special focus on geological problems. Prerequisites: graduate standing and/or instructor’s consent.

GEOL 751. Advanced Geohydrology (3). Integrations of practical and theoretical coverage of subsurface fluid flow as applied to shallow aquifers. Cover the mass transport in both the saturated and vadose zones as well as the occurrence and movement of non-aqueous fluids. Covers groundwater quality, sources of groundwater contamination, retardation of contaminants, retardation and attenuation of dissolved solids and the response of inorganic and organic substances to subsurface aqueous and framework chemistries. Computer simulation models used whenever practical along with detailed analysis of case histories, including those related to environmental geoscience. Prerequisite: GEOL 650, 681, MATH 344, or instructor’s consent.

GEOL 760. Exploitation Geophysics (3). Introduces the theory and application of geophysical techniques for hydrocarbon, mineral, and groundwater prospecting. Includes use of seismic techniques; instrumentation for acquisition on land and sea; seismic processing; structural and stratigraphic modeling; 3-D seismic exploration; and seismic refraction tech-
M. Prerequisites: completion of geology undergraduate math and physics requirements; MATH 344 or 555; GEOL 324 and 544; and instructor’s consent.

GEOL 781. Advanced Numerical Geology (3). Involves practical implementation of algorithms and computer code. Includes the analysis of multivariate techniques and the development of the computer/algorithm skills needed to handle very large databases. Covers standard statistical approaches to data analysis; treatment of applied linear algebra and matrix theory; and the application of linear and nonlinear discriminate analysis, various factor analytic techniques, hard and fuzzy clustering, linear and non-linear unmixing analysis, and other forms of data modeling. Prerequisites: GEOL 681 or equivalent, competence in one or more high level computer languages, MATH 344 or 555, and instructor's consent.

Courses for Graduate Students Only

GEOL 800. Research in Geology (3-9). Research in special areas of geology: (a) general, (b) mineralogy; (c) petrology; (d) structural, (e) paleontology; (f) economic geology; (g) sedimentation, (h) stratigraphy, (i) geophysics, and (j) petroleum. Requires a written final report. Prerequisite: consent of sponsoring faculty.

GEOL 810. Advanced Graduate Studies in Geology (1-6). Systematic study in a selected topic of professional or applied geology. Course given upon demand; repeatable for credit when content differs. May require field trips. Prerequisites: graduate standing, instructor's consent, and two years of professional postgraduate practice in geology.

GEOL 821. Special Studies in Geochemistry (4). A systematic study in selected areas of geochemistry. Content differs upon demand to provide in-depth analysis in fields of (a) sedimentary carbonate and silicate geochemistry and mineralogy; (b) organic geochemistry; (c) high pressure and temperature thermodynamics of earth materials; (d) exploration geochemical geochemistry; (e) exogenic geochanical cycling; (f) stable isotope geochemistry. May be repeated for credit to cover all six areas listed. May require some laboratory work. Prerequisite: GEOL 720 or instructor's consent.

GEOL 826. Sedimentary Petrology (3). Detailed study of sedimentary rocks and their origins. Facilitates determinations of mineral compositions, textures, structures, fabrics, and petrogenetic relationships by the use of thin sections, peels, and geochemical analyses. May require field trips. Prerequisite: GEOL 526.

GEOL 830. Field Studies in Geology (2-6). Off-campus, systematic field study in a selected area or region of geologic significance. Course given upon demand; repeatable for credit when local and content differ. Where appropriate, travel, lodging, and board costs are charged. Prerequisites: summer field geology (or equivalent) and instructor’s consent.

GEOL 840. Geotectonics (3). Physical and geological principles of crustal deformation and tectonic interpretation. Studies the relationship of interior earth processes to crustal deformation with special reference to global tectonics. May require field trips. Prerequisite: instructor’s consent.

GEOL 852. Field Stratigraphy (3). 2R; 3L. Advanced concepts and principles of stratigraphic analysis and interpretation emphasizing original sources and current research investigations. Required field problem and field trips. Prerequisites: GEOL 544 and 552 or instructor’s consent.

GEOL 860. Special Topics in Geophysics (3). Systematic study in one or more selected topics of theoretical and applied geophysical techniques. Emphasizes applications of state-of-the-art concepts and principles to problems of regional to global significance. Potential topics include seismic stratigraphy, vertical seismic profiling, reservoir petrophysical response estimations, shallow aquifer geophysical modeling, geophysical basin modeling, and regional and global environmental modeling. Prerequisites: GEOL 681, 761; MATH 344 or 555; or instructor's consent.

GEOL 870. Advanced Biogeochemistry (3). 2R; 3L. Paleocological reconstruction of ancient plant/animal communities and environments emphasizing community structure, biostatigraphy, synthesis of total raw data, and problem solving. May require field trips. Prerequisite: a course in biogeochemistry or equivalent.

GEOL 881. Special Topics in Numerical Geology (3). Systematic study in one or more topics of theoretical and applied quantitative analysis appropriate for environmental and geological research. Emphasizes applications of state-of-the-art concepts and principles to problems of regional to global significance. Potential topics include quantitative shape analysis, petrographic image analysis, multi-variable linear and non-linear unmixing, extrapolation and interpolation techniques, quantitative isotope chronostatigraphic techniques, modeling global phenomena, and simulations of multi-phase flow in aquifers and reservoirs. Prerequisites: GEOL 681, 781; and Math 344 or 555; or instructor's consent.

GEOL 890. Thesis (1-6). Prerequisite: departmental consent.

Gerontology

See Community Affairs, School of.

History (HIST)

Graduate Faculty

Distinguished Professor: H. Craig Miner (Willard W. Garvey Distinguished Professor of Business History), Niall Shanks (Curtis D. Gridley Professor of the History and Philosophy of Science)

Professors: John E. Dreifort (graduate coordinator), Anthony P. Glythiel, Philip D. Thomas

Associate Professors: Judith R. Johnson, Willard C. Kudler, Arieh Loftus, Keith H. Pickus (associate dean, Fairmount College of Liberal Arts and Sciences), Jay Price (director of public history program), Craig L. Torbenson

Assistant Professors: Gorge Dehner, Helen Hundley, Robert Owens

Master of Arts and Areas of Specialization

The history department offers courses of study leading to the Master of Arts (MA) degree with specialization in U.S. history, European history, and public history.

Admission Requirements

Admission to the MA program in history requires completion of an undergraduate major in history, or a minimum of 15 hours of history; a grade point average of 2.750 or better, including all undergraduate hours; and a 3.000 grade point average in history. Under unusual circumstances applicants with less than a 3.000 grade point average in history may be granted a probationary or conditional admission. International students are required to have a minimum TOEFL of 600 paper-based, 250 computer-based, or 100 Internet-based.

Degree Requirements

Students may follow one of three plans for a graduate degree in history: a thesis program, a nonthesis program, and a program in public history.

Thesis Program

Course .................................................. Hrs.
HIST 725, Advanced Historical Method ........ 3
HIST 727, Readings in History .................. 3
HIST 729, 730, 733, 734, Seminars ............. 9
HIST 500- and 600-level Courses ............... 12
HIST 801, Thesis Research ....................... 2
HIST 802, Thesis ................................... 2
Total .................................................. 31

At least one seminar and one lecture-based course must be taken outside of the student’s primary comprehensive field.

Students must pass a foreign language competency examination, pass a written examination in one comprehensive field, and pass an oral examination in defense of the thesis. The written examination must precede the oral examination.

Nonthesis Program

Course .................................................. Hrs.
HIST 725, Advanced Historical Method ........ 3
HIST 727, Readings in History .................. 6
HIST 729, 730, 733, 734, Seminars ............. 12
HIST 500- and 600-level Courses ............... 15
Total .................................................. 36

Students must pass written examinations in two comprehensive fields.

Thesis Program in Public History

Course .................................................. Hrs.
HIST 701, Introduction to Public History .......... 3
One course selected from the following: .......... 3
HIST 702, Historical Preservation
HIST 703, Museum Administration
HIST 705, Introduction to Archives
HIST 704, Interpreting History to the Public ...... 3
HIST 725, Advanced Historical Method .......... 3
HIST 729, 730, 733, 734, Seminars ............. 6
Comprehensive Fields. Students may select from the following areas for their comprehensive examinations.

U.S. History
The Ancient and Medieval Worlds
Modern Europe
Public History

Courses for Graduate/Undergraduate Credit

> HIST 501. The American Colonies (3). General education further study course. Emphasis on the competition of the New World, generalizing the British colonists and their development.

> HIST 502. The American Revolution and the Early Republican Period (3). General education further study course. Examination of selected phases of the revolutionary, confederation, and federal periods.

> HIST 503. The Age of Jefferson and Jackson (3). General education further study course. This course examines the eras of Thomas Jefferson and Andrew Jackson; that is, roughly the period from 1800 to 1850. During that time, the United States experienced tremendous territorial growth, cultural ferment and reform movements; engaged in two major international wars and a number of Indian conflicts; and moved toward the sectional showdown over slavery that culminated in a bloody Civil War. The focus is on political, social, and military history, as America expanded from the Mississippi River across the North American continent.

> HIST 504. Civil War (3). General education further study course. This course explores the origins and history of the bloodiest war this nation has ever fought. Students will study ante-bellum America, focusing on the sectional differences between North and South, the institution of slavery, and the abolitionist crusade; and the battles of the Civil War.

HIST 505. The United States, 1865 to 1900 (3). Covers the great economic, political, social, and moral questions of the late 19th century. Includes industrialism, the frontier, the city, immigration, race, class, culture, empire, gender, and reform.

> HIST 507. The United States, 1900-1945 (3). General education further study course. Major topics explored in this class include World War I, the Great Depression, and World War II. While this period in U.S. history is noteworthy for conflict, consensus in the form of Progressivism, the New Deal, and the emergence of the modern presidency also characterize these decades. An examination of political leadership will be a major component of this course. The emphasis, however, will be “history from the bottom up” as we examine the lives of ordinary Americans.

> HIST 508. The United States Since 1945 (3). General education further study course. In this time period, the United States emerged as a world leader. Although the Cold War became a defining force both at home and abroad, “hot” wars in Korea and Viet Nam also produced social, economic, and political repercussions in the United States. This course explores major issues and events of the period with a focus on international relations, the Civil Rights Movement, and the growth of the imperial presidency.

HIST 510. Women in Early America, 1600-1850 (3).

HIST 511. Women in Early America, 1850-present (3).

HIST 512. Women and Reform in America, 1830-present (3).

HIST 513. Women in Ethnic America (3). Cross-listed as ECON 627.

HIST 514. History of American Business (3). A history of American enterprise from colonial times to the present, emphasizing the industrial age since the Civil War, on case studies of individual firms, on biographies of business people, and on the social and political impact of business.

> HIST 517 & >HIST 518. Constitutional History of the United States (3 & 3). General education further study courses. 517: The evolution of the constitutional system from English and colonial origins through the Civil War. 518: American constitutional development from Reconstruction to the present.

> HIST 521. Diplomatic History of the United States to 1914 (3). General education further study course. Beginning with the colonial era, this course examines the diplomatic history of the United States to the brink of American participation in the First World War. The focus will be on the movement toward independence, territorial expansion across the continent, the Civil War and the emergence of America as a world power.

> HIST 522. Diplomatic History of the United States Since 1900 (3). General education further study course. This course examines American diplomatic history during the twentieth century; that is, from the era of Theodore Roosevelt and the “Big Stick” through the presidency of Bill Clinton. This was a period when the United States emerged as a major player in global affairs, engaged in numerous military conflicts, waged a cold war against the “evil empire” of the Soviet Union, and ultimately stood alone as the world’s only economic and military superpower.

> HIST 525. American Military History (3). General education further study course. This course surveys the American military heritage and its role in shaping the modern United States. Students will study the history of warfare from frontier conflicts during the colonial period through Desert Storm; focusing on the most significant wars and battles, and the evolution of military institutions and their impact on American social, economic, and political traditions.

> HIST 528. History of Wichita (3). General education further study course. A history of Wichita, Kansas, 1865-present, emphasizing the lessons of local history for future planning and its importance to an individual citizen’s sense of place.

HIST 530. The American Woman in History (3). Examination of the history, status, and changing role of women in American society.

> HIST 531. American Environmental History (3). General education further study course. Examines the historical, physical, economic, scientific, technological, and industrial interactions of the peoples of America with their environment. Emphasizes the period, 1800-present.

HIST 532. Women in Ethnic America (3). Cross-listed as WOMS 532. An in-depth, thematic understanding of the historical experiences of women of color across space and time in U.S. history. Employing a female-centered framework of analysis, course probes the intersections of race, class, gender, and sexuality in women’s lives.

HIST 533. The American City: from Village to Metropolis (3). A study of urbanization and urban life from colonial times to the present—changing lifestyles and thought patterns, urban architecture, ethnic assimilation, emergence of the suburb, political and ecological adjustments, and the influence of new technology and forms of business organization.

HIST 534. History of the Old South (3). Examines Southern civilization prior to the American Civil War.

> HIST 535. History of Kansas (3). General education further study course. History of the Kansas region from Spanish exploration to the present, emphasizing the period after 1854.

> HIST 536. Survey of American Indian History (3). General education further study course. Surveys the history of Native American nations from pre-historic times to the present. Includes the process of European colonization and indigenous responses; the strategies of accommodation, assimilation, and resistance; and the resurgence of tribalism in the 20th century.

HIST 537. The Trans-Mississippi West (3). Spanish, French, and Anglo-American penetration and settlement west of the Mississippi River from the 16th century to about 1900.

> HIST 538. The American West in the Twentieth Century (3). General education further study course. Explores the growth of the trans-Mississippi West in the 20th century, emphasizing political development, economic growth, cultural manifestations, the role of minority groups, and the impact of science and technology.

> HIST 541. Modern France (3). General education further study course. History of the major trends in French history from Napoleon to DeGaulle emphasizing French attempts to adjust politically, socially, economically, and culturally to the changing conditions of modern industrial society.
HIST 553. History of Mexico (3). General education further study course. "Poor Mexico: So far from God, so close to the United States." Examines the influences of the Maya, the everyday life of the Aztecs, and the destruction wrought when the Spanish invaded the New World. Major figures and the roles they played in Mexican history such as Santa Anna, Benito Juarez, and Pancho Villa emerge in this study. Course concludes with the impact of a 2000-mile border with the United States and a brief look at NAFTA.

HIST 558. The Ancient Near East (3). General education further study course. Examines the social, political, and cultural history of the Mediterranean and Near East from the foundation of cities and the invention of writing in the third millennium to the dark ages. Covers the major civilizations of Mesopotamia, Iran, Egypt, and Syria-Palestine through both their writings and material remains. Special attention will be given to the Minoans and Mycenaeans.

HIST 559. Classical Athens (3). General education further study course. Focuses on Athens from the sixth to the fourth centuries, from the emergence of the Greek city state to the age of Demosthenes. Examines how Athens founded and maintained the earliest democracy and how individuals such as Socrates, Pericles, Plato, and Aristotle fit into their society. Other topics may include warfare, the family, farming, commerce, and the law.

HIST 560. The Hellenistic World and Rise of Rome (3). General education further study course. Begins with the conquests of Alexander the Great and provides an overview of the new Greek world which he left behind. Will also examine changes in Greek culture and society as a result of the spread of Hellenism to the older kingdoms of the New East and India. Will include the rise of the Roman Republic in the context of the Greek world in the first century BC with the defeat of Cleopatra, or the last queen of Egypt.

HIST 562. The Roman Republic (3). General education further study course. Covers the period of early Roman history from the founding of the city to the first emperor Augustus. Includes coverage of wars and the Roman army, government, society, and culture. Emphasizes the end of the republic during the dictatorship of Julius Caesar, the civil wars, and the role of the emperor Augustus.

HIST 563. The Roman Empire (3). General education further study course. Focuses on social and cultural achievements of the Roman empire starting with the dissolution of the republic and the invention of the empire by Emperor Augustus in the 1st century BC. Ends with the sack of Rome in the 5th century AD. Emphasizes the spread of Roman law, government, and culture to areas outside of Italy; including Roman Britain, Judea, and Roman Egypt; the rise of Christianity; and the reasons for the decline of Rome.

HIST 566 & HIST 567. Medieval History (3 & 3). General education further study courses. 566: the history of Europe from the fall of the Roman Empire through the Crusades, 500 to 1200. 567: history of Europe, 1200 to 1500.

HIST 568. Social, Economic, and Intellectual History of the Middle Ages (3). Examines fundamental themes in the development of the social, economic, and intellectual history of the Middle Ages, emphasizing the rise of cities, universities, scholastic thought, diverse patterns of daily life, and economic activities of the Middle Ages.

HIST 569. Medieval England (3). An examination of the development of Medieval England from the Anglo-Saxon Invasions until the end of the 14th century. The Norman Conquest, the rule of the Angevins, the reign of Edward I, and the daily life of those peoples who become the English will receive particular attention.

HIST 575. The Italian Renaissance (3). General education further study course. Italian history from the 14th through the 16th centuries emphasizing cultural achievements.

HIST 576. The Reformation (3). General education further study course. The great religious changes in the 16th century in the political, social, and intellectual contexts.

HIST 577. Medieval Women (3). Deals with the lives and accomplishments of Christian women in Late Antiquity and the Middle Ages.

HIST 581. Europe, 1789-1870 (3). General education further study course. A focused survey of European social, cultural, and political history from 1789-1870. Among the topics covered are the Enlightenment, the French Revolution, industrialization, romanticism, nationalism, liberalism, socialism, the revolutions of 1848, and the role of women in European society.

