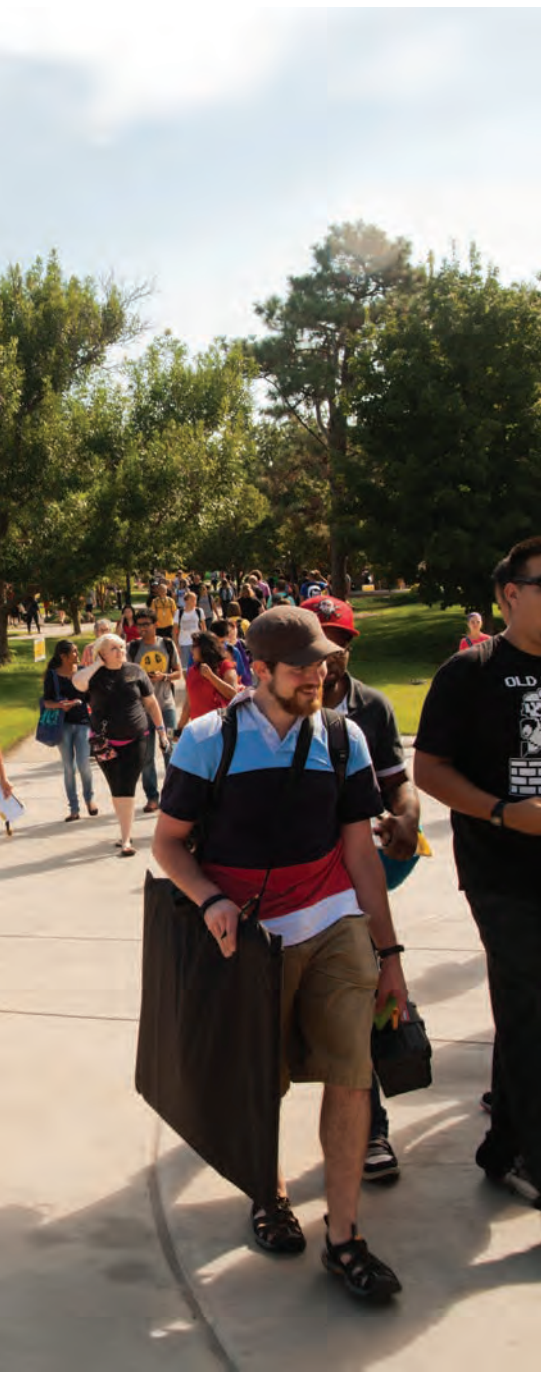
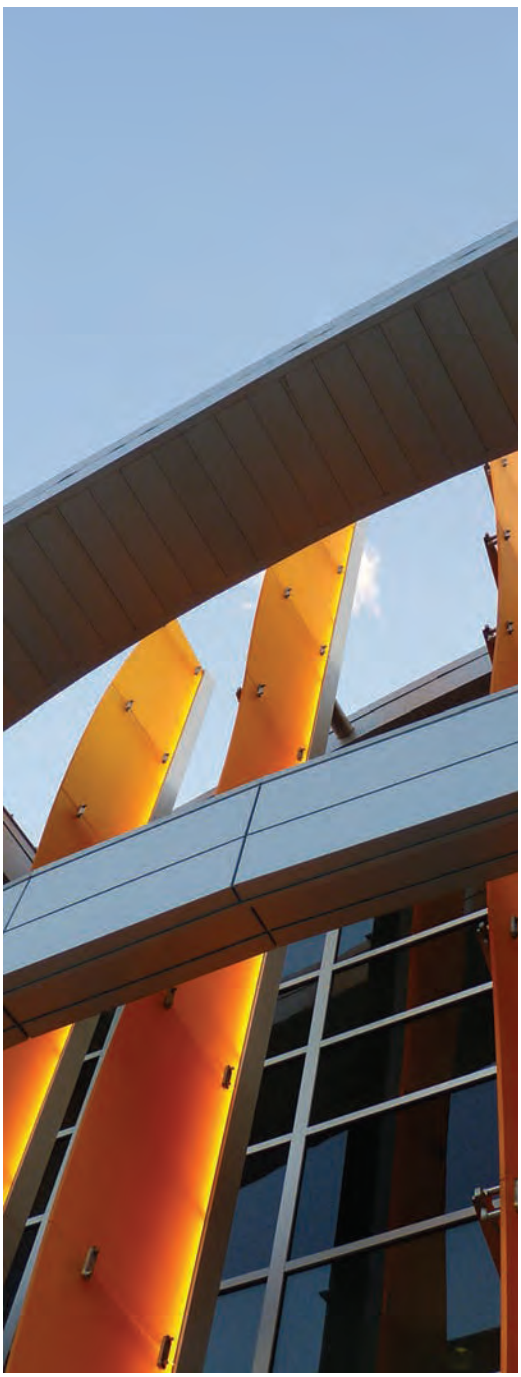
WICHITA STATE UNIVERSITY





# GRADUATE CATALOG

2016-2017

# Graduate Catalog

## 2016-2017

Graduate School
Wichita State University
1845 Fairmount
Wichita, Kansas 67260-0004
(316) 978-3095
wichita.edu/gradschool

WICHITA STATE UNIVERSITY

## Academic Programs at Wichita State University Are Accredited by or Hold Membership in the Following Associations

ABET, http://www.abet.org
Accreditation Review Commission on Physician Assistant Education
American Association of State Colleges and Universities
American Chemical Society
American Dental Educators' Association
American Psychological Association
American Speech-Language and Hearing Association
Association of Public and Land-Grant Universities
Association to Advance Collegiate Schools of Business—Business and Accounting
Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association
Commission on Accreditation of Athletic Training Education
Commission on Collegiate Nursing Education
Commission on Dental Accreditation of the American Dental Association
Commission on Sport Management Accreditation
Council on Social Work Education
Human Factors and Ergonomics Society
Kansas State Board of Nursing
Kansas State Department of Education
National Accrediting Agency for Clinical Laboratory Sciences
National Association of Schools of Art & Design Commission on Accreditation
National Association of School Psychologists
National Association of Schools of Dance
National Association of Schools of Music
Network of Schools of Public Policy, Affairs & Administration
National Council for Accreditation of Teacher Education
The Higher Learning Commission*

* The Higher Learning Commission, 230 South LaSalle Street, Suite 7–500; Chicago, Illinois 60604; 1 (800) 621-7440, ncahlc.org

**Graduate Catalog 2016-2017**
The Graduate Catalog, an official publication of the WSU Graduate School, is produced annually to provide general information for students admitted to or considering graduate education at Wichita State. The Graduate Catalog contains policies, regulations, procedures, and fees current and in effect at the time of publication. Wichita State University and the Graduate School reserve the right to make changes at any time to reflect current university policies, administrative regulations and procedures, and revisions required by changes in federal or state law. Information provided in this catalog is subject to change without notice and does not constitute a contract between Wichita State University and a student or an applicant for admission to the Graduate School.

**Electronic and Additional Copies of the Catalog**
Portions of this catalog may be viewed in electronic form on the Internet at www.wichita.edu/catalog.

All graduate students admitted to a degree program are eligible to receive one complimentary copy by presenting their Shocker identification card to the Graduate School office for verification. Additional copies of the catalog may be purchased at the WSU Bookstore in the Rhatigan Student Center.

Produced by Lisa Fleetwood, catalog editor, 3/16

# Table of Contents—Graduate Catalog

# Graduate Degree Programs • Departmental Admission Requirements

1845 Fairmount, Wichita, Kansas 67260-0004 wichita.edu/gradschool (316) 978-3095

Minimum grade point average (GPA) for all master's programs is 2.750 on last 60 hours of coursework or nearest two full years of coursework unless otherwise stated.

| Programs | Departmental Application Requirements |
|---|---|
| **Accounting (MACC)** | Overall GPA of 3.200; grade of *B* (3.000) or better in all accounting courses; Undergraduate degree in accounting or the functional equivalent of an undergraduate degree in accounting from an AACSB accredited institution. |
| **Aerospace Engineering** | |
| Master of Science (MS) | GPA 3.000 last 60 hours; undergraduate degree in engineering or related field. |
| Doctor of Philosophy (PhD) | GPA 3.250 in all graduate hours, master's degree in engineering or physical science. |
| **Aging Studies (MA)** | Contact information for two professional references; personal statement; documented computer literacy. Application deadlines: July 15 for fall, December 1 for spring. |
| **Anthropology (MA)** | GPA 3.250 last 60 hours; 15 hours of anthropology; statement of purpose with intended specialization, application deadlines: February 1 for fall, October 1 for spring. |
| **Art, Studio (MFA)** | BFA degree or equivalent; 3.000 in art courses; upload the following through wsufinearts.slideroom.com: resume, portfolio (15 color slides), three references, statement of philosophy. Options: ceramics, painting, photo media, printmaking, and sculpture. Deadlines: first Wednesday in February for fall admission; first Wednesday in October for spring admission. |
| **Audiology (AuD)** | GPA 2.750 overall; 3.000 last 60 hours and major; GRE score is desired; Miller Analogies Test (MAT) may be substituted for GRE; three recommendation letters, one page personal essay; acceptance fee of $50. Applicants are encouraged to file separate application through CSDCAS. Summer admission only. The deadline to submit CSDCAS applications is January 15, by 11:59 p.m. EST. Graduate School application, application fee, transcripts, recommendations and other supporting documents are due by January 15. |
| **Biological Sciences (MS)** | GPA 3.000 in all undergraduate biology courses; 24 credit hours in biology; 15 credit hours in chemistry; three reference letters from science faculty, statement of purpose that addresses the student's area of interest in biology. Application deadlines: March 1 for fall, October 1 for spring. |
| **Business Administration (MBA)** | GMAT or GRE scores taken within the last six years, personal goals statement; 2 reference forms; current resume. GMAT/GRE may be waived in certain circumstances; visit wichita.edu/mba for details on exceptions. Application deadlines: July 1 for fall; December 1 for spring. |
| **Executive Business Administration (EMBA)** | Departmental application; personal essay; letters of recommendation; interview; 5 years relevant work experience. Program admits every other year (odd years – 2017, 2019, etc.). Application deadline: June 1 in year of intake. |
| **Chemistry** | |
| Master of Science (MS) | BS Chemistry (ACS approved or equivalent); GPA 3.000 (overall and in all chemistry courses); general GRE (subject recommended); two recommendation letters; statement of goals and research interests. Application deadlines: April 1 for fall, September 1 for spring. |
| Doctor of Philosophy (PhD) | BS Chemistry (ACS approved or equivalent); GPA 3.000 (overall and in all chemistry courses); general GRE (subject recommended); two recommendation letters; statement of goals and research interests. Application deadlines: April 1 for fall, September 1 for spring. |
| **Communication (MA)** | GPA 3.000 over last 60 hours; statement of purpose. |
| **Communication Sciences and Disorders** | |
| Master of Arts (MA) | GPA 2.750 overall; 3.000 last 60 hours and major; GRE score is desired; Miller Analogies Test (MAT) may be substituted for GRE; three recommendation letters; one page personal essay; acceptance fee of $50. Applicants are encouraged to file separate application through CSDCAS. Fall admission only. The deadline to submit CSDCAS applications is January 15, by 11:59 p.m. EST. Graduate School application, application fee, transcripts, recommendations and other supporting documents are due by January 15. |
| Doctor of Philosophy (PhD) | GRE score is desired; Miller Analogies Test (MAT) may be substituted for GRE. GPA at least 3.500 in last 60 hours of coursework; professional resume; three recommendation letters; acceptance fee of $100. |
| **Computer Networking (MS)** | BS in Computer Science, Computer Engineering, Electrical Engineering, or an area related to information technology; GPA 3.000 in last 60 hours; GRE General Test is required for those whose degree is from institutions outside the U.S. |
| **Computer Science (MS)** | BS in Computer Science, Computer Engineering, or a related area; GPA 3.000 in last 60 hours; GRE General Test is required for those whose degree is from institutions outside the U.S. |
| **Counseling (MEd)** | GPA 3.000 last 60 hours; statement of professional goals; names, addresses and telephone numbers of three references; resume; 9 undergraduate hours in psychology and 6 additional hours in behavioral sciences; Application deadlines: May 1 for summer/fall applicants; Nov. 1 for spring applicants. |

Minimum grade point average (GPA) for all master's programs is 2.750 on last 60 hours of coursework or nearest two full years of coursework unless otherwise stated.

| Programs | Departmental Application Requirements |
|---|---|
| **Creative Writing (MFA)** | GPA 3.000 in English courses; 24 hours of relevant courses. Fiction option will require 20 pages of original writing; Poetry option will require six original poems. Fall admission only. Application deadline: February 1. |
| **Criminal Justice (MA)** | GPA 3.000 last 60 hours; autobiographical statement of interests and goals; three reference letters. |
| **Earth, Environmental, & Physical Sciences (MS)** | Bachelor's degree in any field of natural sciences, or acceptable coursework in natural sciences. |
| **Economics (MA)** | GPA 2.750 in all economic courses and required mathematics. Must have completed principles of macro- and micro-economics, one course in statistics, and one course in calculus with a grade of *C+* (2.300) or better. |
| **Educational Leadership** | |
| Master of Education (MEd) | GPA 3.000; three reference forms; resume; one year full-time teaching experience in an accredited school; mentor support letter; goals statement. |
| Doctor of Education (EdD) | GPA 3.500 all graduate hours; three years professional experience in P–16 educational organization; three recommendations from supervisors and/or professional peers; resume or CV; goals statement; sample of academic writing. Review of completed applications will begin in the fall semester. Summer admission only. |
| **Educational Psychology (MEd)** | GRE with minimum scores of Verbal–145, Quantitative–145, Analytical Writing–3.5; resume; names, addresses and phone numbers of three people to provide references; statement of professional goals and research interests. |
| **Electrical Engineering (MS)** | BS in Electrical Engineering, Computer Engineering, or a related area; GPA 3.000 in last 60 hours; GRE General Test is required for those whose degree is from institutions outside the U.S. |
| **Electrical Engineering and Computer Science (PhD)** | GPA 3.250 in all graduate hours; GRE with a minimum score of 301 in verbal and quantitative combined; master's degree in electrical engineering, computer science or a related field; evidence of ability to carry out independent research and present it in written English; two letters of recommendation and statement of purpose are encouraged. |
| **Engineering Management (MEM)** | GPA 3.000 last 60 hours and in all graduate work; undergraduate major in engineering, science, business, or related field; satisfactory completion of MATH 243, Calculus II; and IME 255, Engineering Economy; department prefers and strongly recommends the GRE. |
| **English (MA)** | GPA 3.000 in English courses; 24 hours of relevant English courses; 500-word statement of purpose (see departmental information for details on statement of purpose requirements). |
| **Exercise Science (MEd)** | Application letter; three recommendation letters. |
| **History (MA)** | GPA 3.000 in all history courses; undergraduate major in history or minimum of 18 hours of history; one-page statement of purpose; and a writing sample of no more than 20 pages. Application deadlines: March 15 for fall, October 1 for spring. |
| **Industrial Engineering** | |
| Master of Science (MS) | GPA 3.000 in last 60 hours and all graduate work; undergraduate degree in engineering, science, business or other related discipline; satisfactory completion of MATH 243, Calculus II; IME 255, Engineering Economy. Department prefers and strongly recommends the GRE. |
| Doctor of Philosophy (PhD) | Official GRE scores; GPA 3.250 in all graduate hours; evidence of the ability to carry out independent research and present it in written English is highly desirable; two letters of recommendation and a statement of purpose indicating research interests is encouraged; must have completed the following courses or their equivalents: IME 255, Engineering Economy; MATH 344, Calculus III; and a natural science course equivalent to that of the undergraduate engineering requirement; must have programming competence in at least one of the following languages: C, C++, or Visual BASIC; must have earned, or be about to earn, a master's degree in engineering, physical sciences, or other related discipline. |
| **Innovation Design (MID)** | Applicants will be given the opportunity to include in their application any credentials they believe represent their accomplishments and help explain why they wish to join the MID program. A personal interview will be scheduled with the admissions committee if minimum qualifications are met. |
| **Learning and Instructional Design (MEd)** | Show potential to do graduate work by meeting *one* of the following: Be a graduate of the WSU teacher education program with at least a 2.750 GPA in the last 60 hours, *or* a graduate from an NCATE accredited program with at least a 3.000 GPA in the last 60 hours, *or* submit the GRE with scores of at least 152 in Verbal and 143 in Quantitative, *or* achieve a minimum score of 40 on the MAT, *or* provide alternative evidence of academic aptitude. All applicants must also provide evidence of involvement in teaching, and/or program design, or recommendation by the graduate program committee. |
| **Liberal Studies (MA)** | GPA 3.000 last 60 hours; essay; personal interview; Application deadlines: April 1 for fall, October 1 for spring. |
| **Mathematics** | |
| Master of Science (MS) | GPA 3.000 in all mathematics courses; undergraduate major in math or equivalent. |

Minimum grade point average (GPA) for all master's programs is 2.750 on last 60 hours of coursework or nearest two full years of coursework unless otherwise stated.

| Programs | Departmental Application Requirements |
|---|---|
| Doctor of Philosophy (PhD) | GPA 3.000 in last 60 hours (3.250 in all graduate hours if applicant holds master's degree) and 3.250 in mathematics and statistics. |
| **Mechanical Engineering** | |
| Master of Science (MS) | Undergraduate degree in engineering or physical sciences; GPA 3.000 on a scale of 4.000 or First Class standing; GRE strongly recommended, especially if to be considered for financial assistantship; statement of purpose indicating research interests. |
| Doctor of Philosophy (PhD) | GPA 3.250 in all graduate hours; GRE (general); two letters of recommendation from graduate faculty; statement of purpose indicating research interests. |
| **Music (MM)** | Accredited music bachelor's degree; minimum of 60 credit hours in music, with at least 24 hours in basic music studies (history and theory) and 15 hours in a major specialty. Individual options may have additional requirements for admission. Options include: chamber music, composition, history/ literature, instrumental conducting, piano accompanying, piano pedagogy, performance, opera performance. |
| **Music Education (MME)** | BME or equivalent. Options include: choral, elementary, voice, instrumental, instrumental conducting, special education. |
| **Nursing** | |
| Nursing (MSN) | Bachelor's degree with a major in nursing from NLN or CCNE accredited school; GPA of 3.000 or higher in last 60 hours of undergraduate coursework; RN licensure in the U.S. or territories; professional liability insurance; computer literacy; evidence of meeting technical standards as identified by the WSU School of Nursing. |
| Nursing Practice (DNP) | **For students entering following the award of the Bachelor of Science in Nursing (BSN) degree**, a GPA of 3.000 in the last 60 hours is required, as is a BSN from a nationally accredited nursing program (NLN or CCNE), RN licensure in Kansas; an approved graduate statistics course taken within the past six years; professional liability insurance; requires departmental application. Admission for fall semester only–application deadline is May 1.<br>**For students entering the postmaster's following the award of the master's degree,** a GPA of 3.250 in all graduate coursework is required, as is an MSN from a nationally accredited nursing program (NLN or CCNE). Admission for spring semester only—application deadline is October 15. Additional requirements detailed in the nursing section of the WSU Graduate Catalog and on the department website. |
| **Physical Therapy (DPT)** | GRE; GPA 3.000 last 60 hours; references; computer proficiency; physical therapy observation of 20 hours in one or more physical therapy departments; requires separate application through PTCAS by department's published deadline. |
| **Physician Assistant (MPA)** | GPA 3.000 overall and in all prerequisites. Applicants with health care experience given preference, but it is not required. Requires separate application through CASPA by department's published deadline. |
| **Physics (MS)** | Requires 24 credit hours of undergraduate physics, including 3 hours mechanics and 3 hours of electricity and magnetism. |
| **Psychology (PhD)** | |
| Community, Clinical, Human Factors | GRE (general); three references; departmental application; biographical statement; fall admission only; deadline for clinical: December 1; deadline for community and human factors: January 15. |
| **Public Administration (MPADM)** | GPA 3.000 last 60 hours; letter of application; resume; two letters of reference. Intermediate level of skill (or better) with word processing, spreadsheet and presentation software programs. Deadline April 1 for fall, November 1 for spring. |
| **School Psychology (EdS)** | GRE (general); resume; three reference letters; statement of goals and research interests; master's in counseling, educational psychology or related area. |
| **Social Work (MSW)** | GPA 2.750 last 60 hours; strong undergraduate preparation in liberal arts and sciences; departmental application. Application deadline: 5 p.m. on January 15 for fall. |
| **Sociology (MA)** | GPA 3.000 last 60 hours; 15 hours sociology; college algebra; three references; statement of purpose, research interests, goals. Application deadline: March 1 for fall. |
| **Spanish (MA)** | GPA 3.000 in Spanish courses; for non-native speakers, 24 hours undergraduate Spanish beyond basic language courses (8 hours at junior/senior level); for native speakers, 12 hours at the junior/senior level. |
| **Special Education (MEd)** | |
| High Incidence, Early Childhood Unified, Low Incidence, Gifted | GPA 3.000 last 60 hours or acceptable GRE (minimum score 152 Verbal and 153 Quantitative) or MAT scores; eligible for Kansas teaching certificate; applications reviewed upon receipt. |
| **Sport Management (MEd)** | Letter of application; resume; three reference reports; GRE may be required. |
| **Teaching (MAT)** | GPA 3.000 in last 60 hours, or GPA of 2.750 in last 60 hours combined with Miller Analogies Test score of at least 40 or Graduate Record Exam score. ECU and ML/S track students must pass a criminal background check obtained at the applicant's expense. |

Applicants whose native language is not English may also be required to demonstrate English proficiency, in the form of official scores on the TOEFL or IELTS. Please refer to the international admissions section of the catalog for details about the English proficiency requirement. See page 16.

# Graduate Certificate Programs

*Please see the program sections of the Graduate Catalog for specific details about each certificate program offered.*

| Programs | Certificates | Certificate descriptions |
|---|---|---|
| **Business** | Enterprise Systems & Supply Chain Management | A 12-hour program that equips students with the skills and abilities to design and manage enterprise-wide supply chains. Offered jointly with the department of industrial engineering in the College of Engineering. See page 48 or page 91. |
| **Education** | Child/Play Therapy | A 15-hour postmaster's certificate program designed to meet training standards for play therapists established by the Association for Play Therapy. See page 61. |
| | Educational Technology | A program of 15 hours for competency in technology for educators seeking positions involving computers in education or who are interested in adding this area of expertise to their credentials. See page 68. |
| | Engineering Education | A 12-hour program designed to provide engineering graduate students with: (1) knowledge of contemporary learning theories that can be applied to university-level instruction; (2) knowledge and skills in classroom testing and program evaluation; (3) knowledge of pedagogical skills that can be applied to university-level instruction; (4) the skills to apply knowledge of learning theory, pedagogical theory, and measurement theory in an authentic university setting. Offered jointly with the College of Engineering. See page 62 or page 80. |
| | Higher Education Leadership | A 15-hour program designed to prepare current and prospective college or university staff members for entry- or mid-level positions as administrators in two- and four-year colleges and universities; policy makers and student affairs professionals in higher education; and to provide selected coursework/degrees for individuals currently in the field. See page 62. |
| | Interdisciplinary STEM Education | A 18-hour program designed for graduate students interested in designing and/or teaching an interdisciplinary STEM curriculum. See page 68. |
| | Literacy | A 15-hour program designed to allow educators to advance their knowledge and skills of teaching literacy in the classroom, and to integrate literacy into all content areas. Provides advanced study for teachers and educators seeking lead positions in buildings where literacy is a focus for federal legislation and state accreditation. See page 69. |
| **Engineering** | Engineering Education | A 12-hour program designed to provide engineering graduate students with: (1) knowledge of contemporary learning theories that can be applied to university-level instruction; (2) knowledge and skills in classroom testing and program evaluation; (3) knowledge of pedagogical skills that can be applied to university-level instruction; (4) the skills to apply knowledge of learning theory, pedagogical theory, and measurement theory in an authentic university setting. Offered jointly with the College of Education. See page 62 or page 80. |
| **Human Performance Studies** | Functional Aging | A 12-hour program of study of the nature and scope of the physiological aspects of aging and issues related to designing the environment for older adults. See page 75. |
| **Industrial Engineering** | Enterprise Systems & Supply Chain Management | A 12-hour program that equips students with the skills and abilities to design and manage enterprise-wide supply chains. Offered jointly with the department of decision sciences in the Barton School of Business. See page 48 or page 91. |
| | Foundations of Six Sigma & Quality Improvement | A 12-hour program primarily for graduate students with industrial affiliation who are interested in enhancing their skills in quality management and Six Sigma methodology. See page 91. |
| | Lean Systems | A 12-hour program of advanced knowledge and methodology of lean systems design, evaluation and operation for practitioners in industry who are responsible for the development and management of production systems in the workplace. See page 91. |
| | Systems Engineering & Management | A 12-hour program of knowledge and methodology so students can learn to apply systems concepts and techniques to the understanding, description, design and management of large-scale systems requiring the integration of information and human activity. See page 91. |
| **Interdisciplinary** | Great Plains Studies | Interdisciplinary program of 20 hours emphasizing Great Plains study. Provides a context for careers in education, law, museum, community agencies, and other fields where knowledge of the region is useful. See page 155. |
| | Advanced Composite Materials | A 12-hour program aimed at equipping students with the knowledge of advanced composites including materials and processes, manufacturing, and structural analysis and design. See page 80. |
| | Museum Studies | A 12-hour program aimed at preparing students for careers in the museum field. Students gain an overview of museum practice including administration, collections, exhibits and presentation, and education. See page 134. |

*Please see the program sections of the Graduate Catalog for specific details about each certificate program offered.*

| Programs | Certificates | Certificate descriptions |
|---|---|---|
| **Management** | Entrepreneurship and Innovation | A 12-hour program aimed at providing students the knowledge base in entrepreneurship to undertake moving technological expertise or high potential business ideas through the start-up of high growth businesses. Provides extensive conceptual and applied know-how and expertise to students interested in entrepreneurship. See page 48. |
| **Nursing** | Family Nurse Practitioner, Adult/Gerontology Acute Care Nurse Practitioner, Adult/Gerontology Clinical Nurse Specialist, Psychiatric Mental Health Nurse Practitioner | 25-hour postmaster's programs for master's degree or DNP registered nurses who are already nationally certified nurse practitioners or clinical nurse specialists who may desire another specialization (focus) to expand or change their practice area following graduation. See Postmaster's Certificate page 127. |
| **Public Health** | Public Health | A 15-hour program of core public health training in basic public health competencies, including biostatistics, epidemiology, environmental health sciences, health services administration and policy, and social and behavioral sciences. See page 124. |
| **Public Administration** | City & County Management | A 12-hour program offering advanced study in the management of city and county government. See page 169. |
| | Economic Development | A 12-hour program offering advanced study in economic development by state and local governments. See page 170. |
| | Nonprofit Management | A 12-hour program offering advanced study in nonprofit management. See page 170. |
| | Public Finance | A 12-hour program offering advanced study in public finance. The program enhances student's career opportunities and provides public finance practitioners an avenue to improve their skills. See page 170. |

These certificate programs are not eligible for Title IV (federal financial aid) funding unless a certificate is awarded as part of a degree program. Certificate programs which are not eligible for Title IV aid are not gainful employment programs.

# Academic Calendar for 2016–2017

## Fall Semester 2016

| | |
|---|---|
| April –August | Fall semester registration |
| August 22 | Weekday and evening classes begin |
| September 5 | Labor Day holiday |
| September 19 | Final date for filing Application for Degree in *my*WSU portal |
| October 12 | Midterm point |
| October 15–18 | Fall recess (begins at 2 p.m.) |
| November 1 | Final date for withdrawal with nonpenalty grades |
| November 18 | Deadline for submission of Request to Schedule Oral Defense form* |
| November 23–27 | Thanksgiving recess |
| December 2 | Deadline for oral defense to be held* |
| December 8 | Last day of classes |
| December 9 | Final date for all degree requirements, excluding current courses, to be met and reported to the Graduate School, including: oral defense results, comprehensive exam, incomplete grades, digital thesis.* All departmental requirements must have been met.* |
| December 9 | Study day |
| December 10–15 | Final examinations |
| TBA | Commencement |

## Spring Semester 2017

| | |
|---|---|
| November–January | Spring semester registration |
| January 16 | Martin Luther King, Jr. Day holiday |
| January 17 | Classes begin |
| February 13 | Final date for filing Application for Degree in *my*WSU portal |
| March 8 | Midterm point |
| March 20–26 | Spring recess |
| March 31 | Final date for withdrawal with nonpenalty grades |
| April 14 | Deadline for submission of Request to Schedule Oral Defense form* |
| April 28 | Deadline for oral defense to be held* |
| May 4 | Last day of classes |
| May 5 | Final date for all degree requirements, excluding current courses, to be met and reported to the Graduate School, including: oral defense results, comprehensive exam, incomplete grades, digital thesis.* All departmental requirements must have been met.* |
| May 5 | Study day |
| May 6–11 | Final examinations |
| TBA | Commencement |

## Summer Session 2017

| | |
|---|---|
| April–June | Summer session registration |
| May 29 | Memorial Day holiday |
| May 22–June 2 | Pre-session (nine days) |
| June 5 | Classes begin, eight-week term and first four-week term |
| June 12 | Final date for filing Application for Degree in *my*WSU portal |
| July 3 | Classes begin, second four-week term |
| July 4 | Independence Day holiday |
| July 7 | Deadline for submission of Request to Schedule Oral Defense form* |
| July 21 | Deadline for oral defense to be held* |
| July 28 | Final date for all degree requirements, excluding current courses, to be met and reported to the Graduate School, including: oral defense results, comprehensive exam, incomplete grades, digital thesis.* All departmental requirements must have been met.* |
| July 28 | Summer session ends |

*These dates are subject to change.*

** Graduate School deadlines to ensure graduation that semester.*

NOTES

# Graduate School

### Offices: 107 Jardine Hall
### Dennis Livesay, *dean*

Kerry Wilks, *associate dean*
Denise Gimlin, *assistant to the dean*

The Graduate School at Wichita State University (WSU) supervises graduate study at the university, establishes standards for admission to graduate work and recommends students who have completed requirements for graduation.

The Graduate School provides opportunities to pursue advanced study in more than 40 master's programs, one educational specialist program, and 12 doctoral programs, three of which are professional practice degrees. Approximately 2,800 students—roughly one of every five WSU students—are graduate students. The university, classified by the Carnegie Foundation as a doctoral granting research university (high research activity), annually grants approximately 100 doctoral degrees and approximately 790 master's degrees. The Graduate School, an affiliate member of the National Association of Graduate and Professional Students, is a member of the Council of Graduate Schools and the Midwestern Association of Graduate Schools.

Academic programs include master's, specialist, doctoral and graduate certificate programs. Doctoral degrees are awarded in applied mathematics, chemistry, communication sciences and disorders, educational leadership, nursing practice, psychology, electrical engineering and computer science, aerospace engineering, industrial engineering and mechanical engineering. Two first professional degrees are also awarded: Doctor of Audiology and Doctor of Physical Therapy.

The primary goals of the Graduate School are to encourage independent scholarship and to develop competence in research or other creative activity. Students are expected to master special fields as well as to develop appropriate methods of inquiry for future professional growth.

The Graduate School operates according to bylaws approved by the graduate faculty. Current bylaws are available online at wichita.edu/gradschool.

## Graduate Study Defined

The graduate experience involves specialized knowledge and concentrated study in one area. In this respect it differs from undergraduate study, which introduces students to a wide range of subjects and develops general intellectual skills.

A graduate program is generally more focused on a specific area of interest and on accruing specialized skills to practice a profession or do advanced research. There are two types of graduate degrees: professional degrees and research degrees.

At the master's level, a professional degree provides a specific set of skills needed to practice a particular profession. It is generally a final degree. The research master's provides experience in research and scholarship, and it may be a final degree or a step toward a doctoral degree.

Terminal projects associated with the completion of the master's degree provide evidence of understanding the discipline-specific inquiry methods, thinking critically about a problem, and producing a written document or creative work appropriate to the standards of the discipline.

Wichita State University's master's degrees include a minimum of 30 graduate hours and usually take one or two years of full-time study to complete. Students have six years to complete their degree. The professional master's degrees often involve some type of internship or fieldwork. The research degree may involve writing a thesis or completing comprehensive exams.

The thesis is considered a scholarly contribution to knowledge evidencing research or creative capacity, independent thought, and the ability to interpret materials. In some cases it involves original research or development of original works such as a painting or a manuscript in creative writing.

The doctoral degree typically involves both coursework and a major research project. Students admitted to a doctoral program usually spend four to six years of full-time study completing their degree. Depending upon the field of study, the first two to three years involve classes, seminars, directed readings and directed research to provide a comprehensive knowledge of an academic field. During this time, students may also begin independent research projects.

Comprehensive knowledge in the field is assessed through the qualifying exam. On passing the qualifying exam, a student becomes a *candidate for the degree* and must be continuously enrolled every semester for a minimum of two credit hours of dissertation research.

As a candidate for a doctoral degree, a student works on a project that involves original research and reports on the research through the production of a dissertation. The dissertation is considered a substantial contribution to knowledge in which the student exhibits original scholarship and the ability to conduct independent research or creative works. Depending upon the field, the dissertation project may take one to two years to complete.

Students pursuing graduate certificates are scholars, who for academic, personal or professional reasons, desire graduate-level education without commitment to a graduate degree program, or who desire interdisciplinary coursework to complement a graduate degree program.

Graduate certificates are awarded by departments, colleges and the Graduate School to recognize graduate-level accomplishment in a cluster of related graduate courses on a topic, skill, theme or method, as defined by the appropriate faculty. The courses serve as the student's record of coherent academic accomplishment. Graduate certificate programs are not degrees, concentrations, minors or certification programs.

## Graduate Council

The Graduate Council consists of the dean and associate dean of the Graduate School, nine members of the graduate faculty elected by the graduate faculty, one member appointed by the graduate dean and one graduate student. The

council determines and recommends general policies for the Graduate School.

In addition to being the elected representative of the graduate faculty, the Graduate Council serves as the Committee on Exceptions in an advisory capacity to the dean of the Graduate School. This responsibility may be discharged by the council acting as a committee of the whole, through subcommittees, or ad hoc committees consisting of selected members of the graduate faculty and graduate student body. Conclusions reached by the Graduate Council are transmitted as recommendations to the dean of the Graduate School.

The Graduate Council also serves as a committee on appeals if the student is dissatisfied with direct administrative action taken by the graduate dean. In such cases, the judgment of the council is final.

## Doctoral Subcouncil

The Doctoral Program Subcouncil exists for the general advocacy of doctoral programs throughout the university community and to review, determine and recommend policies for doctoral programs. Membership consists of the graduate dean and associate dean, one representative from each doctoral program and one member elected from the Graduate Council.

# Graduate Faculty

The graduate faculty consists of the university president, the provost and vice president for academic affairs, the dean of the Graduate School, deans of the academic colleges, dean of the Honors College, dean of the libraries, and regular faculty members nominated and approved for graduate faculty status.

Members of the graduate faculty at Wichita State University, by virtue of their qualifications, contribute to graduate education by teaching and advising graduate students; by guiding master's theses and doctoral dissertations; by participating in examinations and evaluations; by engaging in a program of research, scholarship or creative activity; and by sharing in the administration of their programs and in the governance of the Graduate School.

At Wichita State University, regular faculty are not automatically members of the graduate faculty. Department faculty request membership on the graduate faculty by submitting an application with a current academic resume. Applications are reviewed and acted upon by the departmental committee, academic dean and the graduate dean. Nomination forms for initial appointment and renewal of appointment of Graduate Faculty status are available on the Graduate School web page (wichita.edu/gradschool).

There are four categories of graduate faculty status in Wichita State University. Candidates for graduate faculty status must meet all department specific criteria and the university specified eligibility criteria. A summary of university specified eligibility requirements, and duties and responsibilities for each category of graduate faculty status is provided below. A detailed description is provided in Section 5.12 of the Policies and Procedures Manual of the university (follow the link to WSU's Policies and Procedures Manual found at wichita.edu/policies).

***Graduate Faculty-1 (GF-1):*** Eligibility: tenured or tenure-track WSU faculty with assistant professor or higher rank who possesses the terminal degree in the discipline or its equivalent in training and/or experience (documentation is required when equivalency is claimed from a combination of training and experience). Duties and responsibilities: teaches graduate courses, serves on master's and doctoral committees, chairs master's thesis committees, cochairs specific doctoral dissertation committees with the approval of the Doctoral Subcouncil as long as the committee chair holds a Graduate Faculty-2 status, and mentors graduate students.

***Graduate Faculty-2 (GF-2).*** Eligibility: holds Graduate Faculty-1 (GF-1) status, demonstrates continuing scholarly/creative activity commensurate with being an established scholar in their discipline, and has demonstrated successful mentoring of graduate students, including supervision of completed thesis/dissertation, and service on thesis/dissertation committees. Duties and responsibilities: all duties and responsibilities of GF-1 and chairs doctoral dissertation committees.

***Graduate Faculty-3 (GF-3).*** Eligibility: (a) WSU faculty (who do not meet eligibility requirements for GF-1 or GF-2 status) or adjunct faculty, or (b) WSU emeritus faculty, or (c) qualified by education and/or professionally recognized for scholarly/creative achievement (for example, a nationally/internationally recognized scholar/creative artist), or (d) graduate faculty in another accredited institution of postsecondary education; and satisfies a departmental need. Duties and responsibilities: teaches graduate courses, serves on master's and doctoral committees, cochairs specific master's committees (with the approval of the graduate dean as long as the committee chair holds a GF-1 or GF-2 status) or doctoral committees (with the approval of the Doctoral Subcouncil as long as the committee chair holds a GF-2 status), and mentors graduate students. *Note*: limitation of duties based on qualification may be imposed by the graduate dean.

***Graduate Faculty-4 (GF-4).*** Eligibility: has earned a master's degree or more advanced degree, possesses academic/professional experience, and satisfies a departmental need. Duties and responsibilities: teaches courses for graduate credit up to a level supported by their academic credentials.

All nominations for graduate faculty status must originate from an academic department of Wichita State University. The interpretation of the eligibility criteria at the discipline level is the responsibility of the departmental graduate faculty. Departmental committees submit (for the graduate dean's approval) discipline-specific criteria for each category that clearly state what relevant activities warrant the granting of status, in terms of quality and quantity.

A complete listing of graduate faculty is available on the Graduate School web page and in the Graduate School office. Students are advised to consult this list when selecting faculty advisors for theses and dissertations.

# Faculty Restriction

Faculty members of WSU who hold the rank of assistant professor or higher cannot earn graduate degrees from Wichita State except for unassigned faculty (not attached to a particular college) or faculty members granted specific approval by the Graduate Council. Full-time faculty members may not pursue more than 6 hours of graduate credit per semester.

# Graduate Coordinators

The Graduate School works closely with individual program areas to ensure that program operations function in compliance with Graduate School policies and regulations. As part of this process, a graduate faculty member is recommended by his or her department chair to the graduate dean for appointment as the graduate coordinator, to serve as the program representative to the Graduate School in matters of graduate education.

Although the nature of graduate coordinator appointments and responsibilities varies throughout program areas, they have a primary role in working with students and faculty in their academic programs.

As a standard of expectation, graduate coordinators are charged with the responsibility for overseeing the evaluation of applications for admission and the transmittal of departmental recommendations for admission, academic performance, degree completion and exceptions to graduate school regulations.

Graduate coordinators also have a primary role in coordinating information between their programs and the Graduate School office, working with their departmental chairs or other administrators in maintaining the quality and viability of their graduate programs, and serving as the local agent for the graduate faculty in their program areas.

Graduate coordinators may also serve on graduate committees in their programs or academic colleges.

# Admission to Graduate Study

In order to receive graduate credit at Wichita State University, students must be admitted to the Graduate School. Two admission statuses, degree and nondegree, are available to accommodate qualified students desiring to pursue graduate degrees as well as those simply desiring to earn graduate credit for personal and professional reasons.

To be considered for degree or nondegree graduate status, students must submit a completed Application for Admission and appropriate credentials to:

Graduate School
Wichita State University
1845 Fairmount
Wichita, Kansas 67260-0004

Students are encouraged to apply online at: wichita.edu/apply.

Paper application forms may be requested by calling the Graduate School at (316) 978-3095, by email at: gradinqu@wichita.edu, or through the website listed above.

Admission is based primarily upon an applicant's previous academic record; therefore, two official transcripts of all previous academic work—including community college work, or work transferred to the degree-granting institution—must be received in addition to the application and application fee.

The fact that courses completed at one institution may be included on a transcript from another institution is not sufficient. Official transcripts may either be mailed directly to the Graduate School office from each institution, or the applicant may submit official issued to student transcripts. Please note that in order to be accepted, issued to student transcripts must be received in the Graduate School office in envelopes sealed by the issuing institution. *Faxed, scanned, or emailed transcripts cannot be accepted unless sent by the issuing institution through an approved electronic means.* Wichita State University transcripts do not need to be ordered, but academic work and degrees from WSU must be declared on the application form.

The review criteria of student credentials for both domestic and international applicants are equivalent; differing only to account for variations in how the academic work is recorded.

Credentials other than official transcripts will be considered only for application as a visiting guest student or nondegree, Category B student. Please refer to the Levels of Admission section regarding the details of these options.

## Admission Application

Applications for graduate study are made through the Wichita State University Graduate School regardless of the program. In addition to the Graduate School's application, certain program areas will also require a program application.

Records required for admission to programs without application deadlines, and from applicants not requiring visa status, should reach the Graduate School at least three weeks before registration for the semester in which admission is desired. Materials received after this date will be processed as the time of staff and faculty permits, but the Graduate School cannot guarantee that final action can be taken in time to allow enrollments for graduate credit.

Because of possible limitations in the number of faculty and available facilities, there are restrictions on the number of students admitted to some graduate programs. These limits may prevent some qualified students from being admitted. Since programs with enrollment limitations generally take action on new applicants in February or March for fall admission, early application is recommended. Preference is usually given to degree-seeking applicants.

All application materials in the folders (at the Graduate School and departmental levels) may be reviewed by the applicant upon request, except recommendation forms/letters where the applicant has waived his or her right to see the recommendations.

An admission to the Graduate School remains valid only if a student enrolls and completes at least one class as a graduate student within one calendar year of the admission semester. However, students admitted to the physician assistant or physical therapy programs must enroll the semester of admission in order for their admissions to remain valid. Students may apply to more than one program at a time, but may be admitted to only one program.

## Admission Application Fee

All applicants to the Wichita State University Graduate School must pay a nonrefundable application fee each time an application is submitted. The application fee is:

$65 for international students; and

$50 for U.S. citizens or lawful permanent residents (proof of green card will be required).

## Admission Deadlines

The following are deadlines for submission of complete application materials for all applicants seeking on-time registration, except those applying for admission to programs in aging studies, anthropology, audiology, biological sciences, business administration, chemistry, communication sciences and disorders, counseling, creative writing, educational leadership, executive MBA, history, liberal studies, nursing, physical therapy, physician assistant, psychology, public administration, social work, sociology and studio arts. Applicants to the program areas identified above should refer to departmental information in this catalog for admission deadlines.

***Application Deadlines:***

| | *International Students* | *Citizens or Permanent Residents* |
|---|---|---|
| Fall semester | April 1 | July 15 |
| Spring semester | August 1 | December 1 |

In cases where the departmental deadline is earlier than the Graduate School deadline, applicants must meet the department deadline. If the departmental deadline is later than the Graduate School deadline, the applicant must meet the Graduate School deadline.

## Admission Preparation

Applicants with bachelor's degrees in programs in which credit was awarded for experiences which were outside the control of a regionally accredited educational institution, for example, credit for life experience, may be viewed by some programs as inadequately prepared to undertake graduate study. In such instances, admission to the Graduate School may be denied or approved with prerequisite coursework assigned to fill the deficiencies.

# Admission Requirements

## Degree Admission

To pursue a graduate degree at WSU, students must be admitted to the specific program for which they are seeking a degree. Students may not be admitted to more than one degree program at a time.