HIST 582. Europe, 1871-1945 (3). General education further study course. A focused survey of European history between the years 1871-1945. Among the subjects covered are the phenomena of nation building and the imperial project, the rise and growth of European socialism, the emergence of a “mass society,” the role of women and minorities, the origins and impact of World War I, inter-war politics and diplomacy, the Nazi Era, and World War II.


HIST 584. History of Early Russia (3). General education further study course. Covers the social, political, and cultural history of Kievan and Muscovite Russia.

HIST 589. History of Imperial Russia (3). General education further study course. A survey of the political, social, and cultural history of Imperial Russia.

HIST 592. History of the Soviet Union (3). General education further study course. A survey of Soviet history from the Bolshevik Revolution to the present.

HIST 593. Former Soviet Union (3). General education further study course. An examination of contemporary life in the former USSR: historical background, Marxist/Leninist ideology, industrial and agricultural economies, roles played by women, national minorities and dissidents in Soviet society, the press, literature and art, health care, and prospects for the country’s future.

HIST 639. Religion in America (3). Covers major trends in American religious history focusing on the scholarly issues related to the study of these subjects. Students explore such subjects as religious awakenings, fundamentalism, pentecostalism, and rationalism and examine how historians have studied and disagreed over these topics.

HIST 698. Historiography (3). Required of undergraduate history majors. This capstone course engages students in a systematic analysis of major historians and schools of historical thought. Class assignments and discussion encourage students to examine their own ideas about history as an academic discipline. Prerequisite: 12 upper-division hours in history or instructor consent.

HIST 701. Introduction to Public History (3). Introduces the various areas of public history including historic preservation, archival administration, museum studies, litigation support, and corporate history. Students learn the philosophies, techniques, and practices that comprise the field and ways these areas interact with their academic training. Prerequisite: graduate standing or instructor’s consent.

HIST 702. Historic Preservation (3). Advanced survey of the multifaceted, multidisciplinary field of historic preservation. Presents a broad and sophisticated view of the many arms of preservation in the U.S., as well as the numerous opportunities available to trained professionals in the field. Prerequisite: HIST 701 or instructor’s consent.

HIST 703. Museum Administration (3). Addresses the many facets of museum administration from a specialist’s point of view. Covers collecting, management, law and ethics, and resource development. Gives a close view of the operations of American museums. Prerequisite: HIST 701 or instructor’s consent.

HIST 704. Interpreting History to the Public Explaining the Past (3). Looks at ways history can be communicated to audiences, including scholarly texts, popular written histories, movies, videos, guidebooks, museums, and other similar media. Explores the differences between various forms of historical communication and assesses the ways they reach audiences. Student learn to discern various components of historical texts to use in the design of interpretation materials on their own. Prerequisite: HIST 701 or instructor’s consent.

HIST 705. Introduction to Archives (3). Introduces the basic knowledge, theory, and related skills of archival administration, including the nature of information, records, and historical documentation; the role of archives in modern society; and issues and relationships that affect archival functions. Covers the theory and skills necessary to understand and apply basic archival functions. Prerequisite: graduate standing and/or instructor’s consent.

HIST 725. Advanced Historical Method (3). Reviews basic historical research methods, the general character of field bib-
liographies and recent interpretations, and the techniques of professional narrative development. Required of graduate degree students during their first year of enrollment. Prerequisite: departmental consent.

HIST 727. Readings in History (3). Readings in ancient, medieval, modern, European, and American field bibliographies. Repeatable for credit. Prerequisite: departmental consent.

HIST 729. Seminar in American History (3). Repeatable for credit. Prerequisite: departmental consent.

HIST 730. Seminar in American History (3). Repeatable for credit. Prerequisite: departmental consent.

HIST 733. Seminar in American History (3). Repeatable for credit. Prerequisite: departmental consent.

HIST 734. Seminar in European History (3). Repeatable for credit. Prerequisite: departmental consent.

HIST 750. Workshop in History (1-3). Repeatable for credit but does not satisfy requirements for history majors.

HIST 781. Cooperative Education in History (1-4). Graduate history students participate in internship experiences through the Cooperative Education program. May substitute for HIST 803. A maximum of 4 credit hours of any combination of HIST 803 and HIST 781 may count toward degree requirements with permission from the program area. Prerequisite: instructor's consent. Offered Cr/NCr only.

Courses for Graduate Students Only

HIST 801. Thesis Research (1-2).

HIST 802. Thesis (1-2).

HIST 803. Internship in Public History (1-4). Public history students practice their skills in summer or semester internships. Type and level of responsibility vary depending on student's interests and work setting. Internship should be in an area related to student's MA thesis. Prerequisites: HIST 701 and consent of public history faculty.

HIST 810. Special Topics in History (1-3). Repeatable for credit to a maximum of 6 hours.

Hugo Wall School of Urban and Public Affairs

See Urban and Public Affairs, Hugo Wall School of.

Liberal Studies (LASI)

Graduate Coordinator: David Soles (philosophy) Advisory Committee: Wilson Baldridge (modern languages), Doris Chang (women's studies), Elsie Shore (psychology), Dorothy Billings (anthropology), Jay Price (history)

The Master of Arts in Liberal Studies (MALS) program is designed for people who wish to pursue a particular topical or interdisciplinary interest at the graduate level. The liberal studies program offers students an opportunity to design a program of study to answer their particular needs and interests in a focused, coherent manner.

Admission Requirements
Applications must have a bachelor’s degree from an accredited institution. Applicants must also have a grade point average of 3.00 or better for the last 60 hours of course work. No more than 6 hours of graduate credit from another institution will be considered for transfer into the liberal studies program.

When submitting an application to the Wichita State Graduate School, students must contact the MALS office for an initial interview with the graduate coordinator. In addition, students must complete a brief essay describing their motivation for selecting the liberal studies program, outlining their proposed three areas of study and showing how the program will contribute to their educational and career goals. Deadlines for application are April 1 for the fall semester and October 1 for the following spring semester.

The Liberal Studies Advisory Committee may request that the applicant submit Graduate Record Examination scores (verbal and quantitative).

Three graduate faculty members representing at least two of the three departments in which the student's work will be concentrated should be secured as program advisors. One of these advisors, who must be a graduate faculty member of Fairmount College of Liberal Arts and Sciences, will serve as the student's primary advisor and chair the student's committee.

Before completing the first 12 hours of graduate work in the program, the student must:

1. Complete selection of members of the faculty thesis or terminal project committee and inform the graduate coordinator.
2. With the assistance of this committee, prepare a Plan of Study to be approved by the graduate coordinator and the Graduate School.
3. Complete LASI 800, Research Goals and Strategies, for 3 credit hours.

Once accepted by the Graduate School, the Plan of Study becomes the student’s individualized curriculum and any changes to it must be approved by the student’s thesis or terminal project committee.

Degree Requirements

The structural framework for the degree is a Plan of Study, developed by the student in consultation with faculty in the program. It must include:

1. A minimum of 36 semester hours of credit
2. No more than 12 semester hours from any one department.
3. A maximum of 12 hours in a college other than liberal arts and sciences.
4. At least 22 of the 36 total hours in courses numbered 700 or above.

5. Three of the 36 hours in LASI 800, Research Goals and Strategies.
6. A master’s thesis for 6 hours credit or a terminal project for 6 hours credit.

Graduate Certificate in Great Plains Studies

Fairmount College of Liberal Arts and Sciences offers a Graduate Certificate in Great Plains Studies, an interdisciplinary program for professional or personal enrichment. This certificate is for students interested in taking a concentration of courses from a number of disciplines focusing on a common topic, the Great Plains.

Requirements: Graduate students must meet requirements for admission to the WSU Graduate School in a degree program or nondegree, category A status. They must have a cumulative grade point average of at least 3.00 for all courses comprising the graduate certificate program with no grade below C. The Graduate School does not accept transfer credit for certificate programs.

Great Plains Studies students enrolled in LASI 800 work with the instructor and the Great Plains Studies coordinator to develop an appropriate focus.

Students complete 20 hours of course work, including three required courses (LASI 501, 510, and 800) with the remaining courses selected from these designated courses: ANTH 612, ANTH 613, BIOL 503, BIOL 575, ENGL 860, GEOG 562, GEOG 570, HIST 535, and HIST 536.

Courses for Graduate/Undergraduate Credit

LASI 501. Great Plains Experience (1-3). Offered during fall and spring semesters as a 1-hour field experience and in the summer session as a 3-hour field experience. For students in the Great Plains Studies certificate program. Visit museums, anthropological and archeological sites, nature preserves, and other places of significance in Great Plains Studies. Prerequisite: LASI 201 or 800 or instructor's consent.

LASI 510. Great Plains Seminar (3). For students completing the Great Plains Studies certificate program. Focuses on contemporary issues and critical contexts for research. Students develop research projects appropriate to their classification as undergraduates or graduates and which reflect their particular interests in Great Plains Studies. Supplemental resources provided by faculty through lectures, consultation, course materials, and mentoring. Prerequisites: 12 hours of Great Plains Studies course work; including LASI 201 and 501; undergraduates must have senior status or instructor's consent.

LASI 680. International Student Exchange Program—Graduate 09. The International Student Exchange Program encourages graduate students to attend a university outside the USA while retaining full-time student status and paying regular tuition at WSU. A student who wishes to enter this program must apply. Application forms may be obtained from the WSU Office of International Education; after that the student meets with his/her assigned program adviser to request aca-
Linguistics (LING)

Graduate Faculty

Professors: Tina L. Bennett, Lawrence M. Davis

Although there is no graduate program in linguistics, the following courses are available for graduate credit.

Group A—Basic Linguistic Theory

Courses for Graduate/Undergraduate Credit

LING 667. Linguistics. English Syntax (3). Cross-listed as ENGL 667. Studies the basic principles of English syntax, covering the major facts of English sentence construction and relating them to linguistic theory. Prerequisite: LING 315 or equivalent or departmental consent.

LING 672. Linguistics. Studies in Language Variety (3). Cross-listed as ENGL 672. Introduces the study of language variety, emphasizing regional and social dialect in America and methods of studying it. May be repeated for credit when content varies. Prerequisite: LING 315 or departmental consent.

Group B—Linguistic Study of Specific Languages or Language Groups

Courses for Graduate/Undergraduate Credit

LING 505A. French. Advanced Phonetics and Diction (2). Cross-listed as FREN 505. Includes articulatory phonetics, phonemics, sound/symbol correspondences, dialectal and stylistic variations. Required for future French teachers. Prerequisite: any 200-level course or departmental consent.

LING 505B. Russian. Russian Phonology (2). Cross-listed as RUSS 505.

LING 505C. Spanish. Spanish Phonetics (2). Cross-listed as SPAN 505.

LING 610. English. Old English (3). Cross-listed as ENGL 610. Studies the Old English language in enough detail to enable the reading of some prose and poetry, including parts of Beowulf in the original. Some literature, including all of Beowulf, is read in translation, with attention to important literary and cultural features of the period. Prerequisites: junior standing and one college literature course.

LING 635. French and Spanish. Introduction to Romance Linguistics (3). Cross-listed as FREN 635 and SPAN 635.

Group C—Areas of Contact Between Linguistics and Other Disciplines

Courses for Graduate/Undergraduate Credit

LING 651. Language and Culture (3). Cross-listed as ANTH 651 and MCLL 661. Prerequisite: 3 hours of linguistics or MCLL 351 or 6 hours of anthropology.

LING 727. Teaching English as a Second Language (2-3). Cross-listed as ENGL 727. Discusses current methods of teaching English to non-native speakers. Students learn to design appropriate teaching units for class and language laboratory use.

LING 740. Graduate Studies in Linguistics (3). Selected topics in theories of language and methods of linguistic study. Repeatable for credit with departmental consent.

Others

Courses for Graduate/Undergraduate Credit

LING 590. Linguistics. Special Studies (1-3). Topic selected and announced by individual instructor. Credit is assigned to Group A, B, or C depending on content. Repeatable for credit when content varies.

LING 595. Linguistics. Directed Readings (1-3). Credit assigned to Group A, B, or C depending on content. Repeatable for credit.

Mathematics and Statistics

Graduate Faculty

Professors: Andrew Acker, Alexandre Boukhguiein, Dharam V. Chopra, Thomas DeLillo, Alan R. Elcrat, Buma L. Fridman (chairperson), John J. Hutchinson, Victor Isakov, Kirk E. Lancaster, Daowei Ma, Kenneth G. Miller (graduate coordinator), Zihren Jin, Hari Mukerjee, Phillip E. Parker, Ziqi Sun

Associate Professors: Stephen W. Brady, Lop-Hing Ho, Xiaohu Hu, Chunsheng Ma

Assistant Professors: Thalia Jeffers, John Robertson, Christian Wolf, Jianliang Qian

The Department of Mathematics and Statistics offers courses of study leading to the Master of Science (MS) degree in mathematics and the Doctor of Philosophy (PhD) degree in applied mathematics.

Mathematics (MATH)

Master of Science

Admission Requirements

Students will be admitted to full graduate standing if they have the equivalent of an undergraduate degree in mathematics, have a grade point average of at least 3.00 in mathematics courses, and meet Graduate School admission requirements.

Degree Requirements

To complete the MS degree, students must earn 33 semester hours of graduate credit*, with a minimum of 24 semester hours in courses in mathematics or statistics offered by the department (exclusive of thesis) numbered 700 or above. The 33 hours must include the completion of three two-semester sequences in mathematics and/or statistics numbered 700 or above.

Students who plan to enter the PhD program in applied mathematics should include Real Analysis I and II (MATH 743 and 843) and Numerical Linear Algebra (MATH 751) in their MS program of study. Generally not more than 6 hours of approved coursework may be transferred from another university. Students may take either a thesis or a nonthesis option. Students electing to write a thesis should enroll in MATH 885 for up to 6 hours credit. A student's program must be approved by the department. A compre-
hensive examination is required of all degree candidates.

*Complex and Vector Analysis* for Engineers (738) and mathematics or statistics courses numbered below 400 do not count toward the 36 hours needed for the MS in mathematics.

**Doctor of Philosophy**

The primary emphases in the doctoral program in applied mathematics are partial differential equations, probability and statistics, and computational mathematics.

**Admission Requirements**

Admission to the doctoral program will be through the Admissions and Exceptions Committee of the department. Students may enter the doctoral program in mathematics and statistics if they have the prerequisites for the initial required courses, have taken the GRE Subject Test in Mathematics, and have a 3.00 overall grade point average and a 3.250 grade point average in mathematics and statistics.

Students may satisfy the prerequisites for the initial requirements if they have taken 3 hours of coursework in each of the following: advanced calculus, modern algebra, linear algebra, and numerical methods.

**Degree Requirements**

To complete the PhD program in applied mathematics, the student must satisfy the course, language, and residency requirements given below; pass the qualifying and preliminary examinations; and write a dissertation containing original research in applied mathematics.

**Course Requirements:** A total of at least 84 hours of graduate credit is required. Partial Differential Equations for Engineers (MATH 757) and Complex and Vector Analysis for Engineers (MATH 758) and mathematics or statistics courses numbered below 700 may not be included. At least 36 hours must be in mathematics and statistics courses numbered above 800 (exclusive of PhD Dissertation [MATH 985]). Courses used toward a master's degree may be included. A maximum of 36 hours may be transferred from another university at the discretion of the student's committee.

Real Analysis I and II (MATH 743 and 843) and Numerical Linear Algebra (MATH 751) are required of all students. In addition a student must complete one of the following two sets of requirements:

A) Complex Analysis I and II (MATH 745 and 845), Partial Differential Equations I and II (MATH 755 and 855), Functional Analysis I and II (MATH 941 and 942), and Numerical Analysis of Partial Differential Equations (MATH 852).

B) Theory of Statistics I and II (STAT 771 and 772), Theory of Probability I and II (STAT 861 and 862), Theory of Statistical Inference I and II (STAT 870 and 871), and Theory of Linear Models I and II (STAT 872 and 873).

**Language Requirements:** The student must demonstrate proficiency either in two foreign languages or in one foreign language and one high level computer language. The foreign languages are Chinese, French, German, and Russian. The language proficiency will be demonstrated by passing an examination that consists of the translation, with the use of a dictionary, of one or more passages of mathematics text from the foreign language into English.

**Residency Requirement:** The student must complete at least one academic year in residence as a full-time student at WSU.

**Qualifying Exam:** The qualifying exam is a written exam administered near the middle of both the fall and spring semesters. The exam is a six-hour exam given on two different days within a one-week period. The topics covered by the exam are real analysis, numerical analysis, advanced calculus, and linear algebra. The student will be required to take the exam at the first opportunity after completing Real Analysis I and II (MATH 743 and 843) and Numerical Linear Algebra (MATH 751).

A student who does not pass on the first attempt may be permitted to take the exam a second time. A person who retakes the exam must retake the entire exam. The exam may be retaken only once.

**PhD Committee:** Upon the student passing the qualifying exam, the graduate coordinator, in consultation with the student, recommends to the departmental PhD Advisory Committee a PhD committee for the student. The student's PhD committee consists of the student's dissertation advisor as chair and four other members. At least one, but no more than two, of the committee members shall be from departments outside the Department of Mathematics and Statistics. Within one semester after passing the qualifying exam the student should submit a Plan of Study to the committee for approval. This committee serves as examining committee for both the preliminary and final exams.

**Preliminary Exam:** The preliminary exam covers specific topics relevant to the student's research area as determined by his or her PhD committee. The student should meet as soon as possible with the committee to set the topics to be covered. For full-time students, the exam should normally be taken about one year after passing the qualifying exam. Before the preliminary exam is taken, one of the two language requirements must be satisfied. A student who fails the preliminary exam may be permitted to retake the exam if the committee so determines.

**Dissertation and Final Exam:** Upon passing the preliminary exam, the student becomes a candidate for the PhD degree. Soon thereafter the student must submit a dissertation proposal to his or her committee for approval. While working on the dissertation, the student should enroll for a total of at least 18 hours of PhD Dissertation. The student must be enrolled at the university during each semester after admission to candidacy until completion of the dissertation. After the dissertation is completed, the student must present and defend it before the committee. This defense constitutes the final exam. The dissertation defense is open to the public.

**Courses for Graduate/Undergraduate Credit**

Credit in courses numbered below 600 is not applicable toward the MS in mathematics.

**MATH 301. Elementary Mathematics (3).** A study of topics necessary to an understanding of the elementary school curriculum, such as set theory, real numbers, and geometry. Not for major or minor credit. Prerequisites: elementary education major and MATH 111 or equivalent with C or better or departmental consent.

**MATH 302. Mathematics for Middle School Teachers (3).** A study of the mathematical knowledge which forms the theoretical foundations of, the applications of, and extensions of middle school mathematics. This capstone course serves to reinforce mathematics skills learned in prerequisite courses and assists students in recognizing the unifying principles within their mathematical experiences. Prerequisites: MATH 111, 121, 123, 144, 501, and STAT 370 or equivalent with a grade of C or better in each.

**MATH 511. Linear Algebra (3).** An elementary study of linear algebra, including an examination of linear transformations and matrices over finite dimensional spaces. Prerequisite: MATH 243 with C or better.

**MATH 513. Fundamental Concepts of Algebra (3).** Defines group, ring, and field and studies their properties. Prerequisites: MATH 415 and 511 with C or better or departmental consent.

**MATH 530. Applied Combinatorics (3).** Basic counting principles, occupancy problems, generating functions, recurrence relations, principles of inclusion and exclusion, the pigeonhole principle, Fibonacci sequences, and elements of graph theory. Prerequisite: MATH 344 with C or better.

**MATH 531. Introduction to the History of Mathematics (3).** General education issues and prospective course. Studies the development of mathematics from antiquity to modern times. Solves problems using the methods of the historical period in which they arose. Requires mathematical skills. Prerequisites: MATH 511 and two additional courses at the 500 level or above, with C or better in each.

**MATH 545. Integration Techniques and Applications (3).** Studies the basic integration techniques used in applied mathematics. Includes the standard vector calculus treatment of line and surface integrals, Green's Theorem, Stokes' Theorem, and the Divergence Theorem. Also includes the study of improper integrals with application to special problems. Prerequisite: MATH 344 with C or better.

**MATH 547. Advanced Calculus I (3).** Covers the calculus of Euclidean space including the standard results concerning functions, sequences, and limits. Prerequisites: MATH 344 and 415 with C or better in each.

**MATH 551. Numerical Methods (3).** Approximating roots of equations, interpolation and approximation, numerical differentiation and integration, and the numerical solution of first order ordinary differential equations. Some computer
use. Prerequisites: MATH 344 and 451 with C or better or departmental consent.

MATH 553. Mathematical Models (3). Covers case studies from the fields of engineering technology and the natural and social sciences. Emphasizes the mathematics involved. Each student completes a term project which is the solution of a particular problem approved by the instructor. Prerequisite: MATH 344 with C or better or departmental consent.

MATH 555. Differential Equations I (3). A study of first order equations including separation of variables and exact equations; second order equations including the general theory of initial value problems, constant coefficients, undetermined coefficients, variation of parameters, and special methods of solution using power series and the Laplace transform methods. A standard course in differential equation for students in the sciences and engineering. Credit not allowed in both MATH 550 and 555. Prerequisite: MATH 243 with C or better or departmental consent.

MATH 580. Selected Topics in Mathematics (3). Topic chosen from topics not otherwise represented in the curriculum. May be repeated up to a maximum of 6 hours credit with departmental consent. Prerequisite: departmental consent.

MATH 615. Elementary Number Theory (3). Studies properties of the integers by elementary means. Prerequisite: MATH 344 with C or better or departmental consent.

MATH 621. Elementary Geometry (3). Studies Euclidean geometry from an advanced point of view. Prerequisite: MATH 344 with C or better or departmental consent.

MATH 640. Advanced Calculus II (3). A continuation of MATH 547. Prerequisites: MATH 511 and 547 with C or better in each.

MATH 655. Differential Equations II (3). A continuation of MATH 555 (but with more emphasis on theoretical issues) that covers higher order differential equations, systems of first order equations (including the basics of linear algebra), some numerical methods, and stability and behavior of solutions for long times. Prerequisite: MATH 555 with C or better or departmental consent.

MATH 657. Optimization Theory (3). Introduces selected topics in linear and nonlinear optimization. Develops the revised simplex method along with a careful treatment of duality. Then extends the theory to solve parametric, integer, and mixed integer linear programs. Prerequisite: MATH 511 with C or better.

MATH 690. Introduction to Mathematical Logic (3). An axiomatic development of elementary mathematical logic through first-order logic culminating in theorems on completeness and consistency. Investigates connections with Boolean algebra, formal languages, and computer logic. Prerequisite: MATH 415 or 511 with C or better or departmental consent.

MATH 713. Abstract Algebra I (3). Treats the standard basic topics of abstract algebra. Prerequisite: MATH 513 with C or better or departmental consent.

MATH 714. Applied Mathematics (3). A study of mathematical techniques applicable to physics and other sciences. Instructor selects topics, such as power series, infinite products, asymptotic expansions, WKB method, contour integration and residue methods, integral transforms, Hilbert spaces, special functions, and integral equations. Prerequisite: MATH 555 or instructor’s consent.

MATH 720. Modern Geometry (3). Examines the fundamental concepts of geometry. Prerequisite: MATH 513 with C or better or departmental consent.

MATH 725. Topology I (3). Studies the results of point set and algebraic topology. Prerequisite: MATH 547 with C or better or departmental consent.

MATH 743. Real Analysis I (3). Includes a study of the foundations of analysis and the fundamental results of the subject. Prerequisite: MATH 640 with C or better or departmental consent.

MATH 745. Complex Analysis I (3). Studies the theory of analytic functions. Prerequisite: MATH 640 with C or better or departmental consent.

MATH 750. Workshop (1-3). Topics appropriate for mathematics workshops that are not in current mathematics courses. May be repeated to a total of 6 hours credit with departmental consent. Prerequisite: departmental consent.

MATH 751. Numerical Linear Algebra (3). Includes analysis of direct and iterative methods for the solution of linear systems, linear least squares problems, eigenvalue problems, error analysis, and reduction by orthogonal transformations. Prerequisites: MATH 511, 547, and 551 with C or better in each, or departmental consent.

MATH 753. Ordinary Differential Equations (3). Covers existence, uniqueness, stability, and other qualitative theories of ordinary differential equations. Prerequisite: MATH 545 or 547 with C or better or departmental consent.

MATH 755. Partial Differential Equations I (3). Studies the existence and uniqueness theory for boundary value problems of partial differential equations of all types. Prerequisite: MATH 547 with C or better or departmental consent.

MATH 757. Partial Differential Equations for Engineers (3). Includes Fourier series, the Fourier integral, boundary value problems for the partial differential equations of mathematical physics, Bessel and Legendre functions, and linear systems of ordinary differential equations. Prerequisite: MATH 555 with C or better.

MATH 758. Complex and Vector Analysis for Engineers (3). A continuation of MATH 751. Prerequisite: MATH 751 or equivalent.

MATH 813. Abstract Algebra II (3). A continuation of MATH 713. Prerequisite: MATH 713 or equivalent.

MATH 825. Topology II (3). A continuation of MATH 725. Prerequisite: MATH 725 or equivalent.

MATH 829. Selected Topics in Geometry (2-3). Repeatable with departmental consent. Prerequisite: departmental consent.

MATH 843. Real Analysis II (3). A continuation of MATH 743. Prerequisite: MATH 743 or equivalent.

MATH 845. Complex Analysis II (3). A continuation of MATH 745. Prerequisite: MATH 745 or equivalent.

MATH 848. Calculus of Variations (3). Includes Euler-Lagrange equations, variational methods, and applications to extremal problems in continuum mechanics. Prerequisite: MATH 547 or 757.

MATH 849. Selected Topics in Analysis (2-3). Repeatable with departmental consent. Prerequisite: departmental consent.


MATH 852. Numerical Analysis of Partial Differential Equations (3). Includes analysis of algorithms for the solution of initial value problems and boundary value problems for systems of PDEs with applications to fluid flow, structural mechanics, electromagnetic theory, and control theory. Prerequisite: MATH 751.

MATH 854. Tensor Analysis with Applications (3). After introducing tensor analysis, considers applications to continuum mechanics, structural analysis, and numerical grid generation. Prerequisite: MATH 545 or 757.


MATH 857. Selected Topics in Engineering Mathematics I (3). Advanced topics in mathematics of interest to engineering students, including tensor analysis, calculus of variations and
partial differential equations. Not applicable toward the MS in mathematics.

MATH 859. Selected Topics in Applied Mathematics (2-3). Repeatable with departmental consent.

MATH 880. Proseminar (1). Oral presentation of research in areas of interest to the students. Prerequisite: major standing.

MATH 881. Individual Reading (1-3). Repeatable up to a maximum of 6 hours with departmental consent. Prerequisite: departmental consent.

MATH 885. Thesis (1-4). May be repeated to a maximum of 6 hours credit. Prerequisite: departmental consent.


MATH 881. Individual Reading (1-3). Repeatable up to a maximum of 6 hours with departmental consent. Prerequisite: departmental consent.

MATH 947-948. Mathematical Theory of Fluid Dynamics I and II (3-3). Mechanics of fluid flow, momentum and energy principles, Navier-Stokes and Euler equations, potential flows, vortex dynamics, stability analysis, and numerical methods applied to fluid dynamics. Prerequisite: MATH 745.

MATH 947-948. Mathematical Theory of Fluid Dynamics I and II (3-3). Mechanics of fluid flow, momentum and energy principles, Navier-Stokes and Euler equations, potential flows, vortex dynamics, stability analysis, and numerical methods applied to fluid dynamics. Prerequisite: MATH 745.

MATH 952. Advanced Topics in Numerical Analysis (3). Advanced topics of current research interest in numerical analysis. Topics chosen at instructor’s discretion. Possible areas of concentration are numerical methods in ordinary differential equations, partial differential equations, and linear algebra. Prerequisites: MATH 751, 851, and instructor’s consent.

MATH 952. Advanced Topics in Numerical Analysis (3). Advanced topics of current research interest in numerical analysis. Topics chosen at instructor’s discretion. Possible areas of concentration are numerical methods in ordinary differential equations, partial differential equations, and linear algebra. Prerequisites: MATH 751, 851, and instructor’s consent.

MATH 958 & MATH 959. Selected Advanced Topics in Applied Mathematics (3&3). Topics of current research interest in applied mathematics. Repeatable for credit with departmental consent. Prerequisite: instructor’s consent.

MATH 958 & MATH 959. Selected Advanced Topics in Applied Mathematics (3&3). Topics of current research interest in applied mathematics. Repeatable for credit with departmental consent. Prerequisite: instructor’s consent.

MATH 981. Advanced Independent Study in Applied Mathematics (1-3). Arranged individual directed study in an area of applied mathematics. Repeatable to a maximum of 12 hours. Prerequisites: must have passed the PhD qualifying exam and instructor’s consent.

MATH 985. PhD Dissertation (1-9). Repeatable to a maximum of 24 hours. Prerequisite: must have passed the PhD preliminary exam.

Statistics (STAT)

Courses for Graduate/Undergraduate Credit

Credit in courses numbered below 600 is not applicable toward the MS in mathematics.

STAT 570. Special Topics in Statistics (3). Covers topics of interest not otherwise available. Prerequisite: departmental consent.

STAT 571-572. Statistical Methods I and II (3-3). General education further study courses. Includes probability models, points and interval estimates, statistical tests of hypotheses, correlation and regression analysis, introduction to nonparametric statistical techniques, least squares, analysis of variance, and topics in design of experiments. Prerequisites: MATH 243 with C or better or departmental consent.

STAT 557. Applied Nonparametric Statistical Methods (3). General education further study course. Studies assumptions and needs for nonparametric tests, rank tests, and other nonparametric inferential techniques. Applications involve problems from the social and natural sciences, business, and other disciplines. Prerequisite: any elementary statistics course such as STAT 370, SOC 501, or PSY 401 with C or better.

STAT 761. Probability (3). A study of axioms of probability, discrete and continuous random variables, expectation, examples of distribution functions, moment generating functions, and sequences of random variables. Prerequisite: MATH 344 with C or better.

STAT 762. Applied Stochastic Processes (3). Studies random variables, expectation, limit theorems, Markov chains, and stochastic processes. Prerequisite: STAT 761 or 771 with C or better or departmental consent.

STAT 763. Applied Regression Analysis (3). Studies linear, polynomial, and multiple regression. Includes applications to business and economics, behavioral and biological sciences, and engineering. Uses computer packages for doing problems. Prerequisites: STAT 571 and MATH 344 and 511 with C or better in each or departmental consent.

STAT 764. Analysis of Variance (3). An introduction to experimental design and analysis of data under linear statistical models. Studies single-factor designs, factorial experiments with more than one factor, analysis of covariance, randomized block designs, nested designs, and Latin square designs. Uses computer packages for doing problems. Prerequisites: STAT 571 and MATH 344 and 511 with C or better in each or departmental consent.

STAT 765. Analysis of Variance (3). An introduction to experimental design and analysis of data under linear statistical models. Studies single-factor designs, factorial experiments with more than one factor, analysis of covariance, randomized block designs, nested designs, and Latin square designs. Uses computer packages for doing problems. Prerequisites: STAT 571 and MATH 344 and 511 with C or better in each or departmental consent.

STAT 766. Nonparametric Methods (3). An introduction to the theory of nonparametric statistics. Includes order statistics, tests based on ranks; tests of goodness of fit; rank-order statistics; one-, two-, and k-sample problems; linear rank statistics; measure of association for bivariate samples; and asymptotic efficiency. Prerequisite: STAT 772.

STAT 767. Design of Experiments (3). A study of basic concepts of experimental design which include completely randomized design, randomized block design, randomized block design, interaction effect, estimation and tests, Latin square design, factorial experiments, confounding, split-plot designs, incomplete block designs, and intra- and inter-block information. Prerequisite: STAT 572 or 772.

STAT 786. Nonparametric Methods (3). An introduction to the theory of nonparametric statistics. Includes order statistics; tests based on ranks; tests of goodness of fit; rank-order statistics; one-, two-, and k-sample problems; linear rank statistics; measure of association for bivariate samples; and asymptotic efficiency. Prerequisite: STAT 772.

STAT 787. Multivariate Statistical Methods (3). Elementary theory and techniques of analyzing multidimensional data: covers Hotelling’s T2, multivariate analysis of variance, principal components analysis, linear discrimination analysis, canonical correlation analysis, and analysis of categorical data. Prerequisites: MATH 511 and STAT 772.
Assistant Professors literature courses, including FREN 223 and 300, may fulfill FREN 300 is a prerequisite for all upper-division literature. Upper-division courses are given on a rotating basis. 

The Department of Modern and Classical Languages toward a master's degree if approved in advance of currently in French, the following courses may apply.

Graduate Faculty

Professors: Pedro Bravo-Elizondo, Gary H. Toops

Associate Professors: Wilson Baldridge, Eunice Myers (chairperson), Brigitte Roussel

Assistant Professors: Maria Akrabova (graduate coordinator), Michael McGlynn, Marat Sanatullov; Kerry Wilks

French (FREN)

Although a complete graduate program is not available currently in French, the following courses may apply toward a master's degree if approved in advance of enrollment by the student's advisor, the chairperson of the Department of Modern and Classical Languages and Literatures, and the dean of the Graduate School.

Courses for Graduate/Undergraduate Credit

Upper-division courses are given on a rotating basis. FREN 300 is a prerequisite for all upper-division literature and civilization courses, unless otherwise indicated. All literature courses, including FREN 223 and 300, may fulfill the LAS literature requirement.


FREN 515. Major Topics in French (1-4). Special studies in (a) language, (b) literature, (c) commercial French, (d) the language laboratory, (e) music, (f) composition, (i) problems in teaching French, (j) civilization, (l) translation, (k) conversation, and (m) phonetics. Repeatable for credit. Prerequisite: departmental consent.

FREN 525. Advanced French Conversation (3). Designed to increase proficiency in spoken French. Assignments include oral reports, dialogs, and work in the language laboratory. Prerequisite: FREN 324 or departmental consent.

FREN 526. Advanced French Composition and Grammar (3). Emphasizes theme writing, original compositions, and detailed study of modern French grammar. Prerequisite: FREN 324 or departmental consent.

> FREN 540. French Literature in English Translation (3).

General Education further studies course. Topic varies. May be used to satisfy the LAS literature requirement and may count toward a French major or minor if readings and papers are done in French.

> FREN 541. French Literature of Africa and the Caribbean in English Translation (3). General Education further studies course. A study of the concept of Negritude through the works of major contemporary African and Caribbean writers. No knowledge of a foreign language is necessary. May be used to satisfy the LAS literature requirement and may count toward a French major or minor if readings and papers are done in French.

FREN 551. French Civilization: The Middle Ages to the Restoration (3). Emphasizes key aspects of the civilization of France as seen in its art, architecture, political structure, social evolution, and intellectual traditions. Interdisciplinary course complements studies in French language and literature. Classwork and required readings are in French. Prerequisite/Corequisite: FREN 300.

FREN 552. Contemporary French Civilization (3). Emphasizes the major events, themes, ideas, trends, and movements in French civilization since the Revolution. Interdisciplinary course complements French language and literature courses. Classwork and readings are in French. Prerequisite/Corequisite: FREN 300.