***Specialist and Master's Programs.*** Applicants for full-standing degree admission to the specialist and master's programs must have:

1. Earned a bachelor's degree from a regionally accredited institution or a recognized institution in another country whose requirements for the bachelor's degree are substantially equivalent to a U.S. bachelor's degree. The basis on which credits are awarded for the bachelor's degree must be consistent with the policies and procedures for the award of such credit at Wichita State; and

2. Achieved a grade point average of at least 2.750 based upon the last 60 hours of coursework (or nearest semester or term break to this), including any postbachelor's graduate work, and no more than 9 hours of background deficiencies in the desired field of graduate study. Many departments require a higher minimum grade point average.

Although an entrance exam is not a requirement for admission to the Graduate School, certain program areas require either the Graduate Record Exam (GRE), the Graduate Management Admission Test (GMAT), or the Miller Analogies Test (MAT). Applicants should refer to the program and admission requirements table beginning

on page 4 to determine if a specific program requires an entrance exam.

See page 16 for entrance exam contact information.

***Doctoral Programs.*** Applicants for full-standing degree admission to the doctoral programs must meet the following requirements:

1. Hold a bachelor's degree from a regionally accredited institution or a recognized institution in another country whose requirements for the bachelor's degree are substantially equivalent to a U.S. bachelor's degree. The basis on which credits are awarded for the bachelor's degree must be consistent with the policies and procedures for the award of such credit at Wichita State.

2a. For programs where the minimum requirement for admission is the bachelor's degree, students must achieve a grade point average of at least 3.000 in the last 60 hours or nearest semester or term break to this, including any postbachelor's graduate work.

2b. For programs where the minimum requirement for admission is the master's degree, students must achieve a grade point average of at least a 3.250 in *all* graduate-level coursework.

3. A student may have no more than 9 hours of background deficiencies in the desired field of graduate study.

Although an entrance exam is not a requirement for admission to the Graduate School, certain program areas may require the Graduate Record Exam (GRE). Applicants should refer to the program and admission requirements table beginning on page 4 to determine if a specific program requires an entrance exam.

## Nondegree Admission

Persons who already possess a graduate degree, who do not want to seek an additional graduate degree at this time, or who wish to take graduate courses for professional advancement or personal satisfaction, should apply for nondegree admission. Students originally admitted to a nondegree category may later apply for degree admission. A maximum of 12 hours of graduate credit taken while in a nondegree category may be counted toward a degree program, provided students have obtained the approval of their major departments and the graduate dean, through submission of the plan of study.

***Nondegree, Category A.*** Admission to this category provides students the opportunity to take any level of graduate coursework for which they have the prerequisites. Nondegree applicants seeking graduate certificates must be admitted under this category. Upon satisfactory completion of a course, credit is placed on a Wichita State University graduate transcript. However, only credit earned in courses numbered 500 and above is counted as graduate-credit work.

Students applying for admission in this category must meet the following requirements:

1. A bachelor's degree from a regionally accredited institution; and

2. A grade point average of at least 2.750 based upon the last 60 hours of coursework (or nearest semester or term break to this), including any postbachelor's graduate work. Many programs require higher grade point averages and other admission credentials.

Students who do not meet the 2.750 grade point average requirement may be admitted to this category on probation if reasonable evidence exists to indicate their ability to perform satisfactorily in 800-level or above coursework.

Although there is no application deadline for nondegree, Category A admission, applicants are encouraged to provide the following items no later than three weeks prior to the start of the semester in which they wish to enroll:

1. A completed and signed application form;
2. Application fee; and
3. Two (2) official transcripts of all academic work including the bachelor's *or* a previous master's degree. WSU transcripts will be ordered by the Graduate School for applicants who have completed WSU coursework.

***Nondegree, Category B.*** This category is specifically for students who are not seeking a graduate degree but who want to continue personal and professional development beyond the bachelor's level through enrollment in certain graduate-level courses, including workshops. Students in this category are restricted to enrollment in courses numbered through 799 and for which they have the prerequisites. Credit earned in Category B status is placed on a Wichita State University graduate transcript; graduate credit is awarded for courses numbered 500 through 799.

Students applying for admission in this category must have earned a bachelor's degree from a regionally accredited institution. Many programs require a minimum grade point average.

Although there is no application deadline for nondegree, Category B admission, applicants are encouraged to provide a completed application packet no later than three weeks prior to the start of the semester in which they wish to enroll.

The completed application packet must contain the following:

1. A completed and signed application form;
2. Application fee; and
3. Two (2) official transcripts of a bachelor's degree from a regionally accredited institution or a copy of a teaching certificate.

***Graduate Certificate Programs.*** Graduate certificates are awarded to students who desire interdisciplinary coursework to complement their graduate degree program or who, for academic, personal or professional reasons, desire graduate-level education not leading to a graduate degree.

Students seeking graduate certificates must be admitted to the Graduate School in a degree program or in nondegree, Category A status. All Graduate School policies relative to the admission criteria mentioned previously apply.

Students completing the requirements for a graduate certificate program must submit the Graduate Plan of Study form and the Application for Degree form no later than the 20th day of the fall or spring semester or the 10th day of the eight-week summer term when certificate completion is anticipated.

The graduate plan of study is prepared in conjunction with the advisor of the graduate certificate program area and is forwarded to the dean of the Graduate School. Graduate departments offering graduate certificates should have a process for knowing who is completing certificate work. Certificate advisors are expected to inform students that a plan of study and certificate degree form are required according to the above deadlines.

Certificate programs are not eligible for Title IV (federal financial aid) funding unless a certificate is awarded as part of a degree program. Certificate programs which are not eligible for Title IV aid are not gainful employment programs.

***Graduate Badge Admission.*** Admission to this category provides students the opportunity to take badge coursework for which they have the prerequisites. Students in this category are not seeking a graduate degree, but want to continue professional development through skills acquired in the badge coursework. Students applying for admission in this category must meet the following requirements: (1) a bachelor's degree from a regionally accredited institution; and (2) a grade point average of at least 2.750 based upon the last 60 hours of coursework (or nearest semester or term break to this), including any postbachelor's graduate work. Although there is no application deadline for the graduate badge category, students are encouraged to provide the following items no later than 2–3 weeks prior to the start of the badge course in which they wish to enroll: (1) a completed and signed application form; (2) application fee; (3) an official transcript of all academic work including the bachelor's, *or* a previous master's degree. WSU transcripts will be ordered by the Graduate School staff for applicants who have completed WSU coursework.

*Important Note:* Depending on a program's structure, badge credit may not be used in the future for a degree or certificate program. If a badge student later applies for and is admitted to a degree seeking program that does allow badge coursework, all graduate rules with respect to coursework will apply to the badges (e.g. time limits; nonletter graded coursework limits).

***Graduate Guest Admission.*** Graduate students in good standing at another regionally accredited graduate school may be admitted as visiting guest students. Such admission is valid for only one semester. Admission requires the submission of a completed application and application fee, and a signed letter from the graduate dean or the dean's representative at the home institution certifying

the student's status as a graduate student in good standing. Visiting guests must have their school's permission to take up to one semester's work for transfer back to their home institutions. If enrollment is desired beyond one semester, students must obtain regular admission.

### English Proficiency

Proof of English proficiency may be required for U.S. citizens or permanent residents who are non-native English speakers. Please review the more detailed English Proficiency section on the following page for additional information.

## Levels of Admission

***Full Standing.*** Students who have fulfilled all of the admission requirements for a given program, including admission grade point average, entrance exams if required, reference and credentials if required, and have 9 hours or less of prerequisites, may be granted admission on a full-standing basis. Students admitted to full standing are eligible for consideration for assistantships and federally funded financial aid.

***Conditional Status.*** Students who may have background deficiencies in excess of 9 hours, but fewer than 16 hours, or who have not submitted required references, examinations and so forth, but who otherwise have met the full-standing degree program requirements, may be granted admission on a conditional basis. Students are allowed one semester to submit the remaining credentials, including test scores, and one year to remove background deficiencies. Transfer to an appropriate nondegree category will result if the necessary conditions are not satisfactorily met. Students admitted with conditions are not eligible for federally funded financial aid, but may be considered for graduate assistantship positions.

***Probationary Status.*** Students who do not meet the minimum academic requirements for full-standing degree program admission may be admitted on probation when reasonable evidence exists to indicate their ability to do satisfactory degree program work. In order to clear the probationary status, students must complete their first 9 hours of graded graduate-level coursework at Wichita State University with a minimum 3.000 grade point average. Only courses numbered 500 and above which are letter graded (*A, B, C, D, F*) can be used toward the 9-hour requirement. *S/U, Bg/NBg* and *Cr/NCr* courses will not count toward the 9-hour requirement.

Students who have a graduate history at WSU must also raise their graduate grade point average to a 3.000 or better to be removed from probation.

Students admitted on probation or placed on academic probation following admission are not eligible for assistantship awards or federally funded financial aid.

## Graduate Readmission Following Academic Dismissal

Following academic dismissal, students who wish to be considered for readmission to the Graduate School must first complete a minimum of 9 hours of 500 level or above letter-graded coursework, selected with appropriate advisement. These 9 hours cannot include repeats of courses for which graduate credit was previously earned. Such coursework must be completed with a grade point average of 3.000 or higher for the readmission application to be considered. Meeting this standard, along with both Graduate School and program-specific requirements, will permit consideration of readmission to a graduate program. Previously dismissed students who are recommended for readmission under this policy will re-enter on probation.

## Senior Rule Admission

Seniors at Wichita State or neighboring bachelor's-degree-granting institutions may qualify to take work for graduate credit under the senior rule option. This opportunity applies to students who have an overall grade point average of 3.000 or above in their major field and in upper-division courses and who are within 10 hours of completing the bachelor's degree. Work must go beyond the requirements for the bachelor's degree, and the degree must be completed within the semester in which a student takes the graduate courses.

Students who wish to earn graduate credit under the senior rule must apply to the Graduate School for regular graduate admission and also complete a senior rule application form. Both forms are due in the Graduate School no later than two weeks before the semester in which the student intends to enroll under the senior rule option.

Approval is needed from the student's major advisor, the chairperson or graduate coordinator in the program in which the work is to be taken, the undergraduate dean's office of the student's college (degree audit personnel), and the dean of the Graduate School before any courses can be taken for graduate credit. In addition, students from other institutions must be admitted as undergraduates (possibly as guest students) through the WSU undergraduate admissions office. Tuition for graduate courses will be assessed at the graduate rate.

## Admission to Dual/ Accelerated Bachelor's to Master's Degree Programs

The dual/accelerated bachelor's to master's degree programs offer outstanding students opportunities to advance their careers in significant ways by pursuing the bachelor's and master's degrees in a parallel and coordinated program. In addition, it may be possible for students to complete the requirements for both degrees (in the same field) in an accelerated time frame. The goal of this program is to provide students with a high level of academic advising culminating in the preparation of the graduate program of study while students are still in their sophomore or junior years. Graduate education involves a close working relationship between students and graduate faculty mentors, and the dual/accelerated degree programs develop this relationship early in students' careers. Dual/accelerated degree programs are available in:

- BA to MA in economics
- BS (in industrial or manufacturing engineering) to MS in industrial engineering
- BS to MS in mechanical engineering
- BSN to MSN in nursing
- BS to MS in mathematics
- BA to MA in English

Each dual/accelerated program has specific admission requirements. Students should consult with the department's graduate coordinator if they are interested in this type of program.

## WSU Former Graduate Students in Inactive Status

Students who have completed coursework at Wichita State University, but have not enrolled in the past 24 months, are placed in inactive status. To enroll again, inactive students must complete an online reactivation form available at: wichita.edu/registrar. This should be done at least one month before any planned enrollment.

Because of changes in program requirements, periods of nonenrollment may result in the need to reapply for admission to the program.

## Information for International Applicants

1. All Graduate School policies relative to the admission criteria mentioned previously apply. The formal admission of international students is a two-part process. The first part evaluates academic admissibility based upon the application form and transcripts or mark sheets provided. Applicants recommended for admission will be notified by the Graduate School of their eligibility for admission and the application will begin the second part of the admission process.

The second part requires the demonstration of sufficient English proficiency (TOEFL or IELTS) and financial resources (WSU Certification of Financial Support) to support graduate work in the United States.

2. The first semester of enrollment at WSU for all international graduate students must be in the program to which the student was admitted.

### Transcripts

Two (2) official copies of the undergraduate transcript translated into English are required. If the transcript does not indicate the award of a bachelor's degree or its U.S. equivalent degree,

official copies of the degree statement or diploma are required.

International applicants who have completed graduate work or have attended a U.S. university will need to have two (2) official transcripts showing that work sent directly from the institution, or may submit official *issued to student* transcripts. Please note that in order to be accepted, the transcripts must be received in the Graduate School office in envelopes sealed by the issuing institution.

Graduate programs (with the exception of social work, nursing and physician assistant) will evaluate international applicants based upon official transcripts or mark sheets through the equivalent of the first semester of the applicant's final year of study. In most instances, this will be the seventh semester of study. For international students on a yearly program, this will be the sixth semester.

In this instance, applicants who are recommended for admission and who have met all other admission requirements will be notified of admission and issued the I-20 form. Students admitted in this manner must provide the remaining transcript or mark sheet and the degree certification statement or diploma by the end of their first semester of enrollment as graduate students at WSU. Students who fail to meet this final requirement will be designated as *out of compliance* and will be reported to the university's Office of International Education.

## English Proficiency

Applicants whose native language is not English must submit official, acceptable scores for either the TOEFL, or the Academic Module of the IELTS examination. To be acceptable, the score must be sent to WSU directly from the testing agency, and must be less than two years old. Photocopies of score reports are unacceptable. The minimum acceptable scores for most programs are: TOEFL—79 on the Internet-based test, or 550 on the paper-based test. IELTS—minimum overall band score of 6.5 is required. Students completing the Intensive English program at WSU may establish English proficiency by achieving a cumulative GPA of 3.000 in Levels One through Six, and a grade of *B+* or higher in Level Seven. Some programs do have higher requirements for English proficiency. Please refer to the table below for specific information. Programs with higher requirements may still require students to achieve these scores even if they complete the IELC coursework as described above.

Waivers will be considered if the applicant has attended a college or university in the United States as a full-time student for a minimum of one year. Enrollment must have been in academic-only coursework (no English language training courses), and must have resulted in a GPA of 3.000 or higher. In order to be considered for a waiver, this coursework must have been completed within two years of the proposed semester of admission at WSU.

Waivers will also be considered if the bachelor's degree was awarded from a U.S. university within two years of the proposed semester of admission at WSU.

The following programs currently require a higher score than the minimum stated above. The listing below includes only the Internet-based TOEFL and IELTS scores. For paper-based equivalencies, please contact the Graduate School.

| | TOEFL | IELTS |
|---|---|---|
| Business Admin. | 88 | 7.0 |
| Communication | 100 | 7.5 |
| Creative Writing | 100 | 7.5 |
| English | 100 | 7.5 |
| History | 100 | 7.5 |
| Physical Therapy | 100 | 7.5 |
| Public Admin. | 88 | 7.0 |

Applicants interested in studying English at WSU prior to beginning their graduate studies should write to:

Intensive English Language Center
Wichita State University
1845 Fairmount
Wichita, Kansas 67260-0122
USA

Application forms may also be requested by email at: international@wichita.edu.

## WSU Certification of Financial Support

International applicants must demonstrate sufficient financial resources in order to support their graduate work in the United States. The WSU Certification of Financial Support must be filled out and signed, and submitted along with supporting documents such as bank statements, scholarship letters, or other evidence of support.

## International Transfer Students

International students transferring from universities in the United States must present the following items:

1. A completed and signed application for admission;

2. The nonrefundable international application fee;

3. Two (2) official transcripts from each college or university attended in the United States, plus two (2) official copies of the undergraduate transcript translated into English. If the transcript does not indicate the award of a bachelor's degree or its U.S. equivalent degree, official copies of the degree statement or diploma are required. Please see the last two paragraphs under the heading Transcripts, page 15;

4. Official, acceptable scores from either the TOEFL or IELTS. A waiver will be considered if the applicant has attended a U.S. university in the United States as a full-time student in academic courses for a minimum of one year, or the bachelor's degree was awarded from a U.S. university within two years of the proposed semester of admission at Wichita State University; and

5. A completed WSU Certification of Financial Support, and supporting documentation as described on the form.

## Mandatory Health Insurance

Wichita State University requires that all nonimmigrant international students have a specified minimum amount of medical insurance protection for every semester they are enrolled as students at Wichita State University.

Each nonimmigrant international student must obtain and maintain medical insurance from a company authorized to do business in the United States, with the following minimum coverages:

1. Basic injury and sickness benefits amounting to at least $10,000;

2. Major medical coverage in an amount of at least $100,000;

3. Coverage to provide for medical evacuation of the student to the student's home country; and

4. Coverage to provide for repatriation of the student's remains to the student's home country in the case of death.

Failure to obtain and maintain such coverage during the student's time of enrollment will be grounds for discipline up to and including expulsion.

## Exceptions to Regulations

Departures from the rules and regulations stated in the Graduate Catalog require the filing and approval of an Application for Exception to Graduate School Regulations form. Such requests must have the approvals indicated on the form and must state in a logical and coherent manner a rational basis for the requested exception. Forms for such requests are available from the Graduate School, from graduate program areas, and may be downloaded from the Graduate School website. Unusual and/or substantial deviations from stated rules and regulations may require action by the Graduate Council.

## Entrance Exam Contact Information

Many graduate degree programs have entrance examination and GPA requirements (see the table beginning on page 4).

Please contact the appropriate organization for further entrance exam information:

GRE—ETS
P.O. Box 6000
Princeton, NJ 08541-6000
USA
gre.org

GMAT
Pearson VUE
ATTN: GMAT Program
P.O. Box 581907
Minneapolis, MN 55458-1907
USA
MBA.com

Miller Analogies Test (MAT)
Pearson
Miller Analogies Test (MAT)
16885 Collections Center Dr.
Chicago, IL 60693
USA
milleranalogies.com

TOEFL
Test of English as a Foreign Language
Educational Testing Service
P.O. Box 6153
Princeton, NJ 08541-6153
USA
toefl.org

IELTS
International English Language Testing System
Please visit the IELTS website to determine which of the 350 testing centers in 120 countries is located nearest you: ielts.org

# Enrollment

## Load Definitions

At least 9 hours of graduate credit coursework is defined as full-time graduate enrollment during the fall or spring semester. During the summer session, a minimum of 6 hours is considered full-time graduate enrollment. Load (total credit hours) does not include audit enrollments. Students enrolling in all or a majority of courses that carry undergraduate credit must meet the undergraduate requirement for certification as full-time students (12 hours).

International students must enroll as full-time students (at least 9 hours of graduate credit coursework) each semester. Students placed on probation after admission are not allowed to enroll in more than 12 credit hours during semesters in which they are on probation.

Students holding assistantships should work with their advisors to arrive at a load appropriate to their situation.

Graduate students holding assistantships during a fall or spring semester are expected to enroll in at least 9 credit hours of graduate coursework, of which 6 hours must be at the graduate level. Approval to allow graduate assistants who hold a 20 hour appointment to be enrolled in 6–8 hours may be granted by the program in which the student is admitted. Special consideration for thesis, project, dissertation and research enrollments below 6 credit hours may be obtained by filing an exception with the Graduate School.

## Enrollment While on Probation

Students placed on probation after admission are not allowed to enroll in more than 12 credit hours during semesters in which they are on probation.

## Registration, Drops and Adds

The registrar establishes procedures for registration. Graduate students must enroll according to the procedures published online at wichita.edu/registrar. Students register through Web registration in the *my*WSU portal.

Prior to registering for classes, all students should contact their academic advisors to assure they are taking the appropriate classes. Early registration for one semester normally begins about midway through the preceding semester. ***Registration for a course or courses represents a financial commitment that the student is obligated to pay.***

Newly admitted, currently enrolled and former graduate students, not academically dismissed, are eligible for online registration. Some academic restrictions have been built into the system. Some restrictions cannot be overridden including non-degree, Category B students enrolling in courses beyond the 799 level. Program specific restrictions may be considered for removal by contacting the appropriate program and requesting an electronic override.

Registration and classes begin and end at varying times so it is important to consult the semester calendar for details. For more information, check the website at wichita.edu/schedule.

Once a student has enrolled, classes may be changed online for a certain period of time that varies according to the start date and length of the course. After the online period has passed, students must process in-person drop and/or add forms with the appropriate approvals. Changes of sections also require such action. If these forms are not submitted, a grade of *F* could be recorded for failure to attend the class shown on the original enrollment records.

Late enrollments or adds normally will not be approved after the 20th class day. Drops of classes with a grade of *W* (withdrawal) are subject to a time limit established by the registrar.

Cutoff deadlines for dropping with a refund also vary according to the start date and length of the course.

Students who find it necessary to completely withdraw from the university must drop each class.

## Basic Fees

*The tuition and fees listed are subject to change by the Kansas Board of Regents*.

Basic fees for on-campus regular enrollment and continuing education credit courses are listed here.

*Note*: Tuition and fees are for the fall and spring semesters and the summer session. **Tuition and fees for 2016–2017 had not been established at the time of publication, but an increase is anticipated.** Published fees reflect the 2015–2016 rates..

| | Resident | Nonresident |
|---|---|---|
| **Undergraduate tuition** | | |
| Per credit hour | $ 202.70 | $ 480.15 |
| **Graduate tuition** | | |
| Per credit hour | $ 273.70 | $ 672.20 |
| **Student fee**—graduate and undergraduate* | | |
| Per credit hour | $ 31.45 | $ 31.45 |
| **Intercollegiate Athletic Fee**—all students | | |
| Per credit hour | $ 10.02 | $ 10.02 |
| **Campus Infrastructure & Support Fee**—all students** | | |
| Per credit hour | $ 6.00 | $ 6.00 |
| **Technology Fee**—all students*** | | |
| Per credit hour | $ 0.50 | $ 0.50 |
| **Transportation Fee**—all students**** | | |
| Per credit hour | $ 0.25 | $ 0.25 |

*The student fee is required of every student enrolled on the Wichita State University main campus, and classes held in the City of Wichita, Wichita's contiguous industrial sites, WSU South and West, and the Downtown Center. Student fees support the student union, Heskett Center, student health services, Student Government Association, student publications, concerts, drama, opera productions and similar items.