FREN 623. Seminar in French (3). Seminar in French literature, language, or civilization. Prerequisite: FREN 300. Repeatable for credit.

FREN 630. Renaissance French Literature (3). Analyzes and discusses major French works, 1500-1600. Prerequisite: FREN 300.

FREN 631. 17th Century French Literature (3). Prerequisite: FREN 300.

FREN 632. 18th Century French Literature (3). Prerequisite: FREN 300.

FREN 633. 19th Century French Literature (3). Prerequisite: FREN 300.

FREN 634. 20th Century French Literature: 1900-1945 (3). Analyzes and discusses major works of French fiction, poetry, and drama from the Belle Epoque through World War II. Prerequisite: FREN 300.

FREN 635. Introduction to Romance Linguistics (3). Cross-listed as LING 635 and SPAN 635. An introduction to the phonology, morphology, and syntax of the Romance languages, emphasizing French and Spanish. Prerequisite: departmental consent.

FREN 636. Contemporary French Literature (3). Analyzes and discusses major works of French fiction, poetry, and drama, 1945-present. Prerequisite: FREN 300.

FREN 726. French Composition and Stylistics (3). Offers background in rhetoric and stylistics as an approach to literary models, with a view to developing the creative use of style together with grammatical accuracy in writing. Practice in revision forms the basis of this course. Prerequisite: FREN 526 or departmental consent.

FREN 750. Workshop in French. (2-4). Repeatable for credit.

Course for Graduate Students Only

FREN 815. Special Studies in French (3). Prerequisite: departmental consent. Repeatable for credit.

German (GERM)

Although a complete graduate program is not available currently in German, the following courses may apply toward a master's degree if approved in advance of enrollment by the student's advisor, the chairperson of the Department of Modern and Classical Languages and Literatures, and the dean of the Graduate School.

Courses for Graduate/Undergraduate Credit

GERM 524. Advanced German Conversation and Composition (3). Prerequisite: GERM 324 or instructor's consent.

GERM 650. Directed Studies in German (1-3). Enrollment in any of the areas listed takes place only upon consultation with the department and agreement with the instructor concerned: (a) introduction to the study of German literature; (b) survey I: from the medieval period through the Age of Goethe; (c) survey II: 19th century to 1945; (d) contemporary literature, including the literatures of East and West Germany, 1949-1989; (e) special topics in literature, repeatable once for credit; (f) special topics in language, repeatable once for credit. Prerequisite: GERM 344 or instructor's consent.
Greek (Ancient Classical) (GREK)
Although a complete graduate program is not available currently in Greek, the following courses may apply toward a master's degree.

Courses for Graduate/Undergraduate Credit

GREK 515. Special Studies in Greek (1-4). Topic announced by instructor. Repeatable for credit. Prerequisite: GREK 224 or instructor's consent.

GREK 532. Advanced Greek (3). Thucydides. Prerequisite: GREK 224 or instructor's consent.

Latin (LATN)
Although a complete graduate program is not available currently in Latin, the following courses may apply toward a master's degree.

Courses for Graduate/Undergraduate Credit

LATN 224 or departmental consent is the prerequisite for all upper-division courses.


LATN 541. Roman Lyric Poetry (3). The lyric poems of Catullus and Horace emphasizing imagery, symbolism, structure, diction, and meter.

LATN 542. Vergil's Aeneid (3). Selected books of the Aeneid in the original and the rest in translation. Studies imagery, symbolism, structure, meter, and diction. Considers the place of the Aeneid in Augustan Rome and in the epic tradition.

LATN 543. Roman Drama (3). A study of Roman comedy and tragedy, their Greek background, and their influence on European literature. Includes selected plays of Plautus, Terence, and Seneca, some in the original and some in translation.

LATN 546. Advanced Latin (3). Directed reading of Latin. Reading may be combined with Latin prose composition at the option of the students. Repeatable for credit when content varies.


LATN 652. Cicero (3). The orations, letters, and essays of Cicero. Concentrates on Cicero as the master of Latin prose and as one of the most important political figures of the fall of the Roman Republic.

LATN 653. Lucretius and Epicureanism (3). Reading of Lucretius' *De Rerum Natura* and study of Epicureanism, the atomic theory, and Democritean materialism. Gives consideration to the place of Lucretius in Latin poetry.

Modern and Classical Languages and Literatures (MCLL)

Course for Graduate/Undergraduate Credit

MCLL 661. Language and Culture (3). Cross-listed as ANTH 651 and LING 651. An introduction to the major themes in the interactions of language and society and language and culture, including ethnography of communication, linguistic relativity, and determinism; types of language contact; the linguistic repertoire; and cross-cultural discourse analysis. Content may vary with instructor. Prerequisite: 3 hours of linguistics or MCLL 351 or 6 hours of anthropology.

Russian (RUSS)
Although a complete graduate program is not available currently in Russian, the following courses may apply toward a master's degree.

Courses for Graduate/Undergraduate Credit

RUSS 505. Russian Phonology (2). Cross-listed as LING 505. Corrective pronunciation and auditory perception for non-native speakers of Russian. Includes articulatory phonetics, phonemics, and morphophonemics, as well as the study and production of intonation contours (intonatsionnye konstruktii). Prerequisite: any 200-level course or instructor's consent.

RUSS 515. Special Studies in Russian (1-3). Advanced reading and translation in Russian social sciences, literature, and civilization. Repeatable for credit. Prerequisite: departmental consent.

RUSS 540. Russian Literature in English (3). Consideration of the works of one or two major authors, a literary movement, trend, or specific genre. No knowledge of Russian is necessary, although some is desirable. Repeatable once for credit. Prerequisite: departmental consent.

Spanish (SPAN)

Master of Arts and Areas of Specialization

The Department of Modern and Classical Languages and Literatures offers courses of study leading to the Master of Arts (MA) degree in Spanish. This degree program allows for specialization in Spanish language and literature and in Latin American literature.

Admission Requirements

Admission to the program requires a 3.00 GPA in Spanish. Nonnative speakers must have completed 24 hours of undergraduate Spanish, 8 hours of which are junior-senior level. Native speakers must have completed 12 hours of Spanish at the junior-senior level.

Degree Requirements

The MA degree in Spanish requires the completion of 32 semester hours beyond the BA degree, including at least two seminars—SPAN 623, 831, or 832—that require research papers. Of these hours, 20 must be in courses numbered 700 or above.

Each program may include up to 9 hours of related fields and at least 23 hours of Spanish, including SPAN 526 and three of the following survey courses—531, 532, 620, 621—if their equivalents were not taken as undergraduate courses.

A candidate for a degree must pass SPAN 526 or an equivalent course with a B or better at either the undergraduate or graduate level.

Related fields typically include another foreign language; art; English, American, and foreign literatures; Latin American history; or geography. All related field courses must be approved by the chairperson of the Department of Modern and Classical Languages and Literatures or the graduate coordinator.

Special recommendation is strongly made that all MA candidates in Spanish earn a minimum of 4 hours of transferable credit in a university located in a Spanish-speaking country.

Examinations

Before the MA degree in Spanish is granted, all candidates must pass written and oral comprehensive examinations over reading lists in three areas of specialization of their choice and prove by written examination a reading knowledge of a second foreign language.

Courses for Graduate/Undergraduate Credit

Upper-division courses are given on a rotating basis. SPAN 300 is a prerequisite for all upper-division literature and civilization courses, unless otherwise indicated. All literature courses, including SPAN 223 and 300, may fulfill the general education literature requirement.

SPAN 505. Spanish Phonetics (2). Cross-listed as LING 505. Includes articulatory phonetics, phonemics, sound/symbol correspondences, dialectical and stylistic variations. Required for future Spanish teachers. Prerequisite: any 200-level course or departmental consent.

SPAN 515. Major Topics in Spanish (1-4). Special studies in (a) language; (b) literary reports; (c) commercial Spanish; (d) the language laboratory; (e) music; (f) composition; (g) problems in teaching Spanish; (h) advanced conversation. Repeatable for credit. Prerequisite: departmental consent.

SPAN 535. Spanish Conversation III (2). Increases proficiency in spoken Spanish. Assignments include oral reports and dialogues. Prerequisite: SPAN 525 or departmental consent.

SPAN 536. Advanced Spanish Grammar and Composition (3). Prerequisite: SPAN 220 or departmental consent.

SPAN 531. Survey of Spanish Literature (3). Main currents of Spanish literature from 1700 to the present. Prerequisite: SPAN 300 or departmental consent.
Courses for Graduate/Undergraduate Credit

PHIL 519. Empiricism (3). A study of the philosophical views that emphasize sensory experience rather than reasoning as a source of knowledge with particular attention to the philosophies of Hobbes, Locke, Berkeley, Hume, and Mill.

PHIL 540. Theory of Knowledge (3). A critical examination of the nature of knowledge and of the philosophical problems concerning skepticism; knowledge of the self; material objects; other minds; the past, present, and future; universals; and necessary truths. Includes selections from both historical and recent writings. Prerequisite: one course in philosophy.

PHIL 546. Rationalism (3). A study of the philosophical views that emphasize reasoning rather than sensory experience as the source of knowledge with particular attention to the philosophies of Descartes, Spinoza, and Leibniz.

PHIL 549. Topics in Ancient Philosophy (3). Explores one decisive issue in philosophy from the time of Thales through the Stoics. The examination of an issue may confine itself to one period within the total span of ancient philosophy or it may trace the issue throughout the span, indicating its contemporary treatment. Some issues treated are: the nature of what is, the concept of the sacred, the meaning of truth, the relation of invariance and process, the existence of universal standards of thought and conduct, the problem of knowledge, skepticism, the nature of language, and the character of philosophical inquiry.

PHIL 550. Metaphysics (3). An exploration of some basic topics in the theory of reality. Includes such notions as space, time, substance, causality, particulars, universals, appearance, essence, and being. Prerequisite: one course in philosophy.

PHIL 555. Philosophy of the Social Sciences (3). Studies such topics as the relations of social science with natural science and philosophy, methodological problems peculiar to social science, the nature of sound explanation concepts, and constructs and the roles of mathematics and formal theories in social science.

PHIL 690. Directed Reading (2-3). For the student interested in doing independent study and research in a special area of interest. Repeatable for credit. Prerequisite: departmental consent.

Courses for Graduate Students Only

PHIL 850. Directed Reading (3). For the graduate student desiring independent study and research in an area of special interest. May be repeated for credit. Prerequisite: departmental consent.

PHIL 900. Ethics and Psychology (3). Cross-listed as PSY 900. An in-depth analysis of moral issues that arise in the profession of psychology. Provides a detailed familiarization with current moral controversies and develops ethical reasoning skills that will enable one to address new issues as they arise. Representative topics include: informed and voluntary con-
Physics (PHYS)
Graduate Faculty
Professors: Elizabeth C. Behrmann (chairperson), Hussein Hamdeh (graduate coordinator), James C. Ho
Associate Professors: Syed M. Taher
Assistant Professors: Waldemar Axmann, Jason Ferguson

Although applications are not being accepted for the M.S. program pending restructuring of the graduate program in physics, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit

PHYS 501. Special Studies in Physics for Educators (1-3). 3L. A series of courses covering basic physical concepts which provide physical science background for teachers. Repeatable for a maximum of 5 hours. Prerequisite: in-service or pre-service teacher.

PHYS 502. Science Investigations: Physics (5). Introductory course for prospective teachers. Basic physics concepts in mechanics, heat, and electricity and magnetism developed through laboratory investigations. Emphasizes science process skills and the nature of the scientific endeavor. Prerequisite: MATH 111 or equivalent; in-service or pre-service teacher.

PHYS 516. Advanced Physics Laboratory (2). 1R; 3L. Experiments in classical and modern physics to stress scientific methods and experimental techniques. The experiments are open-ended projects requiring individual study. Repeatable up to a maximum of 8 credit hours. Corequisite: PHYS 551.

PHYS 517. Electronics Laboratory (2). 1R; 3L. Experiments in electronics that treat some of the applications of electronics in scientific research. Experiments cover the uses of vacuum tubes, transistors, IC, and digital circuits. Prerequisite: PHYS 314.

PHYS 551. Topics in Modern Physics (3). An introduction to selected areas of modern physics emphasizing the features of atomic nuclear and solid state physics that require modifications of classical physics for their explanation. Prerequisite: PHYS 214 or 314 or departmental consent. Corequisite: MATH 344.

PHYS 600. Individual Readings in Physics (1-3). Repeatable but total credit may not exceed 6 hours for physics majors. Prerequisite: departmental consent.

PHYS 601. Individual Readings in Astrophysics (1-3). Studies several topics in astronomy and astrophysics in depth. Lectures, independent readings, and student projects may be assigned. May be repeated up to 6 hours. Prerequisite: instructor's consent.

PHYS 616. Computational Physics Laboratory (2). 1R; 2L. Provides a working knowledge of computational techniques with applications in both theoretical and experimental physics, including a brief introduction to the FORTRAN language. Prerequisites: PHYS 551 and MATH 555.

PHYS 621. Elementary Mechanics I (3). Motion of a particle in one and several dimensions, central forces, the harmonic oscillator, and the Lagrangian formulation of mechanics. Prerequisites: PHYS 214 or 314 and MATH 344 with grades of C or better.

PHYS 622. Elementary Mechanics II (3). A continuation of PHYS 621 and will cover dynamics of a system of particles, rotating coordinate systems, dynamics of rigid bodies, coupled oscillations, and special relativity. Prerequisite: PHYS 621.

PHYS 631. Electricity and Magnetism (3). Direct and alternating currents; electric and magnetic field theory, including an introduction to Maxwell's electromagnetic wave theory. Prerequisites: PHYS 214 or 314 and MATH 344 with grades of C or better.

PHYS 641. Thermodynamics (3). The laws of thermodynamics, distribution functions, Boltzmann equation, transport phenomena, fluctuations, and an introduction to statistical mechanics. Prerequisites: PHYS 214 or 314 and MATH 344.

PHYS 651. Quantum Mechanics I (3). Introduction to quantum mechanics, the Schroedinger equation, elementary perturbation theory, and the hydrogen atom. Prerequisite: PHYS 551.

PHYS 652. Quantum Mechanics II (3). A continuation of PHYS 651 and covers time dependent perturbation theory, WKB, scattering, Bell's theorem, quantum reality, applications of quantum mechanics, and nanotechnology. Prerequisite: PHYS 651.

PHYS 661. Introduction to Atomic Physics (3). Quantum mechanics is the basis of all our physical understanding of atomic and molecular spectra. This course uses quantum mechanics to understand the nature and formation of the spectra of one, two and many-electron atoms. A discussion of atomic collisions will also be included. Corequisite: PHYS 651.

PHYS 681. Solid State Physics (3). A one-semester introduction to solid state physics, which explores and explains—in terms of the microscopic processes that produce them—the thermal, mechanical, and electronic properties of solids. Discusses practical applications and interdisciplinary material. Prerequisite: PHYS 551.

*Course may not be counted for credit toward an MS in physics.

Courses for Graduate Students Only

PHYS 800. Individual Readings (1-3). Repeatable for credit up to 3 hours. Prerequisites: 30 hours of physics and departmental consent.

PHYS 801. Selected Topics in Physics (2-3). Repeatable for credit up to 6 hours. Prerequisite: departmental consent.

PHYS 807. Seminar (1). Review of current periodicals; reports on student and faculty research. Repeatable for credit up to 2 hours. Prerequisite: 20 hours of physics.

PHYS 809. Research (1-3). Repeatable for credit up to 6 hours.

PHYS 811. Quantum Mechanics (3). The Schroedinger and Heisenberg formulations of quantum mechanics. Applications include rectangular potentials, central forces, and the harmonic oscillator. Also includes spin, time independent and time dependent perturbation theory. Prerequisites: PHYS 621 and 651 or departmental consent and MATH 555.

PHYS 821. Classical Mechanics (3). The Lagrangian, Hamiltonian, and Hamilton-Jacobi methods of mechanics and an introduction to variational calculus. Applications selected from central forces, rigid bodies, relativity, small oscillations, and continuous media. Prerequisites: PHYS 621 and MATH 555.

PHYS 831. Classical Electricity and Magnetism (3). Maxwell's equations with application to static electricity and magnetism. Also may include electromagnetic fields, vector potentials, Greens functions, relativity, optics, and magnetohydrodynamics. Prerequisites: PHYS 631 and MATH 555.

PHYS 871. Statistical Mechanics (3). An introduction to the basic concepts and methods of statistical mechanics with applications to simple physical systems. Prerequisites: MATH 555 and PHYS 621.

PHYS 881. Solid State Physics (3). A second course in solid state physics for students who have had an introduction to the subject. Transport, dielectric and optical properties, magnetic properties, superconductivity, and applications to semi-conductor devices. Prerequisites: PHYS 555 and 681, or departmental consent.

Political Science (POLS)
Graduate Faculty
Associate Professors: David F. Ericson, James F. Sheffield, Jr.
Assistant Professor: Carolyn Shaw

Although applications are not being accepted for the graduate program in political science, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit

>POLS 523. Government and Politics of Latin America (3). General education further study course. An examination of the political institutions and processes that currently exist in
the Latin American republics. Emphasizes the social, economic and psychocultural factors affecting these institutions and processes.

POLS 524. Politics of Modern China (3). General education further study course. Studies China’s political system since 1949 in terms of non-Western goals and ideas of social organization. Uses themes of political integration and political development to minimize distortion or cultural bias. Encompasses the roots of the political system, the system as it is now; and the goals China is striving to realize. Some assessment about the future development of communism in China. Includes Chinese communism and the ideological heritage; political culture; political leadership; leadership succession; political participation; the Chinese Communist Party; political communications and socialization; legal developments; policy choices; and major events, such as the Hundred Flowers Campaign, Great Leap Forward, and the Proletarian Cultural Revolution.

POLS 533. U.S. Foreign Policy (3). General education further study course. This course explores the dynamic decision making process in the development of U.S. foreign policy. It examines the variety of actors involved, including the military, the State Department, the President, and others. Bilateral and global policy issues are examined.

POLS 534. Comparative Foreign Policy (3). General education further study course. Examines the foreign policies and the decision-making structures and processes of various countries.

POLS 547. Contemporary Political Theory (3). Introduces the radically new ideas that emerged in the last century as a result of Darwin’s theory of evolution, the doctrine of historicism, and the growth of modern science and explores their impact upon political thought. Although the multiplicity of philosophies makes generalization difficult, most of them draw strength from common sources. Studies philosophers such as Hans Kelsen, William Barrett, Friedrich Nietzsche, and John Dewey. Covers the importance of these new philosophies upon political structures and issues.

POLS 551. Public Law (3). General education further study course. An analysis of the role of appellate courts—especially of the U.S. Supreme Court—in the American political system. Emphasizes judicial review of state and federal legislation, the separation of powers, federalism, the taxing power, and the commerce clause.

POLS 552. Civil Liberties (3). General education further study course. An analysis of the role of the appellate courts—especially of the U.S. Supreme Court—in the American political system. Emphasizes the guarantees of the Bill of Rights and the 14th Amendment.

POLS 575. Latin American International Politics (3). Reviews historical and current issues relating to the international relations of Latin America and the Caribbean. It examines the relations among Latin American countries, as well as the relations of Latin American states with other regions of the world, in particular the United States, the European Union and Canada. It also takes a look at the position of Latin American and Caribbean states in the major sub-regional, regional and hemispheric organizations. The course discusses current political issues such as democratization, human rights, security, transnational crime and migration, as well as those related to economic issues (trade agreements, international investment and globalization).


POLS 600. Senior Seminar (3). Required of all political science majors. Includes segments on each of the four major fields of the discipline: American politics, comparative politics, international relations, and political theory. Students can integrate their prior learning experiences within the discipline. Prerequisites: senior status; 18 hours of POLS courses.

POLS 700. Advanced Directed Readings (3). Repeatable for credit. Prerequisite: departmental consent.

POLS 710. Public Sector Organizational Theory and Behavior (3). Cross-listed as PADM 710. Review of the scope of the field of public administration including a survey of key concepts and schools of thought underlying the field and identification of issues shaping the future development of the field.

POLS 725. Public Management of Human Resources (3). Cross-listed as PADM 725. Surveys the major areas of management of human resources in the public sector. Includes hiring, training, evaluation, and pay promotion policies. Emphasizes the laws governing public personnel management and the unique merit, equal employment opportunity, productivity, unionization, and collective bargaining problems found in the public sector.

POLS 750. Workshop. (2-4). Prerequisite: instructor’s consent.

Courses for Graduate Students Only

POLS 865. State and Local Government Finance (3). Cross-listed as ECON 865 and PADM 865. An analysis of state and local government expenditure and revenue systems with an introduction to state and local financial administration. Prerequisite: PADM 765 or instructor’s consent.

POLS 873. Seminar Paper Option (3). Requires students to extensively revise a seminar paper they wrote within their area of emphasis. Paper is written under the direction of a faculty member and orally defended before a committee of three or more faculty, including a chairperson. Prerequisite: departmental approval.

POLS 874. Internship. (3-6). S/U grade only. An intensive applied learning experience supervised by a university department or committee. To receive credit, a student must secure approval of a written report from his/her own department. Prerequisite: departmental consent.

POLS 875. Research Design (3). S/U grade only. Requires the development of a research design for the thesis. The design must be submitted to a departmental committee for evaluation and approval. Prerequisite: departmental consent.

POLS 876. Thesis (1-3).

Psychology (PSY)

Graduate Faculty

Professors: Charles A. Burdalsal, Jr. (chairperson), Peter A. Cohen (dean, College of Health Professions), Darwin Dorr (clinical coordinator), Gary Greenberg (emeritus), Charles Halcomb (human factors coordinator), Gregory J. Meissen; Elise R. Shore, James J. Snyder

Associate Professors: Alex Chaparro, Rhonda K. Lewis, Louis J. Medvene (community coordinator), Donald W. Nance, Marilyn L. Turner, Robert D. Zettle (graduate coordinator)

Assistant Professors: Paul D. Ackerman, Barbara Chaparro, Darce L. Datteri (undergraduate coordinator), Daniel S. McConnell, Victoria Shafer

Degrees Offered

The Psychology Department offers courses of study leading to the Doctor of Philosophy degree. Students may complete requirements for study in Human Factors Psychology, Community Psychology, or Clinical Psychology.

Admission Requirements

Prerequisites: Applicants are not required to have an undergraduate degree in psychology, but must have completed courses in general psychology, psychological statistics, experimental psychology, and history/systems of psychology.

Deadlines: Application for admission should be filed with the dean of the Graduate School and the Psychology Department by February 1 (Clinical), March 1 (Community), or March 15 (Human Factors), for enrollment the following fall. Students applying after the deadlines MAY be considered if any openings in the programs remain. Applicants are informed of admission decisions around April 1 of each year.

Materials: In addition to the application forms (the Graduate School and the Psychology Department have different forms), the following are required: four letters of reference from people acquainted with the applicant’s academic background and potential; a brief autobiographical statement describing particular interests, experiences, and goals related to academic and professional work in psychology; and scores (verbal and quantitative) on the Graduate Record Exam (GRE).

Applications are evaluated with respect to their undergraduate grade point average; stated career goals; amount, type, and scope of undergraduate preparation; reference letters; and GRE scores.
Degree Requirements
Required of All Students
Foundation Courses:
- PSY 904, Biological and Philosophical Foundations of Psychology
- PSY 905, Cognitive/Learning Foundations of Behavior
- PSY 906, Assessment of Personality and Individual Differences
- PSY 907, Social and Developmental Foundations of Behavior

Methods Courses:
- PSY 902, Advanced Research Methods I
- PSY 903, Advanced Research Methods II

Ethics:
- PSY 900, Ethics and Psychology
  \(\text{(Note: a grade of 'B' or better must be earned in each of the Foundation and Methods courses. Students may retake these courses once. Failure to meet this requirement may lead to dismissal from the program.)}\)

2nd Year Project: All students must complete a predoctoral research program resulting in a manuscript ready for journal submission. The student must enroll in PSY 901 each semester (excluding summers) until the project is completed, taking one hour during the first semester and three hours each semester following.

Post 2nd Year Project Research: After completion of the 2nd year project requirement, all students enroll in PSY 909 each semester (3 hours for Human Factors and Community students, 1.5 hours for Clinical students) until the successful completion of qualifying exams.

All students must have completed a minimum of 10 hours of PSY 901 and/or PSY 909. Note: Neither PSY 901 nor PSY 909 may be used for electives.

Qualifying Examination: Students take a qualifying examination upon completion of all foundation and method courses and most program courses. On passing this examination, students can be admitted to doctoral candidacy.

Dissertation: All students seeking the Ph.D. are required to complete a dissertation. The dissertation ordinarily is a major research project which must be preceded by approval of a formal written proposal by the student's dissertation committee. A student must be enrolled in PSY 908 (Doctoral Dissertation) any time a student is working on his/her dissertation (including summers). A minimum of 12 hours of PSY 908 must be earned. In addition to regular course examinations, all students must pass an oral examination based on their dissertation.

Additional Program Requirements

Human Factors
Required Courses:
- PSY 920, Psychological Principles of Human Factors
- PSY 921, Seminar in Human Factors
- PSY 922, Seminar in Software Psychology

Clinical
Required Courses:

Electives: Sufficient electives to total (all courses) 90 credit hours, 12 of which must be taken outside the Human Factors program.

Calculus Tool: HFES accreditation requires that Human Factors students demonstrate a competency in calculus before admission to candidacy. This requirement may be satisfied by (a) satisfactorily completing a college-level calculus course; (b) demonstrating proficiency on an exam; or (c) providing other evidence of such skills.

Internship: Students must complete a research internship of 3 hours per semester over a period of two semesters for a total of 6 hours. It is the student's responsibility to develop his/her internship setting.

Community
Required Courses:
- PSY 940, Seminar in Community-Clinical Psychology
- PSY 941, Applied Research Methods in Community Settings
- PSY 942, Seminar in Community and Organizational Intervention
- PSY 943, Seminar in Prevention
- PSY 961, Seminar in Cognitive-Behavioral Assessment
- PSY 962, Seminar in Cognitive-Behavioral Therapy
- PSY 964, Development of Abnormal Behavior
- PSY 971, Multicultural Issues in Counseling
- PSY 976, Advanced Psychopathology

Electives: Sufficient electives to total 90 hours.

Clinical
Required Courses:
- PSY 940, Seminar in Community-Clinical Psychology
- PSY 960, Ethical and Professional Issues in Clinical Psychology
- PSY 961, Seminar in Cognitive-Behavioral Assessment
- PSY 961L, Cognitive-Behavioral Assessment Lab
- PSY 962, Seminar in Cognitive-Behavioral Therapy
- PSY 962L, Cognitive-Behavior Therapy Lab
- PSY 976, Advanced Psychopathology

Two of the following are required:
- PSY 941, Applied Research Methods in Community Settings
- PSY 942, Seminar in Community and Organizational Intervention
- PSY 943, Seminar in Prevention

Practica Requirements:
- PSY 963, Practicum in Clinical Psychology

A minimum of 6 hours of assessment courses from the following:
- PSY 965, Special Issues in Psychological Assessment
- PSY 941, Applied Research Methods in Community Settings
- PSY 942, Seminar in Community and Organizational Intervention
- PSY 963, Practicum in Clinical Psychology

Time Limits
Students should be aware that the Graduate School requires completion of the degree no later than 9 years after admission. The Psychology Department expects all degree-bound students to make satisfactory progress toward the completion of their degree programs.

Courses for Graduate/Undergraduate Credit

PSY 502, Comparative Psychology (3). Develops a unified theoretical perspective about the origins of behavior of all animals. Focuses on the evolution and development of behavior. Field trips supplement lectures. Prerequisite: one course from Group 1.

PSY 508, Psychology Tutorial (3). Selected topics in psychology. Repeatable for a maximum of 6 hours' credit. Instructor's consent may be required. Check Schedule of Courses. Prerequisite: PSY 111.


PSY 516, Drugs and Human Behavior (3). General education further study course. A survey of the actions and effects of use of legal and illegal psychoactive drugs and of the use of prescription drugs in the treatment of psychological disorders. Prerequisite: PSY 111.
PSY 522. Biological Psychology (3). General education further study course. A review of the biological foundations of behavior. Includes the evolutionary basis of behavior, behavior genetics, a critical analysis of brain-behavior relationships, the role of hormones in behavior, and neurochemical correlates of behavior. Prerequisite: PSY 111.

PSY 526. Psychological Testing and Measurement (3). A critical analysis of the psychological foundations of tests and the interpretation of test findings. Surveys several tests representing the areas of intelligence, personality, normal and abnormal psychology, interests, special abilities, and aptitudes to illustrate general principles of testing. Prerequisite: PSY 401.

PSY 534. Psychology of Women (3). General education issues and perspectives course. Cross-listed as WOMS 534. Psychological assumptions, research, and theories of the roles, behavior, and potential of women in contemporary society. Prerequisite: PSY 111.

PSY 536. Behavior Modification (3). A study of the basic assumptions, principles, and issues of behavioral approach to helping persons with psychological problems. Includes demonstration and individualized practice in general helping skills as well as individual projects in applying these skills. Prerequisites: PSY 111 and instructor's consent.


PSY 546. Aerospace Psychology (3). Exploration of the many roles of scientific psychology in aviation and aerospace science. Surveys the research and literature in areas such as psychophyiological aspects of flight, environmental effects on human performance in aviation, aircrew skill requirements and training, pilot workload, cockpit control and display systems, and aviation safety. Prerequisite: 15 hours of psychology or instructor's consent.

PSY 556. Introduction to Clinical Psychology (3). A survey of current ethical, conceptual, and research issues involved in the assessment and treatment of psychopathology. Reviews contemporary psychotherapies emphasizing the relative efficacy of each and the therapeutic mechanisms through which they initiate behavioral change. Prerequisite: PSY 324.

PSY 566. Perspectives on Self-Help Groups (3). Cross-listed as NURS 566 and SCWK 566. Provides an interactive format that constitutes a community resource for health and human service professionals and promotes an interdisciplinary understanding of the nature and diversity of self-help groups for persons with virtually any health problem or personal issues. Reviews contemporary theory and research, explaining the attractiveness and effectiveness of self-help groups. Panels of support group members share their experience with self-help groups on such topics as addiction, cancer and other illnesses, eating disorders, bereavement, mental illness, and parenting.

PSY 568. Computer Applications to the Behavioral Sciences (3). 2R, 2L. Introduces computer applications to the behavioral sciences including 1) techniques of analyzing experimental data, 2) statistical applications, 3) interactive computing, 4) “canned” statistical programs, 5) word processing, and 6) other current computer applications. Prerequisite: 9 hours in the social sciences.

PSY 601. Systems and Theories in Psychology (3). Includes behaviorism, Gestalt psychology, and structuralism. Attempts to develop the logical relations of these theories to each other as well as to common historical themes and current issues. Prerequisite: 15 hours of psychology including PSY 411 or instructor's consent.

PSY 602. Research Methods (1-3). Upon consultation with instructor, advanced students with adequate preparation may undertake original research or directed readings in psychological problems. Repeatable for a maximum of 6 credit hours. Requires consultation with and approval by appropriate advisor prior to registration. Prerequisites: 9 hours in psychology and instructor's consent.

PSY 750. Psychology Workshop (1-3). Specialized instruction, using various formats in selected topics and areas of psychology. Graded S/U.

Courses for Graduate Students Only

PSY 900. Ethics and Psychology (3). Cross listed as PHIL 900. An in-depth analysis of moral issues that arise in the profession of psychology. Provides a detailed familiarization with current moral controversies and develops ethical reasoning skills that will enable one to address new issues as they arise. Representative topics include: informed and voluntary consent, rights of human research subjects, privacy and confidentiality, assessment, conflicting obligations, ownership of research results, multiple relationships in teaching, research and practice, conflicts between therapeutic and forensic roles, objectivity in research, the nature and boundaries of teaching psychology, etc.

PSY 901. Graduate Research (1-3). Individual research. Graded S/U. Prerequisites: advisor's consent and graduate standing.

PSY 902. Advanced Research Methods I (4). 3R, 3L. Part one of a two-course sequence aimed at advanced treatment of statistical and research design issues. Statistical methods include are analysis of variance, analysis of covariance, multiple comparisons, and multiple regression. Design issues include research planning, validity, quasi vs. experimental designs, prediction vs. explanation, and modeling. The associated lab provides basic computer skills for access to the mainframe and some basic training for EXCEL, and SPSS for Windows. Prerequisite: instructor's consent.

PSY 903. Advanced Research Methods II (4). 3R, 3L. Continuation of PSY 902. Statistical techniques emphasized are a continuation of multiple regression, structural analyses including AMOS, factor analysis, canonical correlation, and discriminant analysis. Includes advanced design issues. The associated lab provides additional computer skills for EXCEL, and SPSS for Windows. Prerequisites: PSY 902 and instructor's consent.

PSY 904. Biological and Philosophical Foundations of Psychology (3). Develops the idea that psychology is a biosocial science. Accordingly, course examines the philosophical foundations of science itself before exploring the biological foundations and contextual nature of psychological science. Readings cover biological factors as they pertain to psychology: evolution, genetics, maturation, functional neuroanatomy, physiology. Includes critical reviews of genetic determinism, neural localization, and hemispheric specialization. Prerequisite: instructor's consent.

PSY 905. Cognitive/Learning Foundations of Behavior (3). Focuses on how human beings learn, maintain, and modify behavior, and how cognitive knowledge is acquired, maintained, represented, and used. The course serves as an integrated resource of the main issues and the theoretical questions investigated in the psychology of learning and cognition. A basic understanding of classical and instrumental conditioning, and the cognitive processes of memory, language, speech, thought, decision making, and problem solving are provided. Prerequisite: instructor's consent.

PSY 906. Assessment of Personality and Individual Differences (3). Reviews psychometric principles underlying assessment of individual differences in cognition and personality. Major approaches to assessment of normal personality variables are examined. Students self-administer several personality instruments and assess a client under supervision. Prerequisite: instructor's consent.

PSY 907. Social and Developmental Foundations of Behavior (3). Examines basic assumptions, theories and methods in social and developmental psychology. Describes and analyzes research concerning the functional significance of social relationships for development and the embeddedness of behavior in social, ecological and cultural contexts, focusing on a number of substantive issues such as person perception and social cognition, affiliation and attachment, socialization and interpersonal interaction, social support and social roles and contexts over the life span. Considers the applications of theories of attribution, attitude change, group functioning and attachment to current social problems Prerequisite: instructor's consent.

PSY 908. Doctoral Dissertation (1-3). Graded S/U only. Repeatable for credit. Prerequisite: admission to candidacy and instructor's consent.

PSY 909. Pre-Proposal Research (1-3). A research course for students who have completed the 2nd-year project but have not taken qualifying examinations. Focuses on the first steps in developing a dissertation proposal. May be taken an unlimited number of times. Graded S/U.
PSY 920. Psychological Principles of Human Factors (3).
Focuses on the interaction of people with machines and technology in a variety of environments. Provides depth to the topics surveyed in PSY 386 and serves as a means of integrating cognitive, biological, and perceptual psychology in applied settings. Prerequisites: completion of undergraduate course in cognitive psychology or PSY 905; and instructor’s consent after interview for doctoral students from other disciplines.