** The Campus Infrastructure and Support Fee (formerly Facilities Use Fee) is assessed to all students at the rate of $6.00 per credit hour, per semester and summer session. This fee funds registration costs and OneStop which provides 24/7 support for students in the areas of admissions, financial aid, registration, advising and student accounts. All students, both on campus and online, have access to such services virtually or at OneStop.

***The Technology Fee is assessed to all students for technology upgrades and replacement.

****The Transportation Fee is assessed to all students to help offset the cost of the campus shuttle bus service.

## Workshops, Off-Campus Courses, Online Courses, CATIA Workshops and Media Courses

On-campus credit workshops cost $261.42 tuition and student fees, per credit hour. A specific course fee of $301.45 (undergraduate) or $372.45 (graduate) per credit hour is assessed for off-campus regular enrollment, continuing education credit courses, online courses or workshops.

Noncredit workshops on campus include a parking charge of $2.00 for a workshop of five consecutive days or less, or $10.00 for a longer term workshop. Noncredit workshops off campus are based on costs. Undergraduate and graduate badges are based on costs.

CATIA tuition for credit is $600 for a one-hour workshop, and $1,200 for a two-hour workshop. Noncredit CATIA workshops are $400 and $800 for one- and two-hour workshops, respectively. A $20.00 per credit hour fee is assessed for each media course.

## Student Parking Permits

Students desiring to park on campus will go to the WSU Marketplace site at wichita.edu/parkingpermit and purchase a hang tag/decal permit.

Car/SUV/Truck ..... $150/year
Spring semester ..... $75
Motorcycle ..... $60/year
Spring semester ..... $30

No cost to Fairmount Towers students to park in Fairmount Towers lot only.

## Auditing Course Fees

Tuition and fees per credit hour for courses and workshops audited are the same as for courses taken for credit.

## Payment

Tuition and fees, including any departmental or college fees, are required to be paid in full for any course in which a student is still enrolled after the deadline for dropping that course with a 100 percent refund.

An *installment payment plan* is available at the time of enrollment to assist students in making tuition payments. Any student who does not have financial aid from other sources sufficient to pay tuition and fees is eligible if the student has paid all previous obligations to the university. The installment plan requires a $130 nonrefundable down payment which includes a $30 administrative fee making the installment plan interest-free. Installment plans must be repaid in two or three equal installments according to the deadlines for a given semester.

## Assessment and Collection

The director of financial operations and business technology is responsible for the assessment and collection of fees.

### Board of Appeals—Residency Status

Two faculty members, a representative of the vice president for student affairs, a representative of the director of financial operations, and a representative of the general counsel's office constitute the board of appeals for students who believe their residency status has been incorrectly assessed. The decision of this committee is final. Forms to initiate this process are available in the registrar's office, 102 Jardine Hall. The form can also be downloaded online by going to wichita.edu/residency. A link to the form is located in the *Appeals* section of the page. See also, "Residency Defined" later this page.

### Late Fees

All accounts with a balance greater than $150 from tuition, enrollment related fees, or housing charges assessed in the current term will incur a $100 late fee on the first business day after the published payment due date. The payment due date for tuition and enrollment related fees will coincide with the financial aid office consensus date, the registrar's office late enrollment date, and the financial operations office 100 percent refund date. The payment due date for housing charges is stated in the housing contract.

All delinquent accounts with a balance due greater than $150 from tuition, enrollment related fees, or housing charges will incur a late payment fee of $100 ninety calendar days into the current term.

### Unpaid Fees

Students who leave Wichita State University without meeting their financial obligations to the university may have their records impounded by the registrar and their accounts may be sent to a collection agency. Their transcripts or diplomas will not be issued unless their accounts are cleared, and they may not enroll for a new term unless all fees are paid.

Students who are eligible to graduate but who still have unpaid tuition balances will not graduate until those fees are paid.

## Military Refund Policy

Students serving in the National Guard or Reserves who are called to active duty during an academic term are entitled to receive a full refund of tuition and fees. Students who are drafted and must report for active duty during an academic term are entitled to receive a full refund of tuition and fees. All refunds are subject to presentation of official documentation. Students who volunteer for military service will be subject to the university's nonmilitary refund policy. Room and board charges will be prorated to the extent that services have been provided.

## Tuition Waiver for Kansas Teachers of the Year

Kansas Teacher of the Year recipients are allowed to enroll tuition-free in up to 9 credit hours annually, provided they are actively pursuing a teaching career in Kansas. To be eligible, a person must be (1) a past or present recipient of the Kansas Teacher of the Year award under the program administered by the Kansas Department of Education, and (2) employed as a teacher in an educational institution accredited by the Kansas Department of Education. A list of persons eligible for this tuition waiver is on file in the Board of Education office.

## Student Fee Waivers

Student fees shall be waived for all Wichita State University benefits-eligible employees who are not carrying full-time class loads (undergraduate 12 hours; graduate 9 hours); adjunct faculty members and lecturers. These university employees must have an appointment for the semester in which the student fee is applicable.

Student fees shall be waived for currently enrolled students who are working in their cooperative education job or who are performing a required clinical rotation or internship off the WSU campus (defined as the City of Wichita, its contiguous industrial sites and the WSU South and West locations) for the entire semester.

Student employees and graduate assistants are not eligible for student fee waivers.

## Senior Citizen Enrollment

In accordance with Kansas Board of Regents policy, students who are at least 60 years of age may audit (no-credit) regular lecture or certain group activity courses—when there is space available and for which they meet the prerequisites—without payment of tuition and student fees, campus infrastructure and support fees, and technology and transportation fees. However, senior auditors must pay any applicable workshop fees and lab/special course fees.

*Prerequisites include admission to the graduate school for graduate courses, and program admission for courses in which program admission is required of all students.*

Senior citizens must present a Medicare card or driver's license to validate age. A special senior citizen registration is held after the first day of classes (see the schedule of courses, semester calendar at wichita.edu/registrar).

Senior citizens desiring college credit or the assurance of space in specific courses may enroll and pay full fees during regular registration.

Senior citizens who have not enrolled at WSU before must complete an application for admission and pay the application fee before registering at the undergraduate or graduate admissions office, $30 for undergraduate or $50 for graduate.

## Midwest Student Exchange Program (MSEP)

Residents of specified states who enroll in selected majors at WSU are eligible to pay just 150 percent of in-state tuition instead of paying out-of-state tuition rates. This is a tuition discounting program, not a scholarship.

In Kansas, all graduate students participating in the Midwest Student Exchange Program:

1. Must be fully admitted to the MSEP-eligible graduate program of choice (See admissions requirements online at wichita.edu/gradprograms.); and
2. Must enroll full time in an MSEP-eligible graduate major and make acceptable progress toward the degree (Note that graduate students who hold a teaching, research, or a staff graduate assistantship of 16 hours or more per week are not eligible for the MSEP tuition reduction.); and
3. Must be a resident of Illinois, Indiana, Michigan, Missouri, Minnesota, Nebraska, North Dakota or Wisconsin.

If a student satisfies these criteria, they will be sent an MSEP agreement. Fee bills will reflect MSEP tuition rates only after the agreement is signed and returned.

For additional information see wichita.edu/msep.

## Residency Defined

The residence of students, for tuition and fee purposes, is determined by acts of the Kansas legislature, rather than university policy.* The legislature has also granted the Kansas Board of Regents certain authority to adopt regulations and guidelines for the determination of residence, within the broader state law. The law and regulations are *different* than those that govern residency for any other purpose.

According to Kansas law and regulations, a resident, for tuition purposes, is someone who has resided (been physically present) in Kansas for 12 consecutive months prior to enrollment/re-enrollment and who has *demonstrated*, during those 12 months, the intent to make Kansas his or her permanent home. Intent is evaluated in light of: (1) the person's statement about why she or he came to Kansas in the first place, and (2) what the person has done since coming to Kansas (objective, verifiable facts). Many factors are

considered when evaluating intent. The Kansas Board of Regents' guidelines list nonconclusive factors or circumstances that could help support a claim for resident classification. The guidelines also specify a qualifier: "Any such factor, to be given weight, must be of at least one year's duration prior to enrollment/re-enrollment."

Residents of Kansas (for fee purposes) who leave the state retain their residency as long as they return to Kansas permanently within 60 months of departure.

A person who comes to Kansas to go to school, and who enrolls full time every semester after arriving, may not be able to demonstrate the intent to remain in Kansas permanently, as long as that pattern continues. In contrast, certain *exceptions* are authorized by state law to pay the equivalent of resident fees: (a) regular employees of the university and their spouses and dependent children (does not apply to student assistants and graduate assistants); (b) persons who are current military including members of the Kansas Air or Army National Guard, and their spouses and dependent children; (c) veterans who live in Kansas, were discharged within three years of enrollment, and are eligible for post-9/11 benefits, or the eligible spouse or dependent child using the veteran's benefits; (d) persons who graduated from a four-year program at an accredited Kansas high school within six months of their enrollment at a state university, and who were Kansas residents for fee purposes at, or within 12 months of, high school graduation; (e) dependent students as long as at least one parent is a Kansas resident for fee purposes; (f) persons who were recruited to, or transferred to Kansas within the last 12 months for a full-time job, and their spouses and dependent children; and (g) any person who is attending or has attended Haskell Indian Nations University and who is enrolled as an American Indian on a tribal membership roll maintained by the Bureau of Indian Affairs of the U.S. Dept. of the Interior.

*The details about each of these exceptions are critical and are not all stated here. Several require certification of appropriate information on a special form. None of them is automatic. Contact the registrar's office for more information.*

A person who is residing in Kansas and would not otherwise be considered a resident of Kansas *will* be considered to be a resident for tuition purposes *if* she or he has attended three years of high school in Kansas and graduated from an accredited Kansas high school or earned a Kansas GED *and* she or he is not on a student visa or eligible to pay resident rates in another state. This can apply to undocumented aliens and former Kansans who have not been back in Kansas long enough to re-establish residency. This law does not apply to an eligible person's spouse or dependents. People who have been admitted as nonresidents and think they are eligible to be considered residents because of this provision should contact the registrar's office. The three years of high school in Kansas (includes 9th grade), and Kansas high school graduation, must be documented. It doesn't matter when the person attended or graduated. Aliens with nonpermanent resident status must document that. Aliens must sign an affidavit indicating that they will apply for permanent residency as soon as they are eligible. All students must sign an affidavit indicating that they are not eligible to pay resident rates in any other state.

Students applying for residency should contact the Office of the Registrar, 102 Jardine Hall. There are many details about establishing Kansas residency for tuition purposes that will be explained upon further inquiry.

Residency of new students enrolling for the first time at Wichita State is determined by the appropriate (undergraduate, graduate or international) admissions office according to the above law/regulations. Such students should address questions concerning residency to the appropriate admissions office.

When a continuing student, who was initially classified as a nonresident, thinks he or she meets these residency requirements, then he or she must apply for residency using a form available from the registrar's office. Lower fees do not necessarily mean that someone has been classified as a resident—there are no nonresident fees, for example, for workshops or off-campus courses.

The responsibility of registering under proper residence is placed on the student. If there is any possible question of residence classification, it is the duty of a student when registering and paying fees to raise the question with the registrar's office. Students who disagree with their residency classification are entitled to an appeal, provided they file a written appeal with the registrar within 30 days from enrollment and pay the fees as originally assessed. A standard appeal form is provided by the registrar's office. If notice of the appeal is not given in writing within 30 days, the classification or reclassification by the registrar becomes final. Appeals are reviewed and decided by the university committee on residency, and its decision is final. The committee is not empowered to make exceptions, just to apply the law and regulations to individual circumstances.

Students must report their correct address at the time of registration each semester. The address given must be the student's actual place of residence, because it will be the one to which all correspondence from Wichita State is sent. Any change in residence must be reported within three days to the registrar's office. More complete information on the residence law and regulations can be obtained from the registrar's office.

* The information in this section is a summary of Kansas law. Kansas law and Kansas regulations are controlling in case of conflict..

# Special Fees and Refunds

## Drop/Add Fee Policy

Students who drop credits and do not add credits will be charged the proportional percentage based on the week they drop the credits.

Students who drop and add credits will not be required to pay additional tuition/fees if the following conditions are met:

1. The drop and add occurs in one transaction; and
2. There are an equal number of credit hours added as are being dropped, and the credit hours have an equivalent charge.

- A course that has been added in accordance with parts 1 and 2, and is subsequently dropped, will retain the same refund percentage as the original course dropped. Students who drop the added course that met the above conditions will have an adjustment made to their account. (Example: A student drops course A and adds course B. Course A would have had a 0 percent refund; however, because conditions have been met, student receives a 100 percent refund for course A. Student then decides to drop course B. An adjustment is made to the account reversing the 100 percent refund received for course A.)

Refunds of tuition and fees will be granted for withdrawals in accordance with the dates and regulations identified on the registrar's and the student accounts receivable's websites. Requests for refunds which occur after the close of the regular refund period must be submitted on the Refund Waiver form and presented to the Office of Financial Operations and Business Technology, 201 Jardine Hall.

## Refund Policy—Complete and Partial Withdrawal

Complete withdrawal from the university is accomplished when a student officially drops all classes in which they are enrolled.

Students are eligible for refunds as published online in the fee calendar each semester.

In short-term classes, students will have the first class period to determine if the class is suited for them. Students who register late or fail to attend the first class period in short-term classes will not be eligible for 100 percent refunds according to the policy.

The *first class day* refers to the first day of the part-of-term as defined by the department and registrar's office; thereafter, the *day* refers to the business day. The length of the *part-of-term* determines the refund, not the start and end date of the course. When a course's part-of-term length falls between two of the above categories, then the shorter one is used. (Example: If course A part-of-term begins Monday and the actual course meets on Thursday, the refund business day begins with Monday, not Thursday.

If a short-term class begins on Friday night, Saturday, or Sunday, students will have until the end of the first business day to drop the course. In order to receive a 100 percent refund for the class, the student must provide documentation that he or she did not attend more than four hours of the class.

No one other than the Office of Financial Operations and Business Technology in 201 Jardine Hall or the Tuition Refund Board of Appeals is authorized to determine the amount of tuition refund a student will receive.

Students who, because of extenuating circumstances, seek a higher refund than is available by policy, must petition the Tuition Refund Board of Appeals. Petition forms are available at the *my*WSU.edu *my*Finances tab, or the Office of Financial Operations and Business Technology, 201 Jardine Hall. The petition must be filed with the appropriate documentation. A petition for tuition refund beyond the policy must be filed at the Office of Financial Operations and Business Technology within the semester the course was taken.

Students who may have received approval from the university exceptions committee for a late withdrawal from a previous semester are not eligible by policy for a tuition refund. These are separate issues and decisions.

Federal regulations may require students attending the university for the first time and receiving student financial aid (grants, loans or work assistance) under Title IV, or whose parent(s) receive(s) a loan under Title IV on behalf of the students, who withdraw fully from the university to be subject to a different refund policy. Contact the Office of Financial Operations and Business Technology for details.

## Student Identification

Each student is identified in the university's computer system by a unique set of eight numbers and letters, called *my*WSU ID. This ID is assigned and communicated to students at the time of admission. A social security number is also required for everyone who has federal financial aid or is employed by the university, as they must also be identified in the system by their social security number.

All WSU students are required to have a WSU photo identification card called the Shocker Card. The card does not expire and is used to determine a student's current enrollment status. The initial card is free. Lost, stolen or discarded cards may be replaced for a fee.

The Shocker Card contains a unique 16 digit ISO number encoded on it and is the only means by which students can use the following services: Ablah Library, Heskett Center, athletic ticket office, student government, student health services, WSU police department.

## Transcripts

A transcript is a certified copy of a student's permanent academic record. It contains confidential information and cannot be furnished/released without the student's signed, specific request.

Transcripts may be ordered online at wichita.edu/registrar, in person at the registrar's office, or by submitting a request form via mail or fax. Request forms and more detailed information are available at wichita.edu/transcripts. A person's undergraduate and graduate transcripts may be ordered separately. Official transcripts are $10 per copy, paid in advance. Normal service is same business day if received by 2 p.m. Additional fees for ordering a transcript online, faxing a transcript, or for mailing it by other than first-class postal rates also apply. All transcripts sent to or provided to the student are stamped *Issued to Student*. Some institutions will not accept transcripts that are Issued to Student.

Transcript requests received in person or via mail/fax must be accompanied by a readable copy of government issued photo identification such as WSU ID, driver's license, passport or military ID. Requests will not be processed without this ID.

Mailed transcript requests should be sent to:
Attention: Transcripts
Office of the Registrar
Wichita State University
1845 Fairmount
Wichita, Kansas 67260-0058

***Reminder:*** No one, including spouse or parent, can request or pick up another person's transcript without written authorization and proof of identity from that person.

If a person still owes the university money, or has not returned borrowed university property, transcript services are withheld.

## Withdrawal—Administrative

Administrative withdrawal from courses may be initiated by the dean's office of the college or school in which a student is enrolled, the provost's office, or other appropriate university offices when a student is unable to complete courses because of extenuating circumstances. A grade of *W* will be officially recorded on the student's permanent record for a course or courses from which the student is administratively withdrawn.

## Exceptions to Regulations

Departures from the rules and regulations stated in the Graduate Catalog require the filing and approval of an Application for Exception to Graduate School Regulations form. Such requests must have the approvals indicated on the form and must state in a logical and coherent manner a rational basis for the requested exception. Forms for such requests are available from the Graduate School, from graduate program areas, and may be downloaded from the Graduate School website. Unusual and/or substantial deviations from stated rules and regulations may require action by the Graduate Council.

# Academics

## Graduate Advisors

Various patterns exist for advising graduate students. Some programs have a central plan for new graduate students, after which individual advisors are assigned. Other programs assign new graduate students to advisors early in their graduate program. Coursework taken without the advisor's expressed approval is not automatically applicable toward a graduate degree.

In all instances, advisors should be familiar with Graduate School rules and regulations as well as program and departmental requirements. While graduate students have the primary responsibility to know the rules and regulations and to fulfill the program requirements for their graduate degree, advisors' knowledge and expertise can assist students in their progress toward the degree.

An advisor assigned at the time of admission to a doctoral program will assist the student in completing initial tasks such as enrollment, coordination of examinations, submission of a plan of study, and the formation of a supervisory committee. Depending on individual program procedures, the advisor may chair an advisory committee which also will be involved in the advising activities above. It is possible for the advisor to be named as chairperson of the supervisory or dissertation committee.

Students with assigned advisors should consult their advisors for information on course prerequisites, content and similar matters.

## Graduate Courses, Numbering System

Courses carrying graduate credit are listed in the Graduate Catalog. Only courses numbered 500 and above can carry graduate credit and only for students admitted to the Graduate School at the time of enrollment.

Courses numbered under 500 carry undergraduate credit only and may be taken as supporting or prerequisite courses, but may not be counted toward a graduate degree and are not computed in a student's graduate grade point average.

Courses numbered 500 to 699 are aimed primarily at juniors and seniors, but graduate students may also receive graduate credit for these courses if the student was admitted to Graduate School prior to enrollment in the course. Some graduate programs do not allow courses numbered 500 through 699, which carry graduate credit, to meet degree requirements and students should be aware of such restrictions before enrolling. In such mixed classes, a discernibly higher level of performance is expected from graduate students, with the nature of this differential performance set by the professor.

Courses numbered 700 to 799 are structured primarily for graduate students, but upper-division undergraduate students may be admitted if they meet course prerequisites. All students in these courses are expected to perform at the level of graduate students (Graduate I students who ordinarily have not accumulated more than 30 hours in a graduate program). Students receive graduate credit if the student was admitted to the Graduate School prior to enrollment; undergraduate students receive undergraduate credit unless the student was preapproved to earn graduate credit for that specific course under the senior rule policy, or was preapproved for graduate credit for that specific course following the student's admission to a dual/accelerated bachelor's to master's program.

Courses numbered 700–899 are designed primarily for Graduate I students. Courses numbered 900–999 are designed primarily for Graduate II students (those who ordinarily have completed more than 30 hours in a graduate program).

Courses numbered 800 and above are restricted to graduate students only or undergraduate students approved for enrollment under the senior rule or dual/accelerated degree options.

In special cases, courses in areas where graduate degree programs are not currently available may carry graduate credit and apply toward a graduate degree in a related field or simply count as graduate credit for some nondegree purpose. Any of these courses applied toward an advanced degree program must have the approval of the student's advisor and the chairperson of the department involved in advance of enrollment.

## Complaint Procedures

The following statements are designed to provide guidance to graduate students in protesting an actual or supposed circumstance in which they feel they have been wronged.

Conflicts eligible for resolution under these procedures are restricted to academic matters other than grades. Disputes about grades are resolved through the Court of Student Academic Appeals.

These procedures do not include conflicts covered by other policies in the university. This may be initiated for circumstances which are within one year from the time of occurrence.

***Steps in the process:***

1. The student should first consult with the faculty member or administrator perceived to be causing the circumstance which has resulted in the feeling of being wronged and attempt to resolve the conflict at that level.
2. If the first step is not applicable or does not resolve the problem, the student should attempt to resolve the issue with the department chairperson, college dean, or through the use of department/program structures which may exist for this purpose
3. If the student has exhausted the remedies provided in steps one and two without success, the student should schedule a meeting with the dean of the Graduate School or the dean's designee (see *Role of the Graduate Dean* below). All requests must be in writing.

***Role of the Graduate Dean.*** The dean of the Graduate School or the dean's designee receives complaints or protests and decides whether to take direct administrative action to resolve the conflict or refer the complaint to the Graduate Council. A decision of the graduate dean may be appealed to the Graduate Council. If the student wishes to appeal the decision to the Graduate Council, he or she must notify the graduate dean in writing within 30 days of the decision. The graduate dean will then, in writing, provide the student the standard appeal processes that will be followed.

The decision of the dean of the Graduate School on recommendations received from the Graduate Council is final.

***Role of the Graduate Council.*** In addition to being the elected representative of the graduate faculty, the Graduate Council serves as the Committee on Exceptions in an advisory capacity to the dean of the Graduate School. This responsibility may be discharged by the council acting as a committee of the whole, through subcommittees, or ad hoc committees consisting of selected members of the graduate faculty and graduate student body. Conclusions reached by the Graduate Council will be transmitted as recommendations to the dean of the Graduate School.

The Graduate Council also serves as a committee on appeals if the student is dissatisfied with direct administrative action taken by the graduate dean. In such cases, the judgment of the council is final.