PSY 921. Seminar in Human Factors (3). Focuses on a sample of contemporary human factors problems through review of current literature and theory. Content changes as new problems attain prominence internationally, but a typical sample might be human factors in the aging population; human factors in airport security and baggage marking; and human factors in third-world industrialization. Prerequisites: completion of 9 hours of Foundations of Psychology doctoral courses; for doctoral students from other disciplines, instructor’s consent after an interview.

PSY 922. Seminar in Software Psychology (3). Intensive study of principles and methods of engineering psychology (human factors) applies to the design and evaluation of computer software. Includes research methods, programming as human performance; programming style, software quality evaluation, organizing the programming team, interactive interface issues, and the design of interactive computer systems. Prerequisite: instructor’s consent.

PSY 923. Seminar in Motor and Sensory Processes (3). Focuses on the perceptual control of action. Reviews how the sensory systems operate with emphasis on vision. Covers anatomy and physiology of the motor system. Selected examples on how these concepts relate to human factors psychology. Prerequisite: instructor’s consent.

PSY 925. Seminar in Perception (3). Intensive study in theory and research in perceptual processes. Prerequisites: PSY 332, or equivalent, and instructor’s consent.

PSY 926. Internship in Human Factors Psychology (1-3). Repeatable up to 6 hours. A planned placement experience in an off-campus setting, giving the doctoral human factors psychology student an opportunity to apply the principles of human factors psychology. Prerequisite: advisor’s consent.

PSY 940. Seminar in Community-Clinical Psychology (3).
Introduces basic historical, conceptual, research, methodological, and ethical issues in community-clinical psychology. Examines the responsibilities and roles of psychologists in the promotion of human functioning. Reviews models and determinants of human behavior from individual, developmental, and ecological/contexual perspectives. Details the reciprocal relationship between research and practical applications of psychological knowledge and the application of that knowledge to human psychosocial problems. Prerequisite: instructor’s consent.

PSY 941. Applied Research Methods in Community Settings (3). An examination of research methods which are used in community settings to develop and evaluate programs. Regarding program development, there is discussion of different data collection strategies used to assess community needs. Explores a variety of topics related to program evaluation including research design issues, developing criteria of merit, and the politicization of program evaluation. Prerequisite: instructor’s consent.

PSY 942. Seminar in Community and Organizational Intervention (4). 3R, 3L. Focuses on the development and/or change of community-based programs and organizations and the implementation and funding of community-based programs. Explores theoretical and conceptual basis of these interventions, drawing on material from community psychology, public health, and applied social psychology. Helps prepare students to become involved as professionals in community-based health or mental health interventions in a variety of roles: as program developers, proposal writers, program implementers, and program managers. Prerequisite: instructor’s consent.

PSY 943. Seminar in Prevention (3). Reviews the historical, theoretical, and empirical bases of prevention psychology. Presents contemporary models of prevention psychology including the ecological, social, and community mental health perspectives. Could include primary prevention, empowerment, community-based prevention, self-help, social policy, and the prevention of psychosocial problems through environmental intervention. Prerequisite: instructor’s consent.

PSY 944. Practicum in Community Psychology (1-3). Provides supervised practice working in community-based organizations on such tasks as needs assessment, program development, and program evaluation. Organizational settings may be in the areas of mental health, health, and education. Services may be prevention-oriented. Repeatable for credit. Graded S/U only. Prerequisite: instructor’s consent.

PSY 946. Development of Abnormal Behavior (3). Considers the descriptive characteristics of abnormal behavior, a developmental perspective. Considers the ecological, social, environmental, personal, and genetic-biological contexts and causes of such behavior. Discusses implications for preventative and clinical interventions. Prerequisite: instructor’s consent.

PSY 947. Individual Intelligence Assessment (3).
Covers contemporary and developing approaches to intellectual assessment. Focuses on standardized intelligence test batteries and their use. Prerequisite: instructor or departmental consent.

PSY 961. Seminar in Cognitive-Behavioral Assessment (3).
Reviews surveys standards used in evaluating the quality of cognitive-behavioral assessment techniques and procedures. Provides a description, critical analysis, and conceptualization of how such assessment methods as interviewing, behavioral observations, self-monitoring, self-report inventories, and standardized intelligence testing can be used to meet the goals of a cognitive-behavioral approach to psychological assessment. Prerequisite: instructor’s consent.

PSY 961L. Cognitive-Behavioral Assessment Lab. (1). Supplements PSY 961 by providing students with hands-on training and experience with an array of techniques and procedures used in conducting psychological assessments from a cognitive-behavioral perspective. Covers interviewing, self-report inventories, self-monitoring, behavioral observations, and the use of standardized intelligence tests. Graded S/U only. Prerequisites: concurrent enrollment in PSY 961 and instructor’s consent.

PSY 962. Seminar in Cognitive-Behavior Therapy (3). 3R, 3L. Reviews the theoretical and empirical support for specific behavior therapeutic practices. Approaches may include systematic desensitization, flooding, contingency management techniques and cognitive therapies. Also discusses the interface between behavioral assessment and clinical practice. Prerequisite: instructor’s consent.

PSY 962L. Cognitive-Behavioral Therapy Lab. (1). Supplements PSY 962 by providing students with hands-on training and experience with an array of techniques and procedures used in conducting psychological interventions from a cognitive-behavioral perspective. Covers reinforcement procedures, desensitization, cognitive therapy, dialectical behavior therapy, and self-regulation procedures. Graded S/U only. Prerequisites: concurrent enrollment in PSY 962 and instructor’s consent.

PSY 963. Practicum in Clinical Psychology (1-3). Gives the student further experience in developing clinical skills. Students are supervised in their clinical work with individual clients seen through the department clinic, and/or other appropriate sites. Graded S/U only. May be repeated for credit. Prerequisite: instructor’s consent.

PSY 964. Development of Abnormal Behavior (3). Considers the descriptive characteristics of abnormal behavior, a developmental perspective. Considers the ecological, social, environmental, personal, and genetic-biological contexts and causes of such behavior. Discusses implications for preventative and clinical interventions. Prerequisite: instructor’s consent.

PSY 965. Special Issues in Psychological Assessment (1-4). Covers contemporary and developing approaches to psychological assessment identified by the department. Course procedures and content vary according to topic. Repeatable. Prerequisite: instructor or departmental consent.

PSY 966. Special Issues in Psychotherapeutic Interventions. (1-4). Covers contemporary and developing approaches to psychotherapy identified by the department. Course procedures and content vary according to topic. Repeatable. Prerequisite: instructor or departmental consent.

PSY 967. Individual Intelligence Assessment (3). This course is cross-listed as CESP 855. Use of individual tests for assessment of intelligence. Examines the nature of intelligence; theory, administration, and interpretation of selected individual intelligence tests; and critical issues related to the assessment
of intelligence. Includes case simulation and practice activities. Prerequisites: CESP 822 and instructor's consent.

PSY 968. Child Abuse and Neglect (1). This course is cross-listed as CESP 803. A study of selected theories of counseling. Prerequisite: admission to counseling or school psychology program or instructor's consent.

PSY 970. Principles and Philosophy of Counseling (3). This course is cross-listed as CESP 804. The development of a guidance philosophy, including a study of the helping relationship and the services that are part of school, agency, and other institutional settings. Prerequisite: admission to counseling program or instructor's consent.

PSY 971. Multicultural Issues in Counseling (3). This course is cross-listed as CESP 821. Students acquire knowledge and skills that enable them to offer help to individuals in a multicultural environment. Focuses include developing a sense of the student's own cultural identity, increasing sensitivity to cultural differences in help-seeking attitudes and behaviors, and understanding how the potential sources of cultural misunderstanding, biases, and prejudice may affect their counseling effectiveness. Prerequisites: CESP 701, 803 or 804, or instructor's consent.

PSY 972. Techniques of Counseling (3). This course is cross-listed as CESP 824. Examines and practices techniques of counseling through simulated counseling situations and extensive examination of counseling case studies. Prerequisites: CESP 728, 821, 822, and counseling major or departmental consent.

PSY 973. Group Counseling Techniques (3). This course is cross-listed as CESP 825. Examines different kinds of groups, group selection, communication patterns in groups, and issues to be addressed in group settings. Prerequisites: CESP 728, 803 (or concurrent enrollment), 804, and counseling major or departmental consent.

PSY 974. Family Issues in Counseling (3). This course is cross-listed as CESP 837. Teaches basic family processes and how they impact the growth and development of children and adolescents. Covers family systems theory, the family life cycle, cultural and social influences on families, healthy family functioning, the impact of substance abuse on the family, and the unique challenges faced by single parent and blended families. Presents basic family assessment and therapy techniques. Prerequisite: graduate standing.

PSY 975. Seminar in Psychotherapy (3). Provides an in-depth description and critical analysis of various theories and methods of psychotherapy; an examination of the efficacy of these therapeutic approaches, and a survey of common issues in psychotherapy, such as process and outcome, and client and therapist variables in the therapeutic process. Prerequisites: PSY 111 and instructor's consent.

PSY 976. Advanced Psychopathology (3). An overview of major categories of psychopathology consistent with the most recent edition of the Diagnostic and Statistical Manual of Mental Disorders. Reviews descriptive features of each diagnostic category and information on the clinical course and etiology. Examines differing definitions of psychopathology and paradigmatic approaches to the study of psychopathology. Prerequisite: instructor's consent.

PSY 977. Internship in Clinical Psychology (1-3). Graded S/U only. A planned one year supervised clinical internship at an off campus site approved by APPIC for training in clinical psychology. Gives the clinical student an opportunity to further develop and employ clinical skills in an applied supervised training setting. Prerequisite: advisor's consent.

PSY 990. Seminar in Current Developments (3). Intensive study of current issues, techniques, research, and application. Repeatable for different topics for a maximum of 6 hours. Prerequisite: instructor's consent.

Public Administration
See Urban and Public Affairs, Hugo Wall School of.

Religion (REL)
Graduate Faculty
Professor: Stuart Lasine

Although there is no graduate program in religion, the following courses may be taken for graduate credit.

Courses for Graduate/Undergraduate Credit
REL 790. Independent Study (1-3). For the student who is capable of doing graduate work in a specialized area of the study of religion not formally offered by the department. Repeatable for credit. Prerequisite: departmental consent.

Russian
See Modern and Classical Languages and Literatures.

Social Work (SCWK)
Graduate Faculty
Associate Professors: Brien Bolin, Linnea GlenMaye (director and graduate coordinator), Kathleen A. Lewandowski
Assistant Professors: Elwin Barrett, M.J. Hwang, Joanne Levine, Curtis Proctor

Master of Social Work
The Master of Social Work (MSW) degree program has an emphasis in advanced generalist practice and is designed for people who are interested in entering the social work profession at an advanced professional level.

MSW Program Mission
The mission of the MSW program at Wichita State University is to prepare its graduates to be autonomous advanced generalist social work practitioners within complex, diverse, and ever-changing metropolitan environments. Emphasis is placed on developing knowledge and skills for ethical, culturally competent and socially just and empowering interventions on all practice levels.

Accreditation Status
The MSW program is accredited through June 2007 by the Council on Social Work Education (CSWE).

Licensure
Graduates of the MSW program are eligible for licensure. Contact the School of Social Work or the Behavioral Sciences Regulatory Board for further information.

Admission Requirements
Admission to the MSW program requires that the applicant:
1. Have a baccalaureate degree from an accredited four-year institution(s) acceptable to the Graduate School.
2. Have evidence of a strong liberal arts background from an accredited college or university prior to enrollment. Applicants should be knowledgeable about diverse cultures; social problems; social conditions; and the social, psychological, and biological determinants of human behavior. Previous coursework should include a solid background in the liberal arts, as evidenced on the transcript by courses in the humanities (2), behavioral and social sciences (3), oral communication (1), written communication (2), human biology (1), analytical skills (1), and human diversity (1). Examples of courses in each area are provided in the admissions materials.
3. Have a cumulative undergraduate grade point average of 3.00 or better.
4. Have completed applications (to both the MSW program and the Graduate School) postmarked no later than February 1 for the following fall semester.

Non-academic Factors for Admission
Non-academic considerations include experiences in providing social services, references, and personal narratives. Measures of volunteer as well as paid experience in social services contribute to candidate rankings. References are primarily asked to provide an indication of the applicant’s suitability for entrance into the profession. Indicators of readiness for graduate studies and of suitability for the profession are drawn from descriptions of life experience, motivation, career goals, and values as described in the applicant’s personal statement and letters of reference.

Admission Procedure
To be reviewed for admission, applicants should do the following:
1. Request an application packet from the School of Social Work.
2. Submit to the Graduate School the designated Application for Admission and supporting transcripts.

3. Submit to the School of Social Work by February 1 a completed MSW application, including a personal statement, three references, and documentation of academic work and professional training.

As described in the application materials, applicants should submit their records in sealed envelopes along with their completed MSW application to the School of Social Work. Applicants should be aware that their records can only be reviewed when all materials have been submitted and they have met eligibility requirements. Applicants will be notified of their admission status by the Graduate School.

Advanced Standing

The School of Social Work offers an advanced standing program. Interested applicants must have an undergraduate degree in social work from a social work program that is accredited by the Council on Social Work Education. Advanced standing students will complete 32 credit hours—29 credits comprising the advanced generalist curriculum and 3 credit hours for a bridge course to be taken during the summer before beginning the core curriculum. Students enrolling in the bridge course must be admitted to the Graduate School prior to course enrollment. Undergraduate students completing their bachelor’s degree during the summer must be enrolled in the course under the Graduate School Senior Rule option.

Full- and Part-Time Enrollment Options

Applicants choose to apply for either the full-time or the part-time track. Applicants admitted into the full-time program enroll in four full-time semesters, consisting of 12-16 hours a semester, not counting summer semester. Applicants admitted for Advanced Standing enroll in two full-time semesters plus one 3-credit-hour summer bridge course. Applicants admitted into the part-time program must enroll in 6-9 credit hours a semester, with the exception of summer semester, and complete the degree within four years or for Advanced Standing students, two years. Courses are sequential and are generally offered once a year. Applicants should contact the School of Social Work for further information on the part-time curriculum plan.

Field Practicum Requirements

In addition to classroom work, students enroll in field practicum. The foundation year practicum consists of 480 clock hours over the course of two semesters. The advanced generalist practicum consists of 700 clock hours over the course of two semesters, for a total of 1,180 clock hours. The MSW program’s Field Practicum Director makes arrangements for field practicum placements.

Transfer of Academic Credit

Transfer of credits from another MSW program will be considered on a case-by-case basis. As a general rule, only courses taken in a Council on Social Work Education accredited Master of Social Work program will be eligible for transfer of credits. The applicants must have received a B or better in the course(s) being considered for transfer. In most instances, transfer of credits will only be granted for first-year foundation courses or electives, if applicable to Wichita State University’s advanced generalist social work program. Students may transfer up to 6 elective hours from other graduate programs in related fields, if applicable to the advanced generalist specialization and/or content is comparable to WSU’s elective courses outside the Social Work Program. Transfer of elective credit hours must be approved by the assigned advisor and the director of the MSW program at the time of admission to the MSW program.

Life Experience

In accordance with Council on Social Work Education accreditation requirements, academic credit will not be given for life experience or work experience in course work or field practicum.

There will no credit towards the Social Work Degree for prior life or work experiences.

Nondegree Students

Students wishing to enroll in graduate social work courses for continuing education may do so on a space available basis. Nondegree students who then decide to pursue an MSW degree at Wichita State University must go through the normal admission procedures. A maximum of 12 credit hours taken prior to admission to the MSW program can be applied toward the MSW program. Nondegree seeking students who do not have a BSW degree from a CSWE accredited program may not enroll in social work practice classes. Only students admitted into the MSW program may enroll in field practicum courses.

Degree Requirements

The curriculum for the regular MSW program consists of 56 credit hours—42 credits of classroom work and 14 credits of supervised practicum. The curriculum for the advanced standing program consists of 32 credit hours—24 credits of classroom work and 8 credits of supervised practicum. Students must maintain a 3.00 grade point average; a grade of C is the minimum passing grade.

Courses for Graduate/Undergraduate Credit

>SCWK 551. Independent Studies (1-3). Individual projects for social work students who are capable of doing independent work in areas of special interest. Repeatable for credit not to exceed 6 hours. Prerequisite: instructor’s consent.

>SCWK 566. Perspectives on Self-Help Groups (3). Cross-listed as NURS 566 and PSY 566. Provides an interactive format that constitutes a community resource for health and human service professionals and promotes an interdisciplinary understanding of the nature and diversity of self-help groups for persons with virtually any health problem or personal issue. Reviews contemporary theory and research, explaining the attractiveness and effectiveness of self-help groups. Panels of support group members share their experience with self-help groups on such topics as addiction, cancer and other illnesses, eating disorders, bereavement, mental illness, and parenting.

>SCWK 600. Topics in Social Work (1-3). Selected topics in practice, policy, research, and human behavior in the social environment within a selected field of social welfare. Covers specific topics identified by the program in consultation with majors, groups of community practitioners, and area service institutions. Repeatable. Prerequisite: instructor or program consent.

>SCWK 700. Foundations of Generalist Practice I (3). Provides foundation content in the knowledge and skills for empowerment-based generalist social work practice with individuals, families, groups, organizations, and communities. Includes professional role development, communication and interviewing theory, skill development in social work assessment, intervention, and evaluation methods. Corequisite: SCWK 720.