## Court of Student Academic Appeals

The faculty at Wichita State has established a procedure to resolve disputes arising out of the classroom through the Court of Student Academic Appeals. The court hears appeals from students who believe they have been treated unfairly in grading. The court is designed to help resolve differences that cannot be settled in the framework of the student-faculty relationship and offers an important safeguard for students.

The student must file an appeal within one semester after the grade is assigned (excluding summer). The court may waive the time limit if documented and verifiable exceptional circumstances cause a delay in submitting the appeal.

Any student may use the appeals procedure. Forms are available in the Office of the Provost and Vice President for Academic Affairs, Room 109 Morrison Hall. The general procedure is explained to students when they pick up the form.

Appeals for charges of plagiarism must be filed with the class instructor's dean. For more information see section 2.17 of the *WSU Policies and Procedures Manual* at wichita.edu/policiesprocedures.

## Credit Hour Defined

A *credit hour* is a measure of graduate or undergraduate academic work represented in intended learning outcomes and verified by evidence of student achievement that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for each week of instructional time for approximately 15 weeks for one semester, or an equivalent amount of work over a different amount of time. A class hour at Wichita State University is typically 50 minutes.

## Audit Credit

Students are permitted to attend credit courses on a noncredit basis, with appropriate approval, under an auditor classification. To be enrolled as auditors, students must enroll in the same manner and pay the same fees as for credit courses at the university. Auditors may participate fully in the class and expect instructor evaluation of their work. Auditors are expected to attend class regularly. The audited course will appear on the transcript with the grade notation of *Au*. A student's load (total credit hours) does not include audit enrollments. Courses taken on an audit basis may be repeated for credit, and if repeated may be used to fulfill degree requirements if the repeated grade is acceptable. Use of the audit basis for a course must be declared at the time of enrollment. Audited courses are *not* eligible for financial aid.

## Independent and Directed Study Courses

A primary goal of the Graduate School is to encourage independent scholarship. Thus, graduate students have many opportunities to engage in self-initiated independent study under the supervision of an individual member of the graduate faculty.

In addition to traditional titles, such as thesis, research project, internship and practicum, various departments use various titles to identify opportunities for individual study (e.g., independent study, special problems, directed readings, individual projects and directed study). The following requirements govern enrollment in independent study offerings:

1. Consent of the instructor must be obtained before enrollment;
2. The content of the study should not be the same as that covered in a regular course (exceptions to this requirement must have the approval of the graduate dean before enrollment);
3. Although scheduled on an arranged basis, there must be a sufficient number of contact hours between the student and supervising instructor during the duration of the independent study to ensure consistency with the amount of graduate credit earned in regular course offerings; and
4. No more than 6 hours of independent study coursework (excluding dissertation, thesis and other independent study activities that are terminal requirements for a degree) can be used in a degree program.

Some programs have additional program requirements that must be met before enrolling in independent study courses. Students should consult the appropriate program personnel before enrolling.

## Grading System

Wichita State grades include *A* (excellent), *B* (good), *C* (satisfactory), *D* (unsatisfactory), *F* (failure), *W* (withdrawal), *Cr* (credit), *NCr* (no credit), *Bg* (badge), *NBg* (no badge), *S* (satisfactory), *U* (unsatisfactory), *I* (incomplete), *IP* (in progress), *NGS* (no grade submitted), and *Au* (audit). Passing grades include *A, B, C, D, Cr, Bg* and *S*. The grades *F, NCr, NBg* and *U* indicate that the quality of work was such that, to obtain credit, the student must repeat regular coursework. A plus/minus grading system was adopted beginning fall 2009. It applies to grades of A, B, C and D.

***Credit Points.*** For each hour of work the student takes, credit points are assigned, as follows, to permit averaging of grades:

| | | | |
|---|---|---|---|
| *A* | = 4.000 | *C* | = 2.000 |
| *A-* | = 3.700 | *C-* | = 1.700 |
| *B+* | = 3.300 | *D+* | = 1.300 |
| *B* | = 3.000 | *D* | = 1.000 |
| *B-* | = 2.700 | *D-* | = 0.700 |
| *C+* | = 2.300 | *F* | = 0 |

***Related details:***

*B* or better grade required: *B-* will fulfill this requirement unless otherwise indicated.

*C* or better grade required: *C-* will fulfill this requirement unless otherwise indicated.

*I* Incomplete. Temporarily recorded as a grade when a student is granted an extension of time to complete coursework. Credit is postponed and the course is not included in the student's grade point average until it is completed and a regular letter grade is assigned. An incomplete grade should be assigned only when instructor and student have communicated and agreed upon the conditions and time frame for completing the work. See Change of Grades section for details.

## Repeats

A graduate student may enroll in graduate courses (for credit) a second or subsequent time and have it counted as part of the semester's load. If a course is repeated, the Graduate School will consider that the last grade earned replaces the original grade for purposes of admission and degree completion (in calculating initial and subsequent admission GPAs, in certifying the student's eligibility for graduation, in certifying completion of certificate programs, and in computing the WSU grade point average). Although the last grade earned becomes the grade of record (replaces original grade), the original course grade remains on the graduate transcript.

Repeated courses are identified on the transcript by an extra letter after the grade:

*I* included in GPA

*E* Excluded from GPA

Within existing departmental and university guidelines, WSU courses repeated at another institution may be used to complete program requirements, but the repeat grade will not be counted in the WSU grade point average (as transfer courses are not counted in the WSU grade point average).

## Grades

Coursework for graduate credit is normally graded *A, B, C, D, F, Bg/NBg* or *S/U*. Faculty also have the option of assigning an *I* (incomplete) if they feel that sufficient justification exists for the student's failure to complete the course.

An *IP* (in progress) grade is temporarily recorded when a course does not have to be completed by the end of the semester of enrollment. The grade submitted when the course has been completed replaces all *IP* grades for that course. This applies to courses such as Special Projects, Special Topics, Research and Thesis, as specified by the departments.

The graduate grade point average includes only those courses taken at WSU for which graduate credit is earned and for which a regular letter grade (*A, B, C, D or F*) is assigned. For repeated courses, only the last assigned grade is used to calculate the WSU graduate grade point average. WSU courses repeated at another institution may be used to fulfill program requirements; however, the repeated course transferred from another institution will not be counted in the WSU graduate grade point average, nor will it replace the grade received at WSU. Courses transferred from another institution and graduate credit courses graded *S* (satisfactory) or *Bg* (badge) do not affect the graduate grade point average.

To remain in good standing in a graduate degree program, students must maintain a grade point average of at least 3.000 in all courses on the student's graduate plan of study (excluding all transfer work) and for all graduate work taken at WSU. Grades lower than *C,* (generating less than 2.000 grade points), cannot be used to satisfy degree requirements, but such grades earned, beginning fall 2001, may be repeated.

## Satisfactory/Unsatisfactory Graded Courses

Certain approved courses that carry graduate credit are graded *S/U* (satisfactory/unsatisfactory) for all students enrolled. Such courses are identified in the online Schedule of Courses, or students enrolling in special offerings

for graduate credit will be informed of the *S/U* grading by the instructor if this system is to be used. Students wishing to transfer graduate coursework graded *S/U* to a degree program at another institution should, before enrolling, inquire of that institution's willingness to accept credit graded in this manner.

No more than 6 hours of work graded *S, Cr* or *Bg* (if approved through the plan of study) may be used toward the requirements of a graduate degree (excluding dissertation, thesis and other independent study activities that are terminal degree requirements). Refer to individual program areas as they may differ regarding this 6-hour limit.

## Final Grade Reports

At the end of each semester, students may access and print their final grades through the *myWSU* portal option on the university website: wichita.edu.

## Change of Grades

There are two situations when a change of grade can be approved at the graduate level, as described below.

***Incompletes.*** Students desiring credit for an incomplete grade assigned spring 1999 or later for regular courses (excluding research, dissertation, thesis and other terminal projects where an IP grade may be assigned) must complete their work within two semesters, excluding summer. If the work is not completed within those semesters and credit is desired, students must enroll in the course(s) as a repeat. If they enroll in the course again, the program assigning the original I will need to change the I to a W, and the grade earned during the repeat semester will become the grade of record. Faculty members may define other conditions for the removal of incomplete grades within the general framework indicated here.

Incompletes in graduate courses that are not cleared or repeated will remain on the transcript permanently as *I* (they will not revert to *F*).

***Changes of grade due to errors*** in calculation or reporting may be initiated by an instructor at any time during one calendar year following the assignment of the original grade. A grade change may be initiated by the chairperson of the department that offered the course if, and only if, the instructor is not in residence. The approval of the graduate dean is needed to have the change of grade entered on the student's transcript.

This change of grade policy may not be applied after graduation to courses taken prior to graduation.

## Probation

***Admission on Probation.*** Students admitted on probation will automatically be moved off probation upon completion of their first 9 hours of graded graduate-level coursework at Wichita State University with a minimum 3.000 grade point average. If the student already had a graduate record at WSU, then the student's graduate GPA must also reach 3.000 before being removed from probation. Only courses numbered 500 and above which are letter graded (*A, B, C, D, F*) can be used toward the 9-hour requirement. *S/U, Bg/NBg* or *Cr/NCr* courses will not count toward the 9-hour requirement.

***Academic Probation.*** Students admitted in good standing to a degree program, or nondegree Category A, will be placed on academic probation if their graduate grade point average falls below 3.000. Students are automatically removed from probation once they achieve a graduate grade point average of 3.000 or higher.

Students admitted on probation or placed on academic probation are not eligible for assistantship awards or federally funded financial aid during the semesters in which they are on probation. Students on probation are not allowed to enroll in more than 12 credit hours during semesters in which they are on probation.

## Dismissal

Students may be dismissed from their degree program or nondegree Category A status if they fail to attain a grade point average of at least 3.000 upon the completion of 9 graduate credits after admission on probation, or fail to raise their graduate grade point average to a 3.000 following placement on academic probation, or at any time their graduate GPA drops below a 2.000. Students in this situation may be dismissed from the Graduate School, or may be dismissed from their program and placed into a nondegree Category B status, upon the recommendation of the graduate coordinator of their program.

Students also may be dismissed from a graduate degree program if, in the opinion of the graduate faculty offering the program, they are unable to carry on advanced work or make satisfactory progress toward their degree. Students dismissed for this reason may be transferred to a nondegree category.

Following academic dismissal, students who wish to be considered for readmission to Graduate School must first complete a minimum of 9 hours of 500 level or above, letter-graded coursework, selected with appropriate advisement. These 9 hours cannot include a repeat of courses for which graduate credit was previously earned. Such coursework must be completed with a grade point average of 3.000 on a 4.000 scale or higher for the readmission application to be considered. Meeting this standard, along with both Graduate School and program-specific requirements, will permit consideration of readmission to a graduate program, but is not a guarantee of readmission. Previously dismissed students who are recommended for readmission under this policy will re-enter on probation. Please be aware that coursework completed as an undergraduate student cannot be used toward a graduate degree.

## Cooperative Education & Work-Based Learning Credit Courses

Cooperative education is an academic program for undergraduate and graduate students who wish to combine classroom studies with academically related employment by being placed locally and nationally in paid work experiences closely related to their academic majors.

Enrollment in cooperative education courses for graduate credit can be made only through those programs that have an approved graduate level course (numbered 700 and above) titled Cooperative Education. No other course titles such as independent study, special topics and so forth can be used for cooperative education enrollment. Co-op courses are graded *Cr/NCr*.

Graduate students in good academic standing desiring to participate in cooperative education classes should first consult with their program and the Graduate School. Some programs do not allow cooperative education credits to be used toward graduate degree completion.

The Career Development Center is located in Brennan Hall III, at the corner of 17th Street and Yale Avenue. The telephone number is (316) 978-3688.

## Training in Professional and Scholarly Integrity

Completion of a training program in professional and scholarly integrity is a graduation requirement for all doctoral students admitted into their program in fall 2012 or later and for all master's students admitted into their program in fall 2013 or later. The training, at a minimum, must cover these four topical areas:

1. Research misconduct;
2. Publication practices and responsible authorship;
3. Conflict of interest and commitment; and
4. Ethical issues in data acquisition, management, sharing and ownership.

Programs may add additional areas of needed training. Contact the program graduate coordinator or department chair for the training content detail and how the training can be received. The Graduate School expects that students will complete this training requirement by the end of their first year of graduate study at Wichita State, and preferably by the end of their first semester of enrollment.

## Transfer of Credit from Another University

Students may transfer, with departmental approval, graduate credit from an accredited graduate school under the following conditions:

1. (a) The credit-offering institution is accredited by the cognizant regional accrediting association to offer graduate degree programs appropriate to the level of credit to be transferred; (b) the

credit is fully acceptable at the issuing institution in satisfaction of its advanced degree requirement; (c) the credit must be approved by the student's advisor as applicable in terms of content to the student's program of study at WSU, and must carry a minimum grade value of 3.000 on a 4.000 point scale, with no course having a grade that generates fewer than 3.000 points on a 4.000 scale; (d) short courses must be at least three days in length/15 hours of instruction per credit; (e) taught by a faculty member of the institution, not a professional brought in to teach the course; (f) the course must be clearly marked as graduate level credit, with no other designation, such as: professional development, continuing education, etc.

2. Master's and specialist degree programs may include no more than one-third of the total hours or 12 hours whichever is greater, of graduate work completed at another regionally accredited graduate school. (No more than 6 hours of the transfer amount may be coursework from an earned master's degree.) Some programs may require lower limits on transfer credit and therefore students should consult individual program descriptions. Doctoral, Master of Fine Arts (MFA), and other more lengthy programs have special transfer credit allowances, as indicated in their program descriptions.

3. Doctoral programs may include a maximum of one-third of the coursework hours required, beyond what may be accepted from a previously earned master's degree.

4. Terminal activity hours specifically related to thesis and dissertation research may not be transferred from another institution. Some exceptions may apply for degree programs in which research hours constitute a larger portion of the program requirements. These instances and specific amounts must be approved by both the department and the Graduate School.

5. An official transcript containing the requested transfer work must be on file in the Graduate School. If such work is shown on the transcripts provided in support of the original admission to the Graduate School, no new record need be provided. Approval by the graduate degree program is necessary to ensure that the coursework has been accepted as an integral part of the candidate's program. Students assume responsibility for initiating the request for transfer of graduate credit as part of their degree plan.

6. Transfer credit that is accepted must have been in courses started six years or less before the semester in which the degree work is completed, unless the transfer work is from a previously earned graduate degree.

7. WSU courses repeated at another institution may be used to fulfill program requirements; however, the repeated course transferred from another institution will not be counted in the WSU grade point average.

8. Transfer hours cannot be used to satisfy the 60 percent course level requirements (see Credits Required, page 27, for details) unless transfer hours are of appropriate level, and from Kansas Board of Regents institutions.

Graduate credit work from another university is posted on the WSU transcript only after it has been approved for transfer through the approved plan of study, and once the official transcript, sent directly from the transfer institution, has been received and accepted. Only the specific courses approved for transfer are posted.

Official Wichita State University transcripts reflect only a total number of transfer hours accepted and the transfer institution's name. Additional detail, including course name and grade, appears only on the unofficial transcript.

## Workshop, Extension, Badge, Correspondence Credit and Credit by Exam

Workshop, badge and extension graduate credit courses may be accepted for graduate credit as a part of a graduate degree program under the following conditions:

1. The work is approved by the major department;

2. The work is approved by the dean of the Graduate School; and

3. The work is an integral part of a program planned by the candidate and the advisor, and listed on an approved plan of study.

Graduate credit cannot be earned under a credit by examination program, and correspondence courses cannot be accepted for graduate credit.

Students should be aware that some graduate programs do not allow co-op enrollment to be used to satisfy degree requirements. If the student wishes to use co-op hours towards degree completion, verification that the hours can be used to satisfy degree requirements should be made with the department before enrollment.

## Exceptions to Regulations

Departures from the rules and regulations stated in the Graduate Catalog require the filing and approval of an Application for Exception to Graduate School Regulations form. Such requests must have the approvals indicated on the form and must state in a logical and coherent manner a rational basis for the requested exception. Forms for such requests are available from the Graduate School and graduate program areas and may be downloaded from the Graduate School website. Unusual and/or substantial deviations from stated rules and regulations may require action by the Graduate Council.

# Degree and Certificate Completion

## Commencement

WSU holds commencement ceremonies each year, in December and in May. All baccalaureate and master's degree candidates for the spring semester are eligible to participate in the May ceremony and all baccalaureate and master's degree candidates for the fall semester are eligible to participate in the December ceremony. Baccalaureate and master's degree candidates for the summer semester are eligible to participate in either the preceding May or following December ceremony.

Doctoral degree candidates are eligible to participate in the commencement ceremony held in the semester during which they complete their degree requirements (May or December). Doctoral candidates who complete their program during the summer semester are eligible to participate in the following December or following May ceremony.

More information may be found at the commencement website: wichita.edu/commencement.

Diplomas are available for distribution approximately seven weeks following the close of a given semester. Degree recipients may obtain their diplomas from the registrar's office. Diplomas will be mailed from that office upon a written request that includes the name and student identification number of the degree recipient, the complete address where the diploma is to be mailed, the appropriate mailing fee ($6 inside USA; $40 outside USA), and a readable copy of the degree recipient's driver's license or other government issued photo ID.

## Graduate Committees

### Committee Structure

Committees for program completion exams are recommended by the major department and approved by the dean of the Graduate School.

In master's programs, final oral defense examinations are required of all students presenting theses or research projects. A thesis committee is composed of a minimum of three and a maximum of five graduate faculty, including the chairperson who must be a GF-1* or GF-2 graduate faculty member. Graduate faculty in GF-3 status may cochair a thesis committee upon approval of the graduate dean and as long as the committee chair holds GF-1 or GF-2 status. At least one committee member, the graduate dean's representative, must be from an academic department outside the major department. A majority of the committee members must be from the major department. No more than one committee member may have GF-3 graduate faculty status.

In doctoral programs, final oral defense examinations are required for all students presenting dissertations. The supervisory (dissertation) committee is composed of a minimum of five graduate faculty, with at least four having GF-1 or GF-2 membership, including the chairperson who must have GF-2 status. Graduate faculty holding the status of GF-1 or GF-3 may cochair a dissertation committee if the chair holds GF-2 status and is approved by the Doctoral Subcouncil. At least one committee member, the graduate dean's representative, must be from an academic department outside the major department. A majority of the committee members must be from the major department. No more than one committee member may have graduate faculty status as GF-3. In addition to guiding the student to successful completion of the dissertation, this committee conducts the final oral defense examination.

Once the supervisory committee has approved the dissertation proposal (via the proposal form submitted to the Graduate School), changes do not normally occur in the committee structure. If committee membership needs to be altered after proposal approval, the committee chair requests such a change via memo to the graduate dean indicating the membership change and the rationale for such a change.

In general, once a major advisor (thesis or dissertation committee chair) has been identified for the student (via plan of study or other document sent to the Graduate School), that advisor stays in place for the duration of the thesis or dissertation. Thesis and dissertation students considering a change in their major advisor should consult departmental guidelines for doing so. Doctoral students changing major advisors would likely need to submit a new proposal.

The oral defense of the thesis or dissertation is scheduled (via the Request to Schedule Oral Defense form submitted to the Graduate School) when the committee chair makes the determination that the student is ready to defend. The Request to Schedule Oral Defense form should be submitted to the Graduate School two weeks prior to the requested defense date. The defense must be held on or before the published deadline for the semester of graduation.

The defense examination is a public oral examination normally lasting about two hours, at which the candidate presents and defends the dissertation or thesis. The examination is chaired by the committee chair. All members of the examining committee (or substitutes appointed by the dean of the Graduate School) are expected to be present throughout the examination. One negative vote from a committee member (not the committee chair) on the examining committee (including substitutes) may occur, and the candidate would still be considered as having passed the examination. A failed oral defense may be retaken based on departmental guidelines. The thesis or dissertation manuscript must be delivered by the student to the committee members at least two weeks before the date of the oral defense.

*See "Graduate Faculty" on page 12 for definitions of graduate faculty status.

### Committee's Role

#### Responsibilities of the Thesis/ Dissertation Committee

Graduate faculty members are called upon to serve on student committees such as those constituted for master's theses, master's and doctoral oral examinations, and doctoral dissertations. The degree of committee involvement in the planning of the student's work varies from program to program. However, at the very least, committee members in oral examinations, thesis defenses and dissertation defenses are expected to have given a thorough and thoughtful reading to all materials. They will have prepared questions to test the student's knowledge, originality and independence of thought so that the faculty member will be able to ascertain the student's success in meeting standards expected for graduate level performance. Of course, graduate faculty members are expected to exercise independent critical judgment in evaluating students, to use fair and reasonable standards for the level of graduate work being evaluated and to refrain from introducing personal bias.

In general, the committee ensures that students are completing quality research specifically in terms of defining the research question, appropriateness of the research methods, and accuracy of the conclusions drawn from the research (via approval of the research proposal and approval of the student's readiness to defend the completed research). In addition, the committee ensures that the presentation of the document conforms to the writing standards expected for scholarly documents in the discipline (via final copy approval on the Recommendation for Degree form).

#### Responsibilities of the Committee Chair

Supervision (chairing) of graduate students' research takes many forms—guiding the development of research proposals, helping plan master's theses or doctoral dissertations, and determining students' readiness to take written and oral examinations. Although the traditions of different disciplines vary in the closeness of working relationships between graduate students and advisors during thesis, dissertation and exam preparation, advisors are expected to maintain active knowledge about students' plans, work and progress, to read drafts of written work, to give prompt feedback, and to help students shape their work until it meets the standard of quality expected in the field. These qualitative standards range from details of form to more general standards of originality and integrity. The degree to which the chair involves other committee members in the initial stages of the student's research varies

across the disciplines. However, at the very least, the research proposal should be approved by the entire committee, and the proposal should contain sufficient substance and detail to determine the quality of the research being proposed.

The committee chair is specifically charged with the following duties:

1. Informing the student of applicable Graduate School regulations;
2. Approving, in consultation with other committee members, the research proposal;
3. Approving, in consultation with the student, those who will serve on the committee;
4. Assisting the student in preparation of the thesis/dissertation document in a format consistent with that expected of a scholarly document in the discipline;
5. Determining, in consultation with other committee members, that the student is ready to defend the thesis or dissertation. Assuring that the student provides the manuscript to the committee members at least two weeks in advance of the oral examination date;
6. Filing the student's request to schedule the oral defense with the Graduate School. The defense examination is a public oral examination normally lasting about two hours, at which the candidate presents and defends the dissertation or thesis. It is generally the student's responsibility to contact committee members and determine a date and time for the oral defense;
7. Assisting the student in announcing the oral defense date and time to the university community;
8. Chairing the oral defense; and
9. Handling the completion of the form: Recommendation for Degree. This form allows committee members and the committee chair to sign off on two substantive items:

   a. Student's performance during the oral defense (pass/fail), and

   b. Readiness of the document (thesis or dissertation) for final copy. In this step, committee members ensure that changes in the thesis or dissertation document, requested during the oral exam, are included in the document by the student. Requested changes may pertain to:

   - Content issues, and/or
   - Formatting/grammatical corrections needed.

Committee members who also wish to see those changes in the document may request to review the document again before the final copy is produced.

In the case of terminal projects (versus theses and dissertations), departmental documentation should clarify the responsibilities of the project chair and committee.

### Responsibilities of the Outside Committee Member

Although the outside member's area of expertise may not directly pertain to the defense topic, his or her role is very important. As an outside member, the primary responsibility is one of oversight on behalf of the Graduate School assuring that the thesis or dissertation meets the standards of graduate scholarship, that committee members and the student abide by Graduate School regulations, and that the committee treats the student appropriately during the oral defense (e.g., asking questions only germane to the topic, treating the student professionally). Therefore the outside member evaluates the candidate's performance and casts a vote just as other committee members do. In addition, the outside member completes a formal evaluation of the oral defense process by completing an Oral Defense Evaluation form on which the following elements are evaluated:

1. The final exam was conducted in an orderly manner;
2. The oral examination process was fair and reasonable; and
3. The quality of the student's work was consistent with institution-wide expectations and standards.

The completed evaluation form is returned to the Graduate School within three weeks after the oral defense.

## Credits Required

All master's degrees require a minimum of 30 credit hours, with some programs requiring more. At least 60 percent of the total credit hours required by the degree must be 700 level and above.

The total credit hours required for a doctoral degree varies with the degree program. At least 60 percent of the doctoral credit hours, beyond the master's degree, must be 800 level and above. However, in doctoral programs that require only a bachelor's degree for admission, students must complete 60 percent of total hours at the 700 level or above, and the majority of total hours (50 percent plus one hour) must be 800 level or above.

Transfer hours cannot be used to satisfy the course level requirements stated above unless transfer hours are of appropriate level, and from Kansas Board of Regents institutions. Workshop hours may not be used to satisfy the course level requirements.

Specific program requirements are listed in the individual program's section of the Graduate Catalog. Transfer credit policies are outlined under the header "Transfer of Credit from Another University" on page 24.

**Credit Hour Defined, see page 23.**

## Concentrations in Graduate Programs

Concentrations, consisting of 9–12 credit hours, are offered within existing degree programs where the 9–12 credit hours constitute a coherent academic topic or theme. The concentration may include required and/or elective courses as long as the listing of elective courses (from which the concentration courses are selected) forms a coherent academic topic or theme.

The Graduate Council and the graduate dean must approve concentrations. Once approved, the program area may (1) use the word *concentration* in their publications and (2) may have the concentration identified on the student's transcripts and diplomas (for example, Master of Accountancy/Taxation).

The graduate plan of study, filed with the Graduate School, must specify the name of the concentration and the courses to be taken as concentration courses.

## Certificates in Graduate Programs

Students completing the requirements for a graduate certificate must submit the Graduate Plan of Study form and the Application for Graduate Certificate form no later than the 20th day of the fall or spring semester or the 10th day of the eight-week summer term when certificate completion is anticipated.

The graduate plan of study is prepared in conjunction with the advisor of the graduate certificate program area and is forwarded to the dean of the Graduate School. Transfer hours and substitutions are usually not acceptable for certificate programs. Graduate programs offering graduate certificates should have a process for knowing who is completing certificate work. Certificate advisors are expected to inform students that a plan of study, application for graduate certificate form, and $15 certificate filing fee are required according to the above guidelines. Students filing to earn their certificate who also file to earn their graduate degree the same semester need to file both the application for graduate certificate and the application for degree, and if they file both at the same time, need only pay one $15 filing fee. Students who file the forms separately pay the fee for each form.

If, after a student files an application for graduate certificate, the certificate is not completed, a new application for graduate certificate and filing fee must be filed within the time frame previously described for the semester in which the requirements for the certificate are again expected to be completed.

Certificate programs are not eligible for Title IV (federal financial aid) funding unless a certificate is awarded as part of a degree program. Certificate programs which are not eligible for Title IV aid are not gainful employment programs.

## Degree Application

An Application for Degree form (AFD) and $15 filing fee must be filed with the Graduate School within four weeks (20 class days) after the beginning of any fall or spring semester in which a student plans to finish all requirements for the degree.

Students planning to graduate at the end of the summer session must file an application for

degree form within two weeks (10 class days) after the beginning of the regular eight-week session even if they plan to enroll for the second four-week session only.

If, after a student files an AFD, the degree is not completed, a new AFD and filing fee must be filed within the time frame just described for the semester in which requirements for the degree are again expected to be completed.

Failure to meet these deadlines will result in a delay in graduation and in the awarding of the diploma.

## Examinations

Preliminary examinations are administered by several programs to determine students' qualifications for further graduate study. Qualifying and/or comprehensive examinations are required in all doctoral programs. The candidate passes if no more than one negative vote is cast in a five-member committee, and the negative vote does not come from the committee chair.

Most master's programs also require written or oral comprehensive examinations. The candidate passes if no more than one negative vote is cast in a three-member committee, and the negative vote does not come from the committee chair.

Candidates should refer to the appropriate program's section of the catalog or consult with the program for additional information about exams.

## Training in Professional and Scholarly Integrity

Completion of a training program in professional and scholarly integrity is a graduation requirement for all doctoral students admitted into their program in fall 2012 or later and for all master's students admitted into their program in fall 2013 or later. The training, at a minimum, must cover these four topical areas:

1. Research misconduct;
2. Publication practices and responsible authorship;
3. Conflict of interest and commitment; and
4. Ethical issues in data acquisition, management, sharing and ownership.

Programs may add additional areas of needed training. Contact the program graduate coordinator or department chair for the training content detail and how the training can be received. The Graduate School expects that students will complete this training requirement by the end of their first year of graduate study at Wichita State, and preferably within their first semester of enrollment.

## Plan of Study

In order to officially define a program of study for a graduate degree, students must submit the Graduate Plan of Study form leading to admission to candidacy. Submission of the proposed plan of study requires that the conditions of admission (if any) to the program area have been completed. The proposed plan identifying the completion option and proposed coursework should be submitted after the completion of 12 hours, or after one third of the program has been completed, whichever is greater. Some programs may have earlier deadlines for submitting the plan of study. Early submission of the plan is vital to successful degree completion.

Students must meet the program requirements in effect at the time the plan of study is officially approved by the Graduate School. It is recommended, therefore, that the plan of study be submitted as soon as possible for master's students and by the end of the semester of completion of qualifying examinations for doctoral students.

The plan of study is developed in conjunction with the advisor and signed by the candidate, the advisor (and advisory committee members, if applicable), the chairperson of the major department, and the dean of the Graduate School. All academic work completed and planned for the degree must be included in the plan of study at the time of submission.

The process of filing an acceptable plan of study is not completed until the student has received a copy of their detail requirements from the Graduate School. If the detail requirements sheet has not been received approximately three weeks following submission of the proposed plan, students should check with the Graduate School office.

Excess hours beyond the program requirements are not permitted on a graduate plan of study. A variation of one or two hours can occur due to slight variations in course offerings, but a graduate plan of study may not exceed the program requirements by any significant amount.

Students may make changes to the plan of study that are necessary because of enrollment problems or other circumstances by submitting the plan of study form and showing only the necessary revisions. More extensive changes may be accomplished by filing a new plan of study marked *revised plan*.

Failure to meet the deadline for filing an acceptable plan of study may result in a delay in graduation or loss of credit planned for use in the program.

Students may not include a graduate level course on their plan of study that has been previously taken as an undergraduate level enrollment.

## Progress

Degree-seeking graduate students and students completing graduate certificate programs are expected to make satisfactory progress toward their degree or certificate in a timely manner (six-year time limit for master's and specialist degrees; six to nine years for doctoral degrees). Some departments take action to dismiss students who absent themselves for periods of a year or more.

Demonstrated suitability for professional practice, as determined by faculty, is also a consideration for remaining in good standing in graduate programs leading to advanced certificates or other endorsements indicating advanced professional practice or achievement.

Students who complete graduate degrees at Wichita State University are transferred to non-degree, Category A, status in the academic field of their graduate degree which allows continued enrollment for graduate credit at WSU. Should such students desire to undertake a new academic program or change advising areas, a new application for admission to the desired area of study and application fee must be filed with the Graduate School office.

## Residency Requirement

Doctoral students are required to spend at least two continuous semesters (summer excluded) as full-time students.

## Time Limits

Students have six years in which to complete a master's degree program starting from the first semester the student begins the coursework that is designated in the plan of study.

For doctoral programs requiring a master's degree for admission, the doctorate must be completed within six years from the effective semester of admission. In those programs permitting admission directly after the bachelor's degree, the doctorate must be completed within nine years from the effective semester of admission. Time limits are not imposed on transfer courses from a previously awarded graduate degree.

In cases where the above time limits are exceeded and in which the student desires to have a course count toward degree completion, the outdated course must be validated or substituted with a course within the time limits, or an Application for Exception to Graduate Regulations must be filed and approved to waive the time limits for the course in question. To have courses validated, students seek approval from their department, and must submit a Course Validation Request form to the Graduate School for validation approval. The instructor must identify on the form the process that will be used to certify that the student has achieved a grade value of 3.000 on a 4.000 point scale. Grades lower than a *B* (generating less than 3.000 grade points), will not be accepted.

Transfer courses and work that originally received a grade lower than a *B,* (generating less than 3.000 grade points), cannot be validated. Courses completed 10 or more years before the degree is granted, even if previously validated, may not be used to meet degree requirements.

## Thesis or Research Credit

When a thesis is part of a student's master's degree program, and for all doctoral students, thesis or dissertation or research project credit must show on their graduate transcript. The transcript will normally carry the grade of *IP* (in progress) until the thesis or

dissertation is completed and the student has met the requirements of the supervisory committee and the Graduate School. An *S* (satisfactory) or grade of *B* or better is required for an acceptable thesis/dissertation. Thesis or dissertation hours in excess of the minimum required for the degree will be graded *S*.

Students writing a thesis or dissertation or engaged in research must be enrolled in courses entitled Thesis, Dissertation or Research each semester in which they receive advice, counseling or research direction from their advisors. This includes the semester of graduation. Enrollment is for the number of hours that accurately reflects the demands of the student on university faculty and facilities. The minimum enrollment for doctoral students is 2 credit hours of the terminal activity.

Students engaged in terminal activities other than thesis, dissertation or research (e.g., internship, practicum, portfolio, directed project) must be enrolled in courses carrying these titles each semester in which they receive advice, counseling or direction from their advisors. This includes the semester of graduation. Such hours in excess of the minimum required for the degree will be graded *S*.

## Thesis/Dissertation Preparation

Since fall 2006, all students have been required to submit their theses or dissertations through an electronic process called ETD (Electronic Theses and Dissertations). The thesis/dissertation is converted to a Portable Document Format (PDF) file for electronic submission to the Graduate School. No bound copies will be required from the student. Prior to ETD submission, all students will be required to make an appointment with the degree audit specialist in the Graduate School for a format check of the paper copy. The PDF will be uploaded to the Blackboard Learning System using the digital drop box once approval has been given by the Graduate School. A copy will be saved on a CD by the Graduate School and given to the student, the chair of the committee, and the student's major department. The final copy of the ETD will be sent to the university library. The student's ETD will contribute to worldwide graduate education as we build a Networked Digital Library of Theses and Dissertations (NDLTD) in collaboration with other scholarly institutions.

For additional information about the preparation of the thesis or dissertation, the student is referred to the Graduate School publication, *Guide to the Preparation of Theses and Dissertations*, which is available online at wichita.edu/gradforms.

## Tool or Language Requirements

The Graduate School has no overall tool or language requirements, although such requirements have been established by some programs. Students should consult an individual program's section of the Graduate Catalog for information regarding such requirements.

Any tool subjects (e.g., foreign language, computer programming, statistics) required by the major program must be identified in the student's plan of study. The completion of this tool is not required prior to submission of the plan of study but is required prior to graduation.

## Transfer of Credit from Another University

Students may transfer, with departmental approval, graduate credit from an accredited graduate school under the following conditions:

1. (a) The credit-offering institution is accredited by the cognizant regional accrediting association to offer graduate degree programs appropriate to the level of credit to be transferred; (b) the credit is fully acceptable at the issuing institution in satisfaction of its advanced degree requirement; (c) the credit must be approved by the student's advisor as applicable in terms of content to the student's program of study at WSU, and must carry a minimum grade value of 3.000 on a 4.000 point scale, with no course having a grade that generates fewer than 3.000 points on a 4.000 scale; (d) short courses must be at least three days in length/15 hours of instruction per credit; (e) taught by a faculty member of the institution, not a professional brought in to teach the course; (f) the course must be clearly marked as graduate level credit, with no other designation, such as: professional development, continuing education, etc.

2. Master's and specialist degree programs may include no more than one-third of the total hours or 12 hours whichever is greater, of graduate work completed at another regionally accredited graduate school. (No more than 6 hours of the transfer amount may be coursework from an earned master's degree.) Some programs may require lower limits on transfer credit and therefore students should consult individual program descriptions. Doctoral, Master of Fine Arts (MFA), and other more lengthy programs have special transfer credit allowances, as indicated in their program descriptions.

3. Doctoral programs may include a maximum of one-third of the coursework hours required, beyond what may be accepted from a previously earned master's degree.

4. Terminal activity hours specifically related to thesis and dissertation research may not be transferred from another institution. Some exceptions may apply for degree programs in which research hours constitute a larger portion of the program requirements. These instances and specific amounts must be approved by both the department and the Graduate School.

5. An official transcript containing the requested transfer work must be on file in the Graduate School. If such work is shown on the transcripts provided in support of the original admission to the Graduate School, no new record need be provided. Approval by the graduate degree program is necessary to ensure that the coursework has been accepted as an integral part of the candidate's program. Students assume responsibility for initiating the request for transfer of graduate credit as part of their degree plan.

6. Transfer credit that is accepted must have been in courses started six years or less before the semester in which the degree work is completed, unless the transfer work is from a previously earned graduate degree.

7. WSU courses repeated at another institution may be used to fulfill program requirements; however, the repeated course transferred from another institution will not be counted in the WSU grade point average.

8. Transfer hours cannot be used to satisfy the 60 percent course level requirements (see Credits Required, page 27, for details) unless transfer hours are of appropriate level, and from Kansas Board of Regents institutions.

Graduate credit work from another university is posted on the WSU transcript only after it has been approved for transfer through the approved plan of study, and once the official transcript, sent directly from the transfer institution, has been received and accepted. Only the specific courses approved for transfer are posted.

Official Wichita State University transcripts reflect only a total number of transfer hours accepted and the transfer institution's name. Additional detail, including course name and grade, appears only on the unofficial transcript.

## Degree Program Regulations

1. To pursue a graduate degree at Wichita State, students must be admitted to the specific program for which they are seeking a degree. Students may not be admitted to more than one graduate program at a time.

2. To remain in good standing in a graduate degree program, students must maintain a grade point average of at least 3.000 in all courses on the student's WSU plan of study (excluding transfer work) and for all graduate work taken at WSU. Grades lower than *C*, including *C*-, cannot be used to satisfy degree requirements, but such grades earned may be repeated.

3. Any course taken as a part of an undergraduate degree may not be repeated for graduate credit except when the course contents are substantially different (as indicated by instructors).

4. All master's degrees require a minimum of 30 credit hours, with some programs requiring more. At least 60 percent of the total credit hours required by the degree must be 700 level and above.

The total credit hours required for a doctoral degree varies with the degree program. At least 60 percent of the doctoral credit hours, beyond the master's degree, must be 800 level and above. However, in doctoral programs that require only a bachelor's degree for admission, students must

complete 60 percent of total hours at the 700 level or above, and the majority of total hours (50 percent plus one hour) must be 800 level or above.

Transfer hours cannot be used to satisfy the course level requirements stated above unless transfer hours are of appropriate level, and from Kansas Board of Regents institutions. Workshop hours may not be used to satisfy the course level requirements.

Specific program requirements are listed in the individual program's section of the Graduate Catalog. Transfer credit policies are listed in the appropriate section of the Graduate Catalog.

5. Upon the advice and consent of the major department, a maximum of 6 credit hours of work in one earned master's degree program may be applied to a second master's degree.

6. No more than 6 hours of independent study coursework (excluding dissertation, thesis and other independent study activities that are terminal requirements for a degree) can be used in a degree program.

7. No more than 6 hours of work graded *S, Cr* or *Bg* (when on an approved plan of study) may be used toward the requirements of a graduate degree (excluding dissertation, thesis and other independent study activities that are terminal requirements for a degree). Refer to individual program areas as they may differ regarding this 6-hour limit.

8. Master's and specialist degree programs may include no more than one-third of the total hours or 12 hours whichever is greater of graduate work completed at another institution accredited to offer graduate degree programs (exclusive of hours in a previous master's degree). Departments may require lower limits on transfer credit and, therefore, students should consult individual program descriptions. Doctoral, Master of Fine Arts (MFA) and other more lengthy programs have special transfer credit allowances, as indicated in their program descriptions.

9. Transfer credit that is accepted must have been in courses started six years or less before the semester in which the degree work is completed, unless the transfer work is from a previously earned graduate degree.

10. ***Enrollment in Final Semester***. Graduate students must be enrolled in appropriate graduate-level coursework during the semester of graduation. Such enrollment recognizes the use of university resources, including faculty and staff, as part of degree completion. The minimum enrollment for thesis students is 1 hour of thesis. The minimum enrollment for doctoral students is 2 hours of dissertation.

11. Doctoral students are required to spend at least two continuous semesters (summer excluded) as full-time students.

12. Faculty members of Wichita State University who hold the rank of assistant professor or higher cannot earn graduate degrees from Wichita State except for unassigned faculty (not attached to a particular college) or faculty members granted specific approval by the Graduate Council. Full-time faculty members may not pursue more than 6 hours of graduate credit per semester.

13. Doctoral students admitted fall 2012 or later and master's students admitted fall 2013 or later are required to complete professional and scholarly integrity training as determined by their department. This training should be completed within the first year of enrollment in the program.

## Exceptions to Regulations

Departures from the rules and regulations stated in the Graduate Catalog require the filing and approval of an Application for Exception to Graduate School Regulations form. Such requests must have the approvals indicated on the form and must state in a logical and coherent manner a rational basis for the requested exception. Forms for such requests are available from the Graduate School, from graduate program areas, and may be downloaded from the Graduate School website. Unusual and/or substantial deviations from stated rules and regulations may require action by the Graduate Council.

# Financial Opportunities

Students wishing to be considered for assistantships, fellowships, scholarships or other forms of financial awards should indicate their interest to their graduate coordinator or program chair as soon as possible after notification of admission.

Students admitted on probation or placed on academic probation following admission are not eligible for assistantship, fellowship awards or federally funded financial aid.

## Assistantships

Each year Wichita State University awards a number of assistantships for advanced study. Grants are made in most departments offering advanced degrees. Assistantships are awarded primarily on the basis of a student's academic record and demonstrated teaching, research and leadership abilities, together with any other available supporting evidence.

Students must be admitted to a degree program in either full-standing or conditional status. Students admitted on probation or placed on academic probation following admission are not eligible for assistantship awards. Undergraduate students admitted under the senior rule option, or in accelerated bachelor's to master's programs are not normally considered for assistantship awards.

Recipients of a full-time graduate assistantship may not hold appointments totaling more than 20 hours per week and may not hold other WSU remunerative employment without the written approval of the department chairperson and dean of the Graduate School.

A ***graduate teaching assistantship*** may qualify the recipient for up to a 100 percent waiver of tuition. Graduate students must provide service from the 20th day of the semester through the remainder of the semester to be eligible for the nonresident to resident tuition waiver. Only courses numbered 500 and above are eligible for full or partial waiver of tuition for graduate teaching assistants. Potential applicants for graduate teaching assistantships who are non-native speakers of English must first attain a score of 23 or above on the speaking portion of the Internet Based TOEFL (IBT), or a score of 50 or above on the SPEAK, or a score of 7.0 or higher on the speaking portion of the IELTS exam. All students who are offered a graduate teaching assistantship, whether native or non-native speakers of English, must have their spoken English evaluated by a departmental assessment committee. The committee is appointed by the department chair or director, and is composed of at least three members: two faculty members and one student. The committee judges the graduate assistant's spoken English according to the Spoken English Screening Form (SESF) scale of 1-4. A rating of 1 or 2 indicates competency in spoken English and is required for appointing the candidate. For non-native speakers of English, this is required in addition to the TOEFL/SPEAK mentioned previously.

The department chairperson or graduate coordinator should be contacted for further information. The actual dollar amount of an assistantship varies according to the length of the appointment, the number of hours worked per week and the funding base within each department. At Wichita State University, assistantships for 20 hours of work per week for a nine-month period range from $5,800 to $24,000. This average is provided for information purposes. Assistantship appointments are made on a semester basis.

Graduate students holding assistantships during a fall or spring semester are expected to enroll in at least 9 credit hours of coursework, of which 6 hours must be at the graduate level. Exceptions to allow graduate assistants who hold a 20-hour appointment to be enrolled in 6–8 hours may be approved by the program where the student holds admission. Special consideration for thesis and research enrollments may be obtained by petitioning the Graduate School through the exceptions process.

As a part of the hiring process at WSU, all graduate assistants are required to submit to a criminal background check before employment commences.