>SCWK 702. Foundations of Generalist Practice II (3). Provides continued social work practice foundation content emphasizing developing generalist knowledge and skill at the group, organizational, community, and societal levels. Emphasizes material on group process and organizational and community leadership in the development of a problem-solving model for work with systems of all sizes. Pre-requisite: SCWK 700 or instructor’s consent.

>SCWK 710. Micro Human Behavior and the Social Environment (3). Provides theories and knowledge of human bio-psycho-social development and functioning of individuals and families, and of the transaction between individuals and families and their environment. Presents theoretical perspectives on development over the life span and family functioning. Explores areas of universality and differences across gender, race, ethnicity, class, physical and mental ability, and sexual orientation.

>SCWK 712. Macro Human Behavior and the Social Environment (3). Provides theories and content on organizational and community structure, dynamics and change, social movements, large groups, and structural oppression, and provides a theory base for the contextualization of social work practice within diverse environments and macro systems. Emphasizes understanding the needs of

SCWK 711. Social Work Policy and Practice (3). Surveys social work policies, methods, and administration. Emphasizes the strengths and weaknesses of policies within the context of the social problems they address. Prerequisite: SCWK 710 or instructor's consent.

SCWK 712. Social Work Practice (3). Provides an introduction to the components of quantitative research design and how research is designed to conduct studies which seek to improve social work practice. Prerequisite: program approval.

SCWK 713. Advanced Generalist Practice I (3). Examines theoretical approaches to social work assessment and intervention with families. Reviews and evaluates various approaches to family therapy, and focuses on assessment and intervention with different types of families (e.g., differing levels of functioning, ethnicity, vulnerability, and oppression). Examines theoretical constructs, strategies for change, and use in actual social work intervention for such models of family therapy as structural, Bowenian, strategic, experiential, cognitive/behavioral, psychodynamic, and solution-focused.

SCWK 714. Advanced Generalist Practice II (3). Integrates social work theories, knowledge, and skills to develop each student's framework for advanced generalist practice. Emphasizes applying social work theories in practice with populations at risk of violence. Develops skills in applying a wide array of social work roles within a multi-level practice environment. Prerequisite: SCWK 816.

SCWK 715. Community Empowerment and Social Administration (3). Provides students with advanced generalist knowledge and skills for organizing and empowering communities and managing community-based organizations. Examines the history, strategies, and approaches relevant to community organizing. Focuses upon intervention and administrative skills to meet organizational and community needs. Emphasizes understanding the particular needs of minority communities. Prerequisite: program consent.

SCWK 816. Advanced Generalist Practice I (3). Provides a critical examination of theories of practice relevant for advanced generalist practice across systems. Theories included address the biological, psychological, social, and spiritual dimensions of human behavior. Emphasizes theories applying to social work intervention with individuals, family systems, and small groups. Prerequisite: program consent.

SCWK 817. Community Empowerment and Social Administration (3). Provides students with advanced generalist knowledge and skills for organizing and empowering communities and managing community-based organizations. Examines the history, strategies, and approaches relevant to community organizing. Focuses upon intervention and administrative skills to meet organizational and community needs. Emphasizes understanding the particular needs of minority communities. Prerequisite: program consent.

SCWK 822. Field Practicum III (4). Continuation of SCWK 821. Requires 350 hours of agency service. Prerequisite: program consent.

SCWK 832. Social Work Practice in the Schools (3). Conveys an understanding of systematic intervention in schools using various intervention modalities. Focuses on the roles of social workers in schools, including provision of direct service, consultation, advocacy, program development, and evaluation, as well as liaison functions with families and community systems. Students integrate an understanding of child development, familial, and school crises that affect child development and the importance of the social worker/parent relationship.

SCWK 833. Family Therapy (3). Examines theoretical approaches to social work assessment and intervention with families. Reviews and evaluates various approaches to family therapy, and focuses on assessment and intervention with different types of families (e.g., differing levels of functioning, ethnicity, vulnerability, and oppression). Examines theoretical constructs, strategies for change, and use in actual social work intervention for such models of family therapy as structural, Bowenian, strategic, experiential, cognitive/behavioral, psychodynamic, and solution-focused.

SCWK 851. Applied Social Work Research (3). Prepares students to be ethical practitioners who assess the benefits of social work interventions on an ongoing basis. Because of the importance of evaluation in social work, students develop the research skills needed to evaluate their own practice, conduct program evaluations, use the computer as a research tool, and interpret descriptive and inferential statistics. Prerequisite: SCWK 751 or program consent.

SCWK 860. Advanced Generalist Practice II (3). Integrates social work theories, knowledge, and skills to develop each student's framework for advanced generalist practice. Emphasizes applying social work theories in practice with populations at risk of violence. Develops skills in applying a wide array of social work roles within a multi-level practice environment. Prerequisite: SCWK 816.

SCWK 870. Clinical Assessment for Advanced Generalist Practice (3). Uses a biopsychosocial perspective to understand problematic patterns of functioning identified as diagnoses in the DSM-IV. Students critically examine the DSM-IV as a basis for social work assessment and learn its use within
an advanced generalist practice perspective. Prerequisite: program consent.

Sociology (SOC)
Graduate Faculty
Associate Professors: Twyla J. Hill, Charles S. Koeber, Kathleen O’Flaherty Perez, Ronald R. Matson (chairperson), David W. Wright (graduate coordinator)
Assistant Professors: Jodie L. Hertzog, Lisa E. Thrane

Master of Arts
The sociology department offers courses of study leading to the Master of Arts (MA) degree with options for thesis and nonthesis programs.

Admission Requirements
In addition to the Graduate School requirements for admission, the Department of Sociology requires: 1) one college algebra course and at least 15 hours in sociology including an introductory sociology course, one descriptive and inferential statistics course, two research methods courses, and one theory course (similar courses in other fields of study may be substituted at the discretion of the graduate coordinator); 2) three letters of reference from professors who are familiar with the student's undergraduate course work; and 3) a typed, double-spaced statement of purpose (approximately 500 words) articulating the student's area of research interests and academic/career goals.

Degree Requirements
Students pursuing the MA degree in sociology may follow either a thesis or a nonthesis program.

Thesis Program. Students in the thesis program must take a total of 32 hours, including SOC 860, Proseminar-Teaching Sociology; SOC 801, Application of Advanced Statistical Techniques; SOC 812, Advanced Research Methods; SOC 845, Seminar in Sociological Theory; and two 800-level graduate seminars as well as completion of their thesis hours. Sixty percent of the 32 hours must be 700 level or above.

Nonthesis Program. Students in the nonthesis program must take a total of 36 hours, including SOC 860, Proseminar-Teaching Sociology; SOC 801, Application of Advanced Statistical Techniques; SOC 812, Advanced Research Methods; SOC 845, Seminar in Sociological Theory; and two 800-level graduate seminars. SOC 851, Directed Research, is needed to fulfill this requirement. A total of 60 percent of the 36 hours must be 700 level or above.

Examinations
Students electing the thesis program in sociology must pass an oral defense of the thesis.

Courses for Graduate/Undergraduate Credit

SOC 501. Sociological Statistics (3). Application of descriptive and inferential statistics to sociological problems. Includes computer experience with statistical software. Prerequisites: SOC 111, SOC 312 or concurrent enrollment, and MATH 111.

SOC 512. Measurement and Analysis (4). An applied study of the conceptual tools and methodological skills needed to conduct quantitative sociological research. Prerequisites: SOC 111, 312, 501.

> SOC 513. Sociology of Aging (3). General education further study course. Cross-listed as GERO 513. Analyzes the social dimensions of old age, including changing demographic structure and role changes and their impact on society. Prerequisite: SOC 111.

> SOC 515. Family Diversity (3). General education further study course. Analyzes the varieties of family forms in the U.S. with particular emphasis on the intersection of gender, race/ethnicity, social class, and sexual orientation. Attention is given to the reciprocal effects of families and their social environments and the impact of public policies on families. Prerequisite: SOC 111.

> SOC 516. Sociology of Gender Roles (3). General education further study course. Cross-listed as WOMS 516. Analyzes the institutional sources of male and female roles, the source of changes in these roles, the consequent ambiguities and conflicts. Prerequisite: SOC 111.

> SOC 517. Intimate Relations (3). Examines the social dimensions of intimacy including an analysis of intimacy in different types of relationships, i.e. romantic, friendship, marriage. Reviews theory and research in the area with a special focus on the place of intimacy in social interaction. Prerequisite: SOC 111.

SOC 520. Family and Aging (3). Cross-listed as GERO 520. Analyzes the families and family systems of older people. Emphasizes demographic and historical changes, care giving, and intergenerational exchanges and relationships. Prerequisite: SOC 111 or GERO 100 or jr. standing.

SOC 533. Sociology of Law (3). Considers the extent and nature of criminal behavior and societal reactions to it. Prerequisite: SOC 111.

SOC 534. Medical Sociology (3). Analyzes social and cultural factors related to physical and mental illness. Also includes the dynamics of communication and role relationships among patients and medical personnel and social research and theory relevant to the health professions. Prerequisite: SOC 111.

SOC 537. The Social Consequences of Disability (3). An eclectic survey of the social aspects of disability showing the impact of social values, institutions, and policies upon adults with disabilities. Appropriate for both students of sociology and the service professions. Prerequisite: SOC 111.

SOC 538. Urban Sociology (3). Analyzes social and cultural factors related to physical and mental illness. Also includes the dynamics of communication and role relationships among patients and medical personnel and social research and theory relevant to the health professions. Prerequisite: SOC 111.

> SOC 539. Juvenile Delinquency (3). General education further study course. The factors related to juvenile delinquency and the measures of treatment and prevention. Prerequisite: SOC 111.*

SOC 540. Criminology (3). The extent and nature of criminal behavior and societal reactions to it. Prerequisite: SOC 111.*

SOC 541. Contemporary Corrections (3). Historical and contemporary programs for the treatment of offenders viewed as societal reactions to criminal behavior. Prerequisite: SOC 539 or 540.*

SOC 543. Aging and Public Policy (3). Explores the impact of an aging population on social institutions, covers the history of American aging policies and the organization and financing of health care for the elderly, and compares public approaches to responding to the needs of an increasingly diverse aging population. Prerequisite: SOC 111 or GERO 100 or junior standing.

SOC 545. Sociological Theory (3). Generally offered fall semester only. A comprehensive survey of sociological theory, spanning both classical and contemporary theorists relevant to the development of sociology. Prerequisite: 9 hours of sociology.

SOC 598. Internship (1-6). Supervises persons involved in internships or placements in the community where credit can be given. Prerequisite: departmental consent.

SOC 600. Selected Topics in Sociology (3). Study in a specialized area of sociology emphasizing student research projects. Includes deviant behavior, political sociology, and the family. Repeatable for a maximum of 6 hours credit. Prerequisites: SOC 111, instructor’s consent, and substantive area course.

SOC 651. Directed Research (3). Gives the student further research skills in an area of special interest. All students are under the direction of a member of the graduate faculty who guides them in developing research skills. Prerequisites: SOC 512 or equivalent and instructor’s consent.

SOC 670. Independent Reading (1-3). For the advanced student capable of doing independent work in an area of special interest. Prerequisites: 15 hours of sociology and instructor’s consent.

SOC 781. Cooperative Education in Sociology (1-4). Provides practical experience, under academic supervision, that complements the student's academic program. Consultation
with and approval by an appropriate faculty advisor are necessary. With advisor approval, up to 4 hours of Cooperative Education may count toward graduate degree requirements. Graded Cr/No only.

*Prerequisite may be waived with departmental consent.

Courses for Graduate Students Only

SOC 801. Application of Advanced Statistical Techniques (3). Usually offered fall semester only. Seminar demonstrates the application of statistical packages via mainframe and personal computers to analyze data and interpret the output. Examines statistical tests from univariate to multivariate. Prerequisite: SOC 501 or departmental consent.

SOC 812. Advanced Research Methods (3). Through classical and contemporary readings, graduate students deepen their understanding of the methodological steps of the research process. Students address methodological issues while conducting a research project using design methodologies, sampling practices, and measurement techniques. Prerequisite: SOC 512 or departmental consent.

SOC 815. Seminar on the Family (3). Review of recent research on the family and the theoretical implications thereof. Prerequisite: SOC 515 or departmental consent.

SOC 820. Seminar in Social Movements (3). Analyzes the elements in social movements as factors in social and cultural change. Prerequisite: departmental consent.

SOC 825. Seminar in Organizational Analysis (3). Explores selected problems in organizational theory based on major theoretical and empirical approaches, both classical and contemporary. Prerequisite: departmental consent.

SOC 830. Seminar in Stratification and Power Structure (3). Examines different theoretical and methodological approaches to understanding stratification and class analysis. Prerequisite: departmental consent.

SOC 834. Seminar in Urban Sociology (3). Through classical and contemporary readings, course examines issues and concerns of countries in the process of urbanization. Prerequisite: SOC 534 or departmental consent.

SOC 845. Seminar in Sociological Theory (3). Usually offered spring semester only. Examines classical and contemporary sociological theories and focuses on including the application of such theories in students’ thesis and nonthesis projects. Prerequisite: SOC 545 or departmental consent.

SOC 847. Seminar in Recent Developments in Sociology (3). Major issues, new theories, new techniques of research, new areas of research, and new applications. Repeatable for credit but not to exceed 6 hours. Prerequisites: 15 hours of sociology and departmental consent.

SOC 851. Directed Project (1-3). A project conducted under the supervision of an academic advisor for the non-thesis option. Requires the completion of a written report and an oral presentation of the research to the faculty. Prerequisite: consent of academic advisor.

SOC 860. Proseminar—Teaching Sociology (1). Usually offered fall semester only. Examines the academic roles of sociologists. Prerequisite: departmental consent.

SOC 870. Independent Reading. (2-3). Advanced systematic reading in a topical area under the tutelage of a member of the graduate faculty. Repeatable for credit not to exceed 6 hours. Prerequisite: departmental consent.

SOC 875-876. Thesis. (3-6).

Spanish
See Modern and Classical Languages and Literatures.

Urban and Public Affairs, Hugo Wall School of

The Hugo Wall School of Urban and Public Affairs is committed to enhancing the quality of public life through high-quality graduate instruction, excellence in applied research, and responsive community service. This focus results not only in an excellent graduate education for students, but also allows a special connection with the community’s needs through research and service. By integrating teaching, research, and service, the school makes a distinctive contribution to Wichita State University’s long-standing commitment to service to Wichita, the surrounding communities, and the region.

The school serves as the academic home for the Master of Public Administration degree, the Center for Urban Studies, and the Kansas Public Finance Center. Through these units, faculty, staff, and students blend teaching, research, and service in the interdisciplinary field of urban and public affairs. The Hugo Wall School offers special opportunities for students interested in urban and public affairs. Students completing the Master of Public Administration degree gain experience through hands-on research and network with practitioners in the field of public administration.

Financial Assistance

The school has two forms of financial aid available to provide students with financial assistance, as well as an opportunity to be directly involved with research and service projects. Financial aid in the form of graduate assistantships and fellowships is awarded competitively on the recommendation of the faculty in the Hugo Wall School of Urban and Public Affairs.

Graduate assistants aid faculty in the Hugo Wall School in instruction, as well as work directly with faculty and professional staff on research and community service projects through the Center for Urban Studies and the Kansas Public Finance Center. Graduate assistants work 20 hours per week with faculty and staff in the school’s teaching, research, and public service activities.

The Hugo Wall School has four endowed fellowships available for financial assistance to qualifying graduate students enrolled in the Master of Public Administration degree. These fellowships—the Hugo Wall, George Pyle, Mike Hill, and George Van Riper—are awarded on a competitive basis to students with exemplary records and specific career interests in the field of public administration.

Public Administration (PADM)

Graduate Faculty

Distinguished Professor: W. Bartley Hildreth (Regents Distinguished Professor of Public Finance)

Professors: H. Edward Flentje (director, Hugo Wall School and Center for Urban Studies), Mark A. Glaser, Joseph P. Pisciotta, Samuel J. Yeager (graduate coordinator), John D. Wong

Associate Professors: Nancy McCarthy Snyder, Melissa Walker

Master of Public Administration

The Master of Public Administration (MPA) degree program, with instruction in public management, public finance, and public policy, prepares students for positions of leadership in public and nonprofit organizations. The degree is structured to respond to the unique student body of an urban university. The Master of Public Administration program is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA).

The Master of Public Administration (MPA) degree draws upon the methods and perspectives of the social and behavioral sciences, economics, and the humanities. The link between these disciplines and the challenges of public management are emphasized through the use of practitioners in the classroom, policy-relevant research assignments, public affairs seminars, and internships. Teaching faculty, with significant professional experience in state and local government, are engaged in cutting-edge research relevant to public and nonprofit organizations in Kansas. This experience allows faculty to bring relevant perspectives on public management into the classroom.

Graduates of the MPA degree program now hold positions of responsibility in state and local government and in nonprofit agencies throughout the United States and in other countries. Graduates serve as city managers and department heads, program managers, finance directors, budget analysts, management analysts, and agency planners. Although the majority are employed in public service, some graduates of the program have taken positions in the private sector, while still others have pursued additional study in law, doctoral education, or other specializations.

Admission Requirements

The Master of Public Administration degree is designed for students to begin study in the fall semester. The deadline for applications for fall semester admission is April 1. Admission to begin study in the spring semester is considered on an exceptional basis.
and class availability. The deadline for spring admissions is November 1. Admission to the MPA program is a two-part process.

First, applicants for the degree program must complete a graduate school application, meeting the following criteria: (1) completion of undergraduate degree from a regionally accredited college or university and (2) a grade point average of at least 3.0 (4.0 scale) in the last 60 hours, including any post-graduate work.

International students must attain a minimum score of 600 paper-based, 250 computer-based, or 100 internet-based on the Test of English as a Foreign Language (TOEFL).