## Fellowships

Fellowships are awarded to a limited number of graduate students in good academic standing who are admitted to a program of study leading to a doctoral degree and to certain programs at the master's level. Awards are made primarily on the basis of the academic achievement and potential of the student as a degree candidate. Credentials including transcripts of all previous academic work, scores on national or local exams, experience related to the field of study, and evaluations by former teachers, advisors or employers are used in determining the awards. Selections are made on a competitive basis without regard to race, creed, sex or national origin and are generally announced in mid-May for the following fall. Award amounts are determined by the individual program area.

Students desiring a listing of programs offering graduate assistantships, fellowships and scholarships are referred to the graduate school website or the program area of their interest.

## Graduate School Awards

The Graduate School oversees and distributes general awards and certain fellowship activities as described below. Additional information can be found on the Graduate School website: wichita.edu/gradschoolawards.

## Annual Awards:

### Dr. Laiten L. & Verna Nye Camien Fellowship

The Dr. Laiten L. and Verna Nye Camien Fellowship is awarded to a fully-admitted graduate student in good academic standing in a graduate degree program in social sciences, foreign language or education. Please contact the Graduate School or visit the Graduate School website for application deadlines and details.

### E.L. Cord Foundation Graduate Fellowship

The E.L. Cord Foundation Graduate Fellowship is awarded to a fully-admitted graduate student in good academic standing, with demonstrated financial need. Please contact the Graduate School or visit the Graduate School website for application deadlines and details.

### Donald D. Sbarra Endowed Fellowship

The Donald D. Sbarra Endowed Fellowship is awarded to a degree-seeking graduate student, in good academic standing, with demonstrated financial need. Applicants for this award must be enrolled full time in a graduate degree program, be in good academic standing, with a graduate GPA of at least 3.200, and must demonstrate financial need. Please contact the Graduate School or visit the Graduate School website for application deadlines and details.

### Lawrence & Pauline Stettheimer Endowed Fellowship

The Lawrence & Pauline Stettheimer Endowed Fellowship is awarded annually to a fully-admitted graduate student in good academic standing who exhibits exceptional ability and potential. Applicants for this award must have completed at least 9 graduate credit hours, and be enrolled full time in a graduate degree program. Please contact the Graduate School or visit the Graduate School website for application deadlines and details.

### Michael P. Tilford Graduate Fellowship

The Michael P. Tilford Graduate Fellowship, established in memory of former WSU Graduate School Dean Michael P. Tilford, is awarded to a currently enrolled full-time graduate student in good academic standing in any graduate degree program. Preference is for a minority student who is a U.S. citizen. Financial need is also considered. Please contact the Graduate School or visit the Graduate School website for application deadlines and details.

### Delano Maggard, Jr., Graduate Research Grant

The Maggard research grant supports graduate students in their pursuit of independent research

and investigation in their field of major interest. Funds are provided through the WSU Foundation, Delano Maggard, Jr. endowed account.

Applicants must be in full-standing status in a degree program. Applicants must be enrolled in the semester prior to the semester of award and show satisfactory academic progress in coursework related to the proposed course of study. Please contact the Graduate School or visit the Graduate School website for application deadlines and details.

## Faculty Nominated Awards

### Ollie A. & J.O. Heskett Graduate Fellowships

The Ollie A. & J.O. Heskett Graduate Fellowship award is made possible by a generous donation to the Wichita State University Foundation from the H. Dene Heskett estate. It is awarded to a degree-bound graduate student in good academic standing, enrolled in at least 6 graduate credit hours, who exhibits significant achievements and qualifications, and strong extracurricular activities in support of the professional community at department, college and/or Wichita State University level. To be considered, students must be nominated by a faculty member. Please contact the Graduate School or visit the Graduate School website for nomination deadlines and details.

### Dora Wallace Hodgson Outstanding Graduate Student Awards

Funding for the Graduate School Outstanding Graduate Student awards is made possible through generous donations to the WSU Foundation from the Dora Wallace Hodgson estate. Awards are given annually for the following categories: Dora Wallace Hodgson Outstanding Doctoral Dissertation, Dora Wallace Hodgson Outstanding Master's Thesis, Dora Wallace Hodgson Outstanding Doctoral Student and Dora Wallace Hodgson Outstanding Master's Student. Students must be nominated for these awards by a faculty member. Please contact the Graduate School or visit the Graduate School website for nomination deadlines and details.

## Part-Time Student Award

### Educational Opportunity Fund

Funds are provided by the Student Government Association from student fees for new and continuing part-time students with financial need. Tuition awards are made contingent on annual funding to full-standing degree-bound students who are enrolled in at least 3 hours but not more than 8 hours, and who qualify for financial assistance. A financial statement form is part of the application. Please contact the Graduate School or visit the Graduate School website for application deadlines and details.

## Student Travel—Special Research Fellowships

Special research fellowships encourage research among graduate students and recognize their superior achievement by providing financial support to students who present the results of their scholarly research at professional meetings and conferences. Please contact the Graduate School or visit the Graduate School website for application deadlines and details.

## Federal Financial Assistance

WSU's Office of Financial Aid helps graduate students secure federal and state financial aid on the basis of qualification.

The first step in applying for federal aid is to complete a Free Application for Federal Student Aid (FAFSA) and to request the results be sent to the Wichita State University Office of Financial Aid. If financial aid is required, the Graduate School strongly recommends that the completed application for admission to Graduate School is received in the Graduate School by February 1 for the following fall semester. Graduate students admitted on probation or placed on academic probation following admission are not eligible for financial aid. Students admitted with conditions are also not eligible for financial aid.

Students must be enrolled in at least half-time status to qualify for federal aid. Half-time status for graduate students is defined as 5 credit hours for the fall or spring semesters, and 3 credit hours for the summer session. For additional information go to wichita.edu/financialaid.

To ensure federal aid is processed before the end of the semester, please adhere to the schedule below. Financial aid applications and all required documents must be in the Office of Financial Aid by the following priority dates:

| *Enrollment Period* | *Priority Date* |
|---|---|
| Spring | November 1 |
| Summer | April 1 |
| Fall | March 1 |

## Work Opportunities

Many graduate students participate in the university's Cooperative Education and Work-Based Learning Program. In this program, students work at the local, state or national level in well-paying jobs that complement their academic fields of study. Students earn academic credit while learning degree-related skills and earn money to support their graduate studies. Students must have departmental permission to participate.

## Exceptions to Regulations

Departures from the rules and regulations stated in the Graduate Catalog require the filing and approval of an Application for Exception to Graduate School Regulations form. Such requests must have the approvals indicated on the form and must state in a logical and coherent manner a rational basis for the requested exception. Forms for such requests are available from the Graduate School, from graduate program areas, and may be downloaded from the Graduate School website. Unusual and/or substantial deviations from stated rules and regulations may require action by the Graduate Council.

# General University Information

## 2016-2017 University and Academic Officers

John W. Bardo, *president*
Tony Vizzini, *provost and senior vice president*
Mary L. Herrin, *vice president for administration and finance*
John S. Tomblin, *vice president for research and technology transfer*
Lou Heldman, *vice president for strategic communications*
Eric Sexton, *vice president for student affairs*
Andrew Schlapp, *director, government relations*
Dennis Livesay, *dean of the Graduate School*
Kimberly Engber, *dean of the Dorothy and Bill Cohen Honors College*
Anand Desai, *dean of the W. Frank Barton School of Business*
Shirley Lefever, *dean of the College of Education*
Royce Bowden, *dean of the College of Engineering*
Rodney E. Miller, *dean of the College of Fine Arts*
Sandra C. Bibb, *dean of the College of Health Professions*
Ronald R. Matson, *dean of Fairmount College of Liberal Arts and Sciences*
Kathy A. Downes, *interim dean of university libraries*

## Kansas Board of Regents

Blake Flanders, *president and CEO*
Board Members:
Joe Bain, *Goodland*
Shane Bangerter, *Dodge City*, chair
Ann Brandau-Murguia, *Kansas City*
Bill Feuerborn, *Garnett*
Dennis A. Mullin, *Manhattan*
Dave Murfin, *Wichita*
Zoe Newton, *Sedan*, vice chair
Helen Van Etten, *Topeka*
Daniel J. Thomas, *Mission Hills*

## Mission and Vision Statement

### Mission:

The mission of Wichita State University is to be an essential educational, cultural and economic driver for Kansas and the greater public good.

### Vision:

Wichita State University is internationally recognized as the model for applied learning and research.

## Wichita State University Profile

Wichita State University, as one of the six universities governed by the Kansas Board of Regents, is Kansas' only urban serving research university.

WSU's location in the largest city in Kansas enhances the traditional classroom experience by providing students greater opportunities in resources, contacts with business and government leaders, employment and internships. WSU is also a local resource for businesses, industry, nonprofits and local government.

Both traditional and nontraditional students enjoy a wide selection of day, evening and summer courses in more than 200 areas of study at the main, west and south locations. Of the almost 14,550 students, 87 percent are from Kansas, representing 104 counties in the state, and the remainder are from almost every state in the U.S. and 104 foreign countries. The average age of entering freshmen at Wichita State is 19; the average age of all undergraduate students is 23.

Nearly 70 percent of the students attend full time, while the remainder attend part time and take advantage of gaining work experience at local companies such as Airbus, Bombardier Aerospace, Spirit AeroSystems, Textron Aviation (including Beechcraft and Cessna), Coleman, Bank of America, Via Christi Regional Medical Center, Wesley Medical Center and Koch Industries. Many students also take advantage of WSU's work-based learning program, which has partnerships with 500 top organizations in the United States.

Wichita State, which is classified by the Carnegie Foundation as a doctoral granting, high research institution, offers undergraduate degree programs in more than 200 areas of study in seven undergraduate colleges: Dorothy and Bill Cohen Honors College, W. Frank Barton School of Business, College of Education, College of Engineering, College of Fine Arts, College of Health Professions, and Fairmount College of Liberal Arts and Sciences. It also offers an associate degree and 13 certificate programs. The Graduate School offers an extensive program including 42 master's degrees, a Specialist in Education degree, 12 doctoral degrees and 26 certificate programs. WSU is accredited by the North Central Association of Colleges and Schools and 24 program-specific accrediting agencies. A listing of WSU programs and degrees is located beginning on page four of the graduate catalog, and at the back of the undergraduate catalog.

Wichita State has 534 full-time faculty and 74 part-time faculty, with 73 percent of the faculty having earned the highest degree in their fields.

Although WSU's first commitment is to excellence in instruction, it has an equally strong commitment to excellence in research and public service as integral parts of its educational mission. The National Institute for Aviation Research consistently receives funding from such agencies as the FAA and NASA to continue important research in such areas as composites and aging aircraft. According to the National Science Foundation, WSU is one of the top research universities for aerospace research in the country. WSU's Regional Community Policing Training Institute is helping train law enforcement and other officials in the region on such relevant topics as counterterrorism.

Businesses, local government, industry and nonprofits benefit from such WSU resources as the Mid-America Manufacturing Technology Center, Small Business Development Center, Center for Management Development, the Center for Entrepreneurship, the Center for Community Support and Research, the Hugo Wall School of Public Affairs, and the new Market-Based Management Center.

WSU offers numerous recreational and cultural opportunities through the many concerts, recitals, theater, dance and other productions performed in its fine arts facilities. The Ulrich Museum of Art specializes in contemporary art. More than 77 pieces of sculpture by internationally known artists adorn the campus as part of the Martin H. Bush Outdoor Sculpture Collection, which has been recognized as one of the top 10 campus art collections by Public Art Review. In 2004, WSU became only the second U.S. university to acquire a sculpture by renowned artist Andy Goldsworthy. The university's premier cultural collection of Asmat art, one of the largest such collections in the United States, is on display in its Lowell D. Holmes Museum of Anthropology.

As an NCAA Division I institution, WSU fields teams in tennis, cross country, basketball, track, golf, crew, bowling, baseball, volleyball and softball.

More than 160 social and special interest clubs provide opportunities for students to meet and work with others who share their interests. Approximately 20 national sororities and fraternities are active on campus.

The 330-acre campus is modern and accessible and at the same time retains the flavor of the university's heritage, combining distinctive Georgian-style architecture with more modern buildings of stone and brick that are accentuated by attractive landscaping. During the past 25 years, Wichita State has more than doubled its instructional space, adding major buildings for art, engineering, health sciences, sciences, physical education, music, dance, and liberal arts and sciences.

To find out more about WSU, go online to wichita.edu/financialaid.

## History

Wichita State University began as Fairmount College, a Congregational institution, in 1895. In 1926, by a vote of the citizens of Wichita, the college became the Municipal University of Wichita, the first municipal university west of the Mississippi River. After 38 years as a municipal university, WSU again changed its status July 1, 1964, when it entered the state system of higher education.

The citizens of Wichita had voted to move the university into the state system and when the measure passed the Kansas Legislature, Wichita endowed WSU with a 1.5 mill levy, a tax that was later adopted by Sedgwick County. The WSU Board of Trustees administers these funds and other local assets of the university.

During its history, the university has had 13 presidents: Nathan J. Morrison, 1895–1907; Henry E. Thayer, 1907–1914; Walter H. Rollins, 1914–1921; John Duncan Finlayson, 1922–1927; Harold W. Foght, 1927–1933; William M. Jardine, 1934–1949; Harry F. Corbin, 1949–1963; Emory Lindquist, 1963–1968; Clark D. Ahlberg, 1968–1983; Warren B. Armstrong, 1983–1994; Eugene M. Hughes, 1993–1998; Donald L. Beggs, 1999–2012; and John W. Bardo, 2012–present.

# University and Specialty Accreditation

Wichita State University has held regional accreditation since 1927 from the Higher Learning Commission. The university will undergo its next comprehensive evaluation during the 2016-2017 academic year. Additionally, several WSU programs hold specialty accreditation. The accreditation status of those programs can be found at wichita.edu/assessment or in information published by the accredited programs. In some cases regional and specialty accreditation status is required by some programs for its graduates to sit for certification examinations and/or to obtain a license and/or a registration. Regional accreditation by The Higher Learning Commission does not constitute specialty accreditation for individual programs.

# Academic Resources

## Language Labs

The Savaiano-Cress Language Laboratories offer a variety of media services to foreign-language students. Audio, video and computer equipment are available to students and faculty alike, with the goal of enhancing and expanding the learning experience through the use of instructional media. Hours are flexible to accommodate all students' needs.

## Math Lab

The Math Lab, 371 Jabara Hall, offers free mathematics tutoring for WSU students enrolled in the following courses: MATH 007, Arithmetic; MATH 011, Beginning Algebra; MATH 012, Intermediate Algebra; MATH 111, College Algebra; MATH 112, Precalculus Mathematics; MATH 123, College Trigonometry; MATH 144, Business Calculus; MATH 242, Calculus I; and STAT 370, Elementary Statistics. Students may work independently knowing that help is available when needed. The Math Lab is staffed by graduate and undergraduate students who are studying mathematics and/or mathematics-related disciplines. No appointment is necessary; students are encouraged to visit the lab during its hours of operation. To determine the hours for the current semester, refer to the schedule posted outside the lab or check the math department's website, wichita.edu/mathlab.

## Media Resources Center

The Media Resources Center (MRC) serves the instructional, research and service missions of the university for media, video and design. The MRC operates the university's cable television station, WSUTV Cox Cable 13, and programs two other channels: Channel 95, MTV; and Channel 97: WSUTV Digital Signage.

The MRC provides high quality video production services with a team of videographers, editors, designers, and with an on-site professional television production studio.

The MRC designs, installs, supports and maintains audio-visual equipment in classrooms and meeting spaces across campus, and provides training and access keys to instructional staff.

The MRC also provides instructional design and educational technology support for all university classes and instructional staff, especially online and hybrid classes taking advantage of the university's licensed learning management system, Blackboard.

Facilities and resources at the MRC include a flexible learning space classroom, a multimedia lab, and recording/web conferencing spaces. A wide array of media equipment is available for use by students and faculty. This includes video recording systems and projection equipment.

### KMUW

KMUW 89.1 is a listener-supported public radio station named Radio Station of the Year by the Kansas Association of Broadcasters, which includes commercial and noncommercial stations. KMUW is licensed to Wichita State University and operates at 100,000 watts with a schedule of local, national and international news, and a unique blend of music and entertainment. In addition to its traditional broadcast service, KMUW maintains a full-service website with local news, online streaming of its signal and archive access to its local music programs. KMUW supports local arts and culture in the community through partnerships, promotion and sponsorships. KMUW also produces seven music programs: Crossroads, Global Village, New Settlers, Straight No Chaser, Strange Currency, Night Train and Soulsations. KMUW is affiliated with NPR, PRI, AP and PRX national networks.

### WSU-TV Cable Television

Wichita State University operates WSUTV, which is carried in more than 17 communities in the Wichita area. National programming promotes greater public awareness of research activities in progress around the world.

Additional programming consists of tele-courses offered each semester for academic credit. Local campus programming includes occasional specials of university events.

## Information Technology Services

The Information Technology Services (ITS) organization provides the informational backbone for campus communications. In addition to the network infrastructure, ITS supports the programs and technology for the administration of the university. Responsibilities include phone services, network connectivity, application support and training, programming support, desktop diagnosis and repair, network administration, security, operations, and technological consulting. More details about these and other services are online at: wichita.edu/its.

### Technology Help Desk

Technology Help Desk is housed in Jabara Hall, room 120. Technology Help Desk provides technical support to all students, faculty and staff of Wichita State University. More details about the help desk and its services are available online at: wichita.edu/helpdesk. The phone number for the help desk is (316) 978-HELP (4357).

| | *Help Desk Hours:* |
|---|---|
| Monday–Friday | 8 a.m.–7:00 p.m. |
| Closed weekends | |

### Open Student Computer Labs

ITS maintains an open computer lab in Jabara Hall, room 120. This lab is configured with up-to-date personal computer systems and an abundance of software applications. Other services that are available are Macintosh systems, scanning, laser printing and color printing. There are lab assistants and professional staff available to support the use of these applications, systems and other services such as email support, Internet use and class project assistance.

| *Jabara Hall, room 120* | *Hours:* |
|---|---|
| Monday–Thursday | 7 a.m.–10 p.m. |
| Friday | 7 a.m.–6 p.m. |
| Saturday | 10 a.m.–6 p.m. |
| Sunday | 1 p.m.–6 p.m. |

### Campus Network Access

All residence hall students are provided a direct, high-speed connection to the campus network and the Internet. Wireless access to the campus network (and Internet) is also available from all campus buildings.

### Email (@wichita.edu)

Every WSU student is automatically assigned an email account with the "@wichita.edu" suffix. This electronic mailbox allows students to send and retrieve communication. The use of email is provided as a source of communication for academic pursuits. Students are expected to use this email address for university communication. Applications, instructions and other information about email accounts are available at the online WSU email center: wichita.edu/email.

### *my*WSU

The *myWSU* portal is a website that allows students to view and update their own WSU information. Examples are: add/drop courses, check academic status, check on status of financial assistance and get academic history (grades). For more information about this service, go to: myWSU.wichita.edu, and click on the *New to my WSU?* link.

## Student Early Alert System (SEAS)

WSU cares about student success. For this reason, WSU has implemented an academic early alert system. Under this system, called SEAS, instructors provide feedback to students who appear to be struggling and offer any assistance that may be needed to help get them back on track academically. Students who are contacted by their instructors through SEAS are encouraged to take full advantage of the help offered.

## University Libraries

University Libraries includes the main Ablah Library, the McKinley Chemistry Library, and the Savaiano-Cress Language Laboratories and the Thurlow Lieurance Memorial Music Library, both located in the Music and Languages Innovation Center (MALIC). These libraries connect students and faculty to the information, technology, and other resources essential to learning and research at WSU.

Library collections include more than two million books and research journals, federal and state documents, music scores, microforms, and other materials. Digital access is available to a variety of information resources with 251 databases offering journal indexing, company information, statistics, streaming audio and video, as well as, access to over 432,400 e-books and 76,462 e-journals. Ablah Library has been a Federal Documents Depository Library for over 100 years and is an official United States Patent and Trademark Resource Center, the only such depository in Kansas. In addition to its own collections, University Libraries is able to borrow materials from a worldwide network of other libraries.

University Libraries is dedicated to offering students a variety of services, study environments and convenient hours. Facilities include both quiet and collaborative study spaces with SmartTVs and white boards. University Libraries facilities include wireless internet access, print stations, scanners, color printers, microform reader/printers, photocopiers, seating for more than 800 people, a 24-hour study room, and a coffee bar. Over 200 computers provide access to library resources, the Internet, and a variety of software. Laptops, tablets, digital cameras and other technologies are available for checkout. Library instruction is offered through in-class collaboration with university departments, workshops, and one-on-one reference help. Technical help desk personnel are available to help library users with equipment and network access issues.

University Libraries Special Collections and University Archives includes rare books, historical Kansas maps, photographs, records of the history of the university, and a growing manuscript collection of more than 700,000 documents. Featured collections include papers of the abolitionist William Lloyd Garrison, the Baughman Collection of Early Kansas Maps and local history, the Aitcheson Rare Books Collection, the Gordon Parks collection, and congressional papers including those of Kansas Congressman Dan Glickman. Digital collections presented by Special Collections and University Archives feature rare books, historical papers and photographs, as well as university and local history, including the Wichita Photo Archives.

More information about resources and services is located on the University Libraries website at libraries.wichita.edu.

## Wichita State Online

Whether seeking a graduate degree, returning to school, planning classes around a busy schedule, or looking to get a degree at Wichita State without relocating from out of state, WSU's online course options can help meet a student's unique educational goals.

Wichita State Online facilitates the development and delivery of WSU's robust selection of online courses taught by Shocker faculty and backed by WSU's tradition of excellence.

In addition to hundreds of courses being taught online each semester, including options for completing general education requirements online, WSU has the following fully online programs:

#### *Undergraduate*

- Associate of Arts
- Bachelor of Business Administration in general business (BBA)
- Bachelor of General Studies (BGS):
  -Aging Studies
  -Criminal Justice
  -Sociology
  -Women's Studies
- Field Major (BA):
  -Aging Studies
  -Criminal Justice
  -Women's Studies
- Criminal Justice (BS)
- Dental Hygiene degree completion (BS)
- RN to BSN degree completion (BSN)

#### *Graduate*

- Aging Studies (MA)
- Criminal Justice (MA)
- Learning and Instructional Design (MEd)
- Doctor of Nursing Practice—postmaster's program (MSN to DNP)

#### *Badges and Certificates*

- Tilford Diversity Studies Certificate
- Care of Populations Health Professions Badge

Search for online courses at: wichita.edu/onlinecourses.

Student support and information: wichita.edu/online.

Request information at: online@wichita.edu.

## Writing Center

The WSU Writing Center in 601 Lindquist Hall is free and open to all WSU students. In the Writing Center, all students can meet with a tutor who is either an undergraduate or graduate teaching assistant. While tutors do not proofread or edit, they offer assistance with all aspects of writing, including brainstorming, organization, style and revision, as well as specific writing concerns voiced by the student. A tutoring session lasts about 30 minutes. No appointment is necessary, but appointments may be scheduled by contacting the center at (316) 978-3173.

In addition to tutoring, the center is equipped with five computers with Internet access, Windows and Microsoft Word (printing services are not available). Students may also do online writing exercises to help improve basic grammar skills. Reading comprehension exercises are also available in the center.

The Writing Center is open 11 a.m.–7 p.m. Monday through Thursday and 11 a.m.–4 p.m. on Friday. It opens the second week of classes and closes at the end of the last day of classes each semester. It is not open on study day, during finals or on holidays.

# University Facilities

Wichita State's main campus is located on a 330-acre site bounded by Hillside, Oliver, 17th and 21st streets in northeast Wichita. The campus is modern and accessible and at the same time retains the flavor of the university's heritage, combining distinctive Georgian-style architecture with more modern buildings of stone and brick that are accentuated by attractive landscaping. During the past 25 years, Wichita State has more than doubled its instructional space, adding major buildings for art, engineering, health sciences, sciences, physical education, music, dance, and liberal arts and sciences.

## Eugene M. Hughes Metropolitan Complex

The Eugene M. Hughes Metropolitan Complex, located at 29th Street North and Oliver, is considered part of the main campus. Named for WSU's 11th president, Eugene Hughes, the 27-acre site has many amenities, including an initial building containing the 1,750-seat Roger Lowe Auditorium, the 145-seat Frederick Sudermann Commons, and the Richard Welsbacher Experimental Theater, a black-box theater. This facility also has a gymnasium, an 80-seat meeting room, classrooms, offices for Adult Education, Continuing Education which offers noncredit courses to the community, and the Evelyn Hendren Cassat Speech-Language-Hearing Clinic offering special services in these

respective fields. The complex also has playfields for intramural sports and the Advanced Education in General Dentistry building, providing advanced education to dental school graduates as well as needed oral health care to the general public.

## Fine Arts Facilities

***Wiedemann Hall*** houses the first pipe organ built in North America by the world-renowned firm of Marcussen and Son, Denmark. The 400-seat music venue, dedicated in 1986, is the ideal acoustical setting for the organ. The building is named for music-lover and philanthropist Gladys H.G. Wiedemann.

***Duerksen Fine Arts Center,*** opened in 1956, hosts university, community and professional music and dance performances. Named for alumnus and long-time dean of the college, Walter Duerksen, the fine arts center houses the School of Music, including the 500-seat Miller Concert Hall, classrooms and practice studios.

***Wilner Auditorium,*** built in 1938 with federal funds provided through the Public Works Administration, is named to honor speech and theater professor George Wilner. Although other stages are now available, the 550-seat Wilner Auditorium still serves as the main stage for theater activities.

## Grace Memorial Chapel

Harvey D. Grace Memorial Chapel, located in the heart of the campus near Morrison Hall and the Rhatigan Student Center, was built in 1963 and dedicated to serve all creeds and races. The chapel is available to students for group or individual worship and meditation, and is a frequent location for weddings.

## National Institute for Aviation Research

The National Institute for Aviation Research (NIAR) at Wichita State University is the largest academic aviation research and development institution in the United States with more than 320,000 square feet of laboratory space. Established in 1985, NIAR offers research, development, testing, certification and training services in the areas of aerodynamics, advanced coatings, aging aircraft, composites and advanced materials, CAD/CAM, computational mechanics, crash dynamics, full-scale structural test, environmental test, wind tunnel testing, mechanical test, nondestructive test, virtual reality, reverse engineering and robotics.

NIAR is home to the National Center for Advanced Materials Performance and the Federal Aviation Administration's Center of Excellence for Composites and Advanced Materials.

NIAR headquarters is located on WSU's main campus. Off-site NIAR locations include the Environmental Test labs at Air Capital Flight Line, laboratories within the National Center for Aviation Training, and the Aircraft Structural Test and Evaluation Center at the former Kansas Coliseum.

Find out more at www.niar.wichita.edu, or by calling (316) 978-6427, or (800) NIAR-WSU.

## Plaza of Heroines

Surrounded by Ablah Library, Jabara Hall, Grace Memorial Chapel and Clinton Hall, the Plaza of Heroines is a beautiful and welcome gathering place. Danseuse Espagnole (Spanish Dancer), by artist Sophia Vari, is a striking addition to WSU's highly regarded outdoor sculpture collection and the centerpiece of the plaza. Landscaping and benches surround the sculpture enhancing the circular plaza, constructed of bricks and granite pavers engraved with the names of honored women. Proceeds from the plaza project benefit the Center for Women's Studies scholarship fund.

### Rhatigan Student Center

See description of the Rhatigan Student Center on page 38.

## WSU South

WSU South, located at 200 West Greenway Street, Suite 115A, Derby, features state-of-the-art audio-visual instructional technology and equipment. In particular, there is a high-definition Interactive Distance Learning (IDL) facility with which WSU lectures are broadcast to colleges in other cities. There is a 30-workstation computer laboratory with class-related software. There is WSU Secure and Guest Wi-Fi throughout the building.

WSU South offers both general education courses and professional degree programs such as the accelerated nursing program that allows nursing students to graduate with a bachelor's degree (BSN) in only 13 months. WATC Shocker Pathway students have the option of completing their WSU associate of arts degree or even some bachelor's degrees requirements at WSU South.

Select student services including free career counseling and math tutoring are available. Students and patrons can order materials from both the WSU Bookstore and WSU libraries to be delivered to WSU South for pickup. WSU library materials may also be returned to the library dropbox at WSU South. A student lounge/lactation room complements the outstanding customer service at WSU South.

### Sport Facilities

See descriptions of the university's sports and recreation facilities on page 38.

## Ulrich Museum of Art

Open up to a new art experience! The Ulrich Museum of Art is located north of the Millipede sculpture in the southwest section of campus. WSU students are eligible for free museum memberships and may activate their memberships by phone (316) 978-3664, email ulrich@wichita.edu or in person at the museum. Members receive e-newsletters along with free admission to events, programs and exhibitions.

The Ulrich Museum presents an endless stream of groundbreaking exhibitions, prominent guest speakers and compelling performances that explore today's visual culture. Free events such as the Ulrich Spa Getaway during finals week (with free hand and chair massages) and Exhibition Opening Celebrations (complete with live music and complimentary food and beverages) give WSU students an opportunity to see great works of art in a fun and relaxed setting.

In addition to the art inside the museum, the Ulrich has one of the top 10 outdoor sculpture collections on a college/university campus in the United States (2006 Public Art Review). Free maps of the outdoor sculpture collection are available at the museum's main desk.

Hours: 11 a.m. to 5 p.m. Tuesday through Friday and 1–5 p.m. Saturday and Sunday. Closed Mondays and major/university holidays.

- Admission: free
- Phone: (316) 978-3664
- Email: ulrich@wichita.edu
- Web: ulrich.wichita.edu
- Facebook: facebook.com/ulrichmuseum
- Twitter: twitter.com/ulrichmuseum

## WSU West

WSU offers more than 100 class sections each semester at WSU West, located at 3801 N. Walker Avenue, which is near the intersection of 37th Street North and Maize Road.

WSU West offers general education and upper-level courses in select disciplines.

WSU West offers services such as career services, financial aid, tuition and fee payment, as well as library book delivery (online checkout only) and return.

WSU West has access to the WSU Wi-Fi network for use by WSU faculty, staff and students, as well as the general public.

Textbook ordering and delivery are also available through the University Bookstore. For further questions call: (316) 978-6777, or visit wichita.edu/west.

# University and Student Support Areas

## Alumni Association

**Courtney M. Marshall,** ***president and CEO***

The WSU Alumni Association is the oldest and largest support organization for Wichita State University. Founded in 1913, the alumni association is the network through which the university community and its alumni communicate with and serve one another. The primary intent of the partnership between the association and the university is to ensure the continued excellence of Wichita State. But this serious mission certainly doesn't mean the association isn't serious about fun, too. Scores of exciting Shocker opportunities

to participate in fun programs and events prove this point every semester.

Many traditional university events—including commencement and homecoming—are supported by association dollars and volunteers. The association also sponsors Shockers Forever, a dynamic student group. Shockers Forever provides students unequaled opportunities to network with fellow students and WSU alumni of all ages. Another WSU initiative that directly benefits students and relies on alumni participation for its success is the *Drive Your Pride* license plate program. This program offers alumni and students the chance to sport WuShock on their official Kansas tags, and at the same time, contribute to student scholarships. The tag program pours thousands of dollars each year into scholarships for deserving students.

For more information about the groups, events, projects and publications of the WSU Alumni Association, visit wichita.edu/alumni, call (316) 978-3290, or drop by the Woodman Alumni Center, 4205 E. 21st Street, just east of Eck Stadium/Tyler Field.

## Career Development Center

WSU's full-service career center!

Nail the resume, land the interview and prepare for the job with the Career Development Center. Build marketable skills and gain professional work experience before and after graduation through targeted internships, one-on-one counseling, special workshops, career fairs and more. Now is the time to develop the right habits and skills for a lifetime of professional success.

Need help choosing a major? No problem! The Career Development Center understands that deciding on a major isn't always easy—and sometimes it's downright hard. That's why the center provides every student the perfect environment to explore their interests, discover their options and create a blueprint for success.

WSU students also have access to the state's largest cooperative education and internship program (with more opportunities than all of the other state schools combined). WSU students can earn work experience, college credit and a paycheck—all while bolstering their resume and getting a leg up on the competition. Get started today by calling (316) 978-3688, visit online at wichita.edu/careerdevelopment, or visit in person in Brennan III and RSC 205.

## WSU Foundation

**Elizabeth H. King,** ***president and CEO***

The WSU Foundation, the private fund-raising organization of the university, strives to enhance a community of learning excellence for students and faculty through philanthropy and stewardship. Private contributions are necessary to support the programs and vision of the university beyond current funding from fees, tuition and government monies.

Gifts of cash, stock, real estate and in-kind gifts are coordinated through the foundation. Planned gifts, most commonly established through a donor's estate or retirement plan set up to benefit the university, also are coordinated through the foundation.

For fiscal year 2016, $7.2 million was given to university programs from endowed funds of the foundation. Of that, $3.7 million was in the form of scholarships to undergraduate and graduate students. The remainder funds projects such as faculty support, research, Ablah Library and the Ulrich Museum of Art.

For more information, contact (316) 978-3040 or foundation.wichita.edu where contributions can be made online.

# Student Involvement

## Child Development Center

The WSU Child Development Center is located at 3026 East 21st Street North, at the NW corner of Hillside and 21st Street. It is a licensed child care center for children of WSU students, faculty, staff and alumni. A diverse staff of qualified lead teachers and WSU student assistants facilitates developmentally appropriate activities—art, language, science, math, music and literature—in a hands-on learning environment. The child care center is open Monday through Friday from 7:30 a.m. to 5:30 p.m. for children 6 weeks to 6 years old.

Enrollment is limited so it is recommended to get on the waiting list as soon as possible. There is a $70, nonrefundable fee to be added to the waitlist.

Students taking 6 hours or more receive a $50 discount. Students who receive financial aid and have an EFC of 0 receive a $100 discount.

For more information, call (316) 978-3109, or online at: wichita.edu/childdevelopmentcenter.

## Counseling and Testing

The Counseling and Testing Center provides psychological services for personal and mental health issues. Psychological testing for learning disabilities is offered. Workshops and seminars on a variety of mental health and wellness topics are available. Academic testing services are also part of the center's function. The center's testing offerings include the credit by exam program, certification tests for community professionals, CLEP tests, and entrance exams for colleges and graduate schools.

Contact the Counseling and Testing Center in 318 Grace Wilkie Hall, at (316) 978-3440, or online at: wichita.edu/counselingtesting.

## Disability Services

The Office of Disability Services provides academic accommodations for students who experience physical, learning or mental disabilities. Students are required to provide appropriate documentation to the director of disability services before classroom services are provided. For more information, contact:

Office of Disability Services
Wichita State University
1845 Fairmount
Wichita, Kansas 67260-0132

(316) 978-3309 front office
(316) 978-6128 for rides
(316) 854-3032 video phone
(316) 978-3114 fax
wichita.edu/disserv

Services are based on the student's need for academic accommodation. Disability services encourages students to be independent on campus and to use those services which help maximize their educational experience.

## Diversity and Inclusion

The Office of Diversity and Inclusion aims to cultivate and sustain an inclusive campus that strives for academic excellence by creating an environment that educates, empowers and mobilizes all member of the Shocker community. The office provides dynamic programs, which range from speakers and film showings to award ceremonies, cultural festivities and LGBTQA programming — each representing a small piece of the diversity displayed on the WSU campus. The Office of Diversity and Inclusion collaborates with many campus departments and student organizations for various diversity and multicultural student success initiatives. In conjunction with campus partners, the office celebrates Hispanic Heritage, LGBTQ, Native American, Black History, Women's History and Asian/Pacific American Heritage months.

The office also sponsors the Multicultural Student Mentoring Program (MSMP) which facilitates the retention, academic success, holistic development and timely graduation of all minority students at WSU, through academic support services, educational and cultural programming, interpersonal relationships and mentoring. MSMP matches successful continuing WSU students with freshmen and transfer students to help ease the transition from high school or community college to WSU. The program helps new students quickly identify all the support services available and provides direct tutorial assistance to any program participants who have committed to achieving their personal best.

The Office of Diversity and Inclusion is located in the Rhatigan Student Center suite 208. Much more detailed information describing the Ambassadors for Diversity and Inclusion, Men of Excellence support group and additional resources the office provides can be found at: wichita.edu/odi.

## International Student Services

The Office of International Education serves the special needs of approximately 1,750 international students from more than 100 countries enrolled at Wichita State University. (For international student admission requirements, see

Residency Defined on page 19 and Information for International Applicants on page 15.) An orientation program specially designed for new international students prepares them for entrance into the U.S. academic system and way of life.

The office also sponsors Friendship International for Women, the Cultural Ambassador Program, and other activities that promote interaction between U.S. and international students.

In addition, the office houses a study abroad reference center which provides information to U.S. students on study, work and travel opportunities abroad.

For more information, contact the Garvey International Center, (316) 978-3232.

## Military and Veteran's Services

Wichita State is proud to be committed to helping veterans, active service members, dependents and spouses receiving military benefits make the successful transition into WSU's academic community. Whether it's needing assistance with educational benefits, access to resources that ease the transition into the university, or wanting to connect with fellow vets, WSU has access to resources that will help smooth the transition. An overview of resources can be found at wichita.edu/military.

In the capacity of serving active duty military and veterans, the Director of Adult Learning serves as the point of contact (POC) for inquiries pursuant to the Department of Defense Memorandum of Understanding. For questions concerning POC needs, contact Dr. Susan Norton at wichita.edu/adultlearning.

### Captain Pitts Military and Veteran Student Center

The Captain Riley Leroy Pitts Military and Veteran Student Center, in Lindquist Hall 107, exists to build and maintain a community of students with military experience and to provide comprehensive support for the unique needs of veterans, military members and military dependents in an environment of respect. All students with military experience—past or present—and military dependents are welcome to visit the Military and Veteran Student Center to ask questions, find resources, make connections, study, use the free computer stations or to just unwind between classes. Call (316) 978-3856 or visit wichita.edu/veterancenter for more information. (Note that Veterans Services in the Office of Financial Aid is the place to contact for questions about GI Bill education benefits or enrollment certification. Current or recent military members needing help with the transition to college can also contact the TRIO Veterans Upward Bound program.)

### Veteran's Services—Benefits

The Office of Financial Aid, 203 Jardine Hall, provides services to veterans and active duty personnel. Services include certification for benefits to the VA, financial aid information, and work-study for veterans.

For more information, visit the website wichita.edu/veterans.

## OneStop

OneStop offers student-focused support for most WSU student related needs. OneStop allows students the ability to get many answers for admissions, financial aid, advising, student accounts and registration in a central place. OneStop offers self-service options 24/7/365 online at wichita.edu/onestop and toll-free phone service at (855) 978-1787. Students will need a OneStop telephone access code found by going to *my*WSU.wichita.edu and selecting "Manage your Password" for current students or "New to *my*WSU" for incoming students. In-person service is also available in Jabara Hall, Room 122, 8 a.m.–7 p.m. Mondays–Thursdays, and 8 a.m.–5 p.m. on Fridays.

## Rhatigan Student Center

The Rhatigan Student Center (RSC) is the community center for Wichita State University. Through its facilities and services, the RSC serves students, faculty, staff, alumni and the Wichita community.

The RSC Food Court features Taco Bell Express®, Chick-Fil-A Express®, Pizza Hut Express® featuring the Wing Street Menu, Fast Break & Freshens Smoothies & Yogurts and Erbert and Gerbert's Bistro.

The University Bookstore, on the first floor of the RSC, stocks textbooks for rent or purchase, casual and professional Shocker apparel, art supplies, Shocker souvenirs and gifts.

The RSC's Shocker Sports Grill and Lanes is for leisure use. Located on the lower level of the RSC, it includes billiards, bowling, poker tournaments, darts, and fun foods and beverages.

The newly renovated RSC is perfect for parties and is made available for campus and noncampus group rentals at reasonable rates. The center is also the home of the nationally ranked Shocker men's and women's bowling teams.

The RSC is home for the Student Government Association, Student Advocate, the Office of Diversity and Inclusion, Student Affairs, the dean of students, Student Involvement, a satellite office for Career Development, the Shocker Card Center, Commerce Bank, Campus Ministry, Lords and Ladys Hair Salon, and the Engraving Shop.

Additionally, the RSC has a 450- seat theatre and meeting spaces that can be scheduled for use.

The University Event Services office schedules the use of all facilities in the RSC as well as most university facilities for out-of-classroom use. Additionally, the University Information Center (UIC) is located on the first floor of the RSC. Call the UIC at (316) 978-INFO (4636) for any information about WSU.

Visit the RSC online at wichita.edu/RSC for more information.

## Sports and Recreation

Numerous sports and recreation programs exist at the university.

As an NCAA Division I member, Wichita State competes in the Missouri Valley Conference; WSU men compete in basketball, baseball, cross country track, tennis and golf. WSU women compete in basketball, softball, cross country track, tennis, golf and volleyball. The university fields teams in bowling and crew as independent sports.

There is also an extensive campus recreation program. Club sports include spirit squad, dance squad, racquetball, men's and women's soccer, men's volleyball, wheelchair athletics, ice hockey and aikido. Intramural sports include flag football, basketball, table tennis, badminton, soccer, softball, bowling, swimming and racquetball.

Students with a current Shocker ID card are admitted free to all varsity athletic events.

### Sport Facilities

The 10,506-seat *Charles Koch Arena*, which is used for intercollegiate basketball games, volleyball matches, and major entertainment events, is the home of WSU intercollegiate athletics. Other facilities include *Cessna Stadium*, a 31,500-seat facility, home to the Shocker Track and Field program; the 7,851-seat *Eck Stadium*–Home of *Tyler Field*, home to the Shocker baseball program, which underwent a $7.8 million renovation in 2000 and ranks among the finest college baseball facilities in the country; the *Sheldon Coleman Tennis Complex* with eight lighted courts, home to WSU's men's and women's intercollegiate tennis program; and the 1,000-seat *C. Howard Wilkins Softball Facility* for intercollegiate softball for women. Visit us online at: goshockers.com.

### Campus Recreation

Campus Recreation is home to everything Shockers need to get their fitness, leisure and recreation groove on! Many indoor programs and activities take place in the *Heskett Center*. This 166,000 square-foot facility has everything fitness enthusiasts need for healthy, enjoyable, and productive college careers. By presenting a current Shocker ID card students open a door into the very best in fitness and recreation! Features include:

- Five convertible basketball/volleyball/badminton courts;
- Complimentary Shocker Fit, group fitness classes to all registered students. Over 25 classes/week including Cycle Fit, PiYo, Yoga, and Zumba.
- Two hundred (200) meter indoor track;
- Three Shocker fitness studios, + CYCLE Fit studio;
- Racquetball and squash courts;
- Mount Wu, a 25 foot-high climbing wall;
- Five thousand plus square feet of fitness specific activity space including cardiovascular, and strength and conditioning equipment;
- Twenty-five (25) meter swimming pool with separate dive well;

- Six outdoor, lighted, hard-court tennis courts;
- Spacious men's and women's locker rooms; and
- Extensive sports and competition program consisting of many seasonal intramural opportunities as well as year-long sport club programs and activities.

Individual services available for purchase by members include:

- Personal training session packages;
- Massage session packages; and
- Variety of special event style activities including the Pumpkin Run 5k race, NIRSA Day and health fair.

Campus Recreation is here to provide students with solutions to their fitness, leisure and recreational needs. To learn more about the programs and services provided check out wichita.edu/campusrecreation, *Like* us on Facebook, or speak with a guest services assistant at (316) 978-3082.

## Student Government Association

Wichita State believes that one of its primary tasks is preparing students for the responsibilities of citizenship in a democratic society. With this in mind, the university places an increasing emphasis on the role the Student Government Association plays on campus.

The legislative, executive and judicial responsibilities of SGA are vested in the Student Senate, the executive officers and cabinet, and the University Supreme Court. The senate appoints students to many university and faculty senate committees, recognizes and funds more than 200 student organizations, and allocates approximately $10 million annually in student fees to campus agencies including the Heskett Center, Rhatigan Student Center and Student Health Services. SGA also provides opportunities to fund education through the Rhatigan Leadership Scholarship and provides financial assistance for child care through the child care assistance program. The cabinet executes the decisions of the senate and the officers. The Supreme Court issues opinions on constitutional questions and also serves as an appellate court for traffic appeals. Each of these entities also participates in the determination of university policy.

Each student is automatically a member of SGA and is eligible to vote in the annual