Second, applicants must submit the following items to the graduate coordinator of the Hugo Wall School: (1) a letter of application outlining the student's career plans and how the MPA degree would further those plans; (2) a resume including the student's work and volunteer experience; and (3) two letters of reference from individuals with direct knowledge of the student's work experience or academic performance.

Faculty will consider exceptions to the minimum grade point requirement (3.000 in the last 60 hours) based on a student’s academic record, career plans, work and volunteer experience, and letters of reference. In reviewing requests for exceptions faculty give consideration to achieving a diverse student body, racially and culturally, and a balance of pre-service and in-service students.

Degree Requirements

The Master of Public Administration degree consists of 39 graduate hours, taken over at least three semesters of study.

Core Curriculum. All degree candidates are required to complete the eight core courses:
- PADM 702, Research Methods in Public Administration
- PADM 710, Public Sector Organizational Theory and Behavior
- PADM 725, Public Management of Human Resources
- PADM 745, The Environment of Public Administration
- PADM 765, Public Sector Economics
- PADM 802, Quantitative Methods for Public Sector Professionals
- PADM 865, State and Local Government Finance
- PADM 895, Public Decision Making

Areas of Emphasis. In addition to the core, students develop an area of emphasis approved by an advisor. Students may select areas that fit their career interests. Common areas include state and local government management, financial management, and policy analysis.

Internships

Internships are an important part of the MPA program. Pre-service students are encouraged to take an internship which must last at least nine months. Internship (PADM 890) carries 3 hours of credit and includes attendance at periodic seminars. Intern positions are remunerative and are awarded on a competitive basis. Although placement cannot be guaranteed, the public administration program has an excellent placement record.

Graduate Certificates

Graduate Certificate in City/County Management

This graduate certificate program offers advanced study in city and county management. The program enhances students’ career opportunities and provides state and local practitioners in city and county management an avenue to improve their skills. The core courses include PADM 725, Public Management of Human Resources; PADM 825, State and Local Government Administration; PADM 865, State and Local Government Finance; and one of the following: PADM 560, Planning Process; PADM 760, State and Local Economic Development; PADM 775 Local Government Law; or PADM 785, Public Works Administration.

Graduate Certificate in Economic Development

This graduate certificate program offers advanced study in economic development by state and local governments. The program enhances students’ career opportunities and provides state and local practitioners in economic development an avenue to improve their skills. The four courses include: PADM 560, Planning Process; RE 619, Urban Land Development; PADM 688 or ECON 688, Urban Economics; and PADM 760, State and Local Economic Development.

Graduate Certificate in Public Finance

This graduate certificate program offers advanced study in public finance. The program enhances students’ career opportunities and provides public finance practitioners an avenue to improve their skills. The four course sequence includes: PADM 765, Public Sector Economics, PADM 865, State and Local Government Finance, PADM 866, Public Financial Management, and PADM 867, State and Local Government Budgeting.

Successful completion of these certificate requirements is noted on the student’s university transcript, and a Graduate Certificate is awarded by Wichita State University. Application for the certificate program requires completion of a bachelor’s degree, core prerequisites, and admission to the Graduate School.

Courses for Graduate/Undergraduate Credit

PADM 501, Integrity in Public Service (3). Cross-listed as CJ 501. Exposes the student to basic principles of personal and professional integrity and how those principles apply to their daily life as a member of the community and as an employee of a government or social service agency. Emphasizes case study method, using cases and examples from a wide range of government and non-profit agency experiences. Students become aware of the moral and ethical issues which may arise in their professional and personal lives; gain an understanding of ethical behavior; and become more personally and professionally responsible. Prerequisite: junior- or senior-level or instructor’s permission.

PADM 550. Workshop (3). Specialized instruction using variable format in relevant urban and public affairs subjects. Repeatable for credit up to 6 hours.

PADM 560. The Planning Process (3). For students desiring to work in an urban planning agency or who will be involved in planning issues as an administrator at the city, county, state, or federal level. Also for students seeking an understanding of the complex process of urban-related life. Examines the role of planning in solving human and environmental problems. Emphasizes the relationship between specialists, citizens, and elective officials as participants in the planning process.

PADM 585. Management in the Nonprofit Sector (3). Examines the management and governance of nonprofit organizations. Includes strategic planning, marketing and fund-raising, management of financial and human resources (including volunteers), governing structures, and the role of boards.

PADM 621. Environmental Law (3). An in-depth analysis of emerging federal, state, and local legislation; judicial decisions; and administrative policies in environmental protection. Explores the roles of a variety of governmental agencies and nongovernmental organizations as related to prevention and enforcement processes of environmental protection. Includes issues in the development and implementation of environmental policy. Prerequisite: an advisor-approved methods class.

PADM 625. Computer Applications for Public Policy (3). Familiarizes students with major types of software applications for microcomputers and their use in public policy analysis.

PADM 651. Dispute Resolution (3). Cross-listed as CJ 651. Examines a range of topics including causation, typologies, communications, mediation, arbitration, and other dispute resolution techniques. Includes criminal and victim media- tion and both inter-group and inter-organization relations and dispute resolution techniques. Analyzes case studies.

PADM 688. Urban Economics (3). Cross listed as ECON 688. A survey of the economic structure and problems of urban areas on both the microeconomic and macroeconomic levels. Stresses the application of regional economic analysis in the study of urban areas as economic regions. Prerequisites: ECON 201 and 202, or ECON 800, and junior standing.

PADM 700. Urban Affairs (3). A study of the policy issues faced by local government in an urban setting from a multidisciplinary point of view.
PADM 702. Research Methods (3). Cross-listed as GERO 702. Acquaints students with applied public policy research methods. Emphasizes locating, collecting, appraising, and utilizing both primary and secondary sources of data of the type used in policy, planning, and administrative research. Students must complete several short research projects.

PADM 710. Public Sector Organizational Theory and Behavior (3). Cross-listed as POLS 710. Reviews the scope of the field of public administration, including a survey of key concepts and schools of thought underlying the field, and examines issues shaping the future development of the field.

PADM 725. Public Management of Human Resources (3). Cross-listed as POLS 725. Surveys the major areas of management of human resources in the public sector. Includes hiring, training, evaluation, and pay promotion policies. Emphasizes the laws governing public personnel management and on the unique merit, equal employment opportunity, productivity, unionization, and collective bargaining problems found in the public sector.

PADM 745. The Environment of Public Administration (3). Surveys the political and governmental institutions that underlie the practice of public administration. Includes political systems, constitutional authority, legislative process, intergovernmental relations, and government regulation.

PADM 750. Public Administration Workshops (1-3). Specialized instruction using variable format in a public administration or urban affairs relevant subject. Repeatable for credit.

PADM 755. Special Topics in Urban and Public Affairs (3). Provides students with an opportunity to engage in advanced study in topics that are of immediate concern and arise only occasionally. Content varies with issues that arise, student needs, and faculty expertise. Directed to Master of Public Administration students. May be repeated if topics are different. Prerequisite: instructor’s consent.

PADM 760. State and Local Economic Development (3). Explores the roles of state and local governments and officials in economic development through the use of case studies. Examines financing in economic development from the perspectives of public purpose and community objectives.

PADM 765. Public Sector Economics (3). Cross-listed as ECON 765. An analysis of fiscal institutions and decision making in the public sector of the American economy, budget planning and execution, taxation, debt, and fiscal policy. Prerequisites: ECON 201 and 202 or instructor’s consent.

PADM 775. State and Local Government Law (3). Exposes students to the legal principles which undergird the practice of public administration. Includes discussion of public works professionals; public works organizations and institutions; infrastructure planning, policy, and project analysis; procurement, purchasing, and contract administration; geographic information systems; and transportation, water, waste water, and surface water system construction, maintenance, and replacement.

PADM 798. Independent Study (1-3). For graduate students to pursue research in areas not normally covered in coursework. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

Courses for Graduate Students Only

PADM 802. Quantitative Methods for Public Sector Professionals (3). Uses standard microcomputer statistical software and analysis to introduce statistics and quantitative analysis for organizational and policy decision making. Prerequisite: instructor’s consent.

PADM 825. State and Local Government Administration (3). Examines administrative leadership in state and local government through case study and field experience. Draws on the experience of professional public managers. Designed for students nearing completion of the Master of Public Administration degree and planning careers in public management. Prerequisite: instructor’s consent.

PADM 845. Public Policy Analysis and Program Evaluation (3). An overview of approaches to public policy analysis and program evaluation. Examines the role of decision participants in public policy development, implementation, and evaluation. Explores policy and program functions and their intended and unintended impacts. Focuses on methodologies for collection of data and their use in the assessment of programs and program impacts. Prerequisites: approved statistics class and an approved methods class.

PADM 865. State and Local Government Finance (3). Cross-listed as ECON 865 and POLS 865. Analyzes state and local government expenditure and revenue systems; introduces state and local financial administration. Prerequisite: PADM 765 or instructor’s consent.

PADM 866. Public Financial Management (3). This course is cross-listed with FIN 866. Deals with selected aspects of state and local government financial management. Introduces fund accounting, costing of government services, capital budgeting, debt management, and asset management. Prerequisite: PADM 865 or instructor’s consent.

PADM 867. State and Local Government Budgeting (3). Analyzes the development and utilization of the budgetary process in government administration emphasizing the budget in relation to its role in policy formulation and management. Prerequisite: PADM 865 or instructor’s consent.

PADM 868. Seminar in Public Finance Systems (3). An analytical study of selected topics in the politics and administration of revenue, expenditure, and borrowing policies of governmental organizations. Prerequisite: departmental consent.

PADM 890. Internship (3). Integrates academic pursuits and practical experience. Students admitted to the internship are assigned to work in an approved government, community, or private organization for a minimum of nine months. Prerequisite: completion of all PADM core courses and 6 hours of additional graduate-credit courses.

PADM 895. Public Decision Making (3). Focuses on decision making by public managers through case study method. Reviews models of public decision making. Explores public management from the perspective of public purposes, politics, organizational results, and ethics. Prerequisites: successful completion of all other core courses in the MPA or instructor’s consent.

PADM 897. Advanced Research Methods (3). Advanced research course; studies the selection and formulation of research problems, research design, hypothesis generation, scale construction, sampling procedures, and data analysis and interpretation.

PADM 898. Applied Research Paper (3). Original research project under a faculty member’s direction. Project requires conceptualization, execution, preparation of a written report, and defense of that report before a faculty committee. Intended to be a major project or capstone activity completed at the end of a student’s program of study. It must be an individual effort, not a group project. Prerequisite: graduate-level research methods class.

Women’s Studies (WOMS)

Graduate Faculty

Associate Professors: Deborah Gordon, Ramona Liera-Schwichtenberg (chairperson), Chinyere Okafor
Assistant Professor: Doris Chang

Students may earn a master’s degree in several areas with an emphasis in women’s studies. These include curriculum and instruction; counseling, educational, and school psychology; sociology; and cross-cultural communications. Women’s studies may be included as one of two or three areas of interest under the MA degree in liberal studies, an individually designed, interdisciplinary graduate program (described in the Fairmount College of Liberal Arts and Sciences, Liberal Studies section of the Graduate Catalog). In other areas, such as the community/clinical program in psychology, students may orient course electives and thesis research to accommodate an interest in women’s studies. The following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit

WOMS 510. Hollywood Melodrama: The Woman’s Film (3). Melodrama, as a “woman’s genre,” is important to the development of feminist film criticism, which interrogates the contradictory meanings of motherhood and family within this culture. Through readings and films, this course provides a...
such as lawyers and legislators. Also considers women in the field of law, aspects of women's rights, including the equal rights amendment to the U.S. Constitution; right to choose a name; sex discrimination in employment, education, and credit; welfare; and criminal justice. Also considers women in the field of law, such as lawyers and legislators.

WOMS 513. Women in Africa (3). Who is the African woman? What are her joys, obstacles, struggles, triumphs, and rites of passage? This course addresses these issues through their intersection with gender, race/ethnicity, and class in selected traditional and postcolonial settings on the African continent. Facilitates appreciation of African women and gender through African cultural voices. Emphasizes the views of women expressed in their songs, dances, dramas, ritual actions, activism, and writing. Telephone/video confer- ence with women in Africa, as well as stories, poems, and other literary, historical, and anthropological material will be used.

WOMS 514. Women in the Middle East (3). Examines Arab women of the Middle East. Focuses on women in the region historically designated as the “fertile plains”—Egypt, Lebanon, Syria, Jordan, and the Palestinian Territories. Covers the impact of Western colonialism and global geopolitics on women’s lives; women’s activism in relation to nationalism and women’s rights; Western racial stereotypes of Arab women and men and their role in foreign intervention in the 20th and 21st centuries. Provides case studies in the relationship of nationalism and women’s rights as framed by Arab women’s studies.

WOMS 516. Sociology of Gender Roles (3). Cross-listed as SOC 516. Analyzes the institutional sources of male and female roles, the source of changes in these roles, the consequent ambiguities and conflicts. Prerequisite: SOC 111.

WOMS 523. Feminist Film Criticism (3). Applies critical methods of analysis from the field of feminist film studies (such as psychoanalysis, ideology critique, close textual analysis, narrative, and genre criticism) to the representa- tion of women in film. Emphasizes historical development of feminist film theory and criticism as it relates to classical Hollywood narrative, film genres, and avant-garde film. Prerequisite: 3 hours of upper-level humanities or 3 hours of upper-level women’s studies.

WOMS 532. Women in Ethnic America (3). Cross-listed as HIST 532. An in-depth, thematic understanding of the historical experiences of women of color across space and time in U.S. history. Employing a female-centered framework of analysis, course probes the intersections of race, class, gender, and sexuality in women’s lives.

WOMS 533. Women and the Law (3). Introduces the legal aspects of women’s rights, including the equal rights amendment to the U.S. Constitution; right to choose a name; sex discrimination in employment, education, and credit; welfare; and criminal justice. Also considers women in the field of law, such as lawyers and legislators.

WOMS 534. Psychology of Women (3). Cross-listed as PSY 534.

WOMS 535. Literary Images of Women: Diverse Voices (3). Cross-listed as ENGL 535. Explores literature written in English by women of diverse ethnic, racial, class, and other backgrounds as well as of varying sexual orientations, ages, and degrees of physical ability. Analyzes materials as literary works and as expressions of women’s differences from one another. Works are selected based on their specific attention to the question of gender as it intersects with other elements of culture. Prerequisites: ENGL 101, 102, and one course in literature.

WOMS 536. Writing by Women (3). Cross-listed as ENGL 536. Explores various themes in critical approaches to literature composed by women writers, especially those whose works have been underrepresented in the literary canon. Genres and time periods covered, critical theories explored, and specific authors studied vary in different semesters.

WOMS 537. Contemporary Women’s Drama (3). Examines contemporary plays by and about women to discover and explore the insights of the various playwrights into the lives and roles of women. In addition to reading and analyzing plays, students write plays of their own.

>WOMS 541. Women, Children, and Poverty (3). General education issues and perspectives course. Cross-listed as SCWK 541. Addresses the problem of poverty among women in the U.S. today, and examines existing and proposed public policies designed to alleviate the problem. Explores theoretical models of poverty policy analysis and the role of values in their formulation and implementation. Discusses issues of age, race and family; special attention is given to poverty among Kansas families. Prerequisite: 6 hours of social science.

WOMS 543. Women and Health (3). Cross-listed as NURS 543. Examines the historical development of the women’s health movement, focuses on current issues relevant to women and health care, and explores the roles of women in the health care system and as consumers of health care. Examines self-care practices of women and studies ways to promote positive health practices. Open to non-nursing majors.

WOMS 570. Directed Readings (1-3). For students who wish to pursue special reading or research projects not covered in coursework. Prerequisite: instructor’s consent.

WOMS 580. Special Topics (1-3). Focuses on advanced topics of interest to women’s studies.

>WOMS 586. Gender, Race, and Knowledge (3). General education issues and perspectives course. Examines the impact of gender and race on knowledge (understanding of objects, people, events, and activities). Assumes that gender, race, and knowledge are socially constructed categories. Concerned with science as a practice of representation. Focuses on the "white masculinist" ideas or beliefs that motivate and affect the practice of academic disciplines. Considers: What is the relationship between the making of masculinity and femininity and science? How are gender and race woven into science and social science and with what results? Does the entrance of white women and people of color into the sciences and humanities change how they are practiced? Do they produce significantly different understanding about the world? Central premise is that all knowledge emerges from some type of love or passion. What types of passion produce knowers, knowing, and the known?

WOMS 587. Theories of Feminism (3). Because feminism is not a single ideological stance or perspective, course examines a variety of ideas underlying feminist cultural critiques and visions for social change. Discusses the con- tribution of women’s studies to various academic disci- plines. Prerequisites: WOMS 287 and 387, or 6 hours of women’s studies courses, or instructor’s consent.

WOMS 635. Leadership Techniques for Women (3). Cross-listed as COMM 635. Provides the female student experience in decision making and improves skills in leadership through role playing and exercise in group dynamics.

Courses for Graduate Students Only

WOMS 870. Directed Readings. (2-3). For graduate stu- dents to pursue research in areas not normally covered in course work. Repeatable for credit with departmental con- sent. Prerequisite: instructor’s consent.

WOMS 880. Seminar in Women's Studies (3). Intensive study of selected women's studies topics. Seminar discussion, reports, and research project. Previous topics include Advanced Theories of Feminism and Contemporary Women's Fiction. Repeatable for credit with departmental consent. Prerequisite: instructor’s consent.

The following abbreviations are used in the course descriptions: R stands for lecture and L for laboratory. For example, 4R; 2L means 4 hours of lecture and 2 hours of lab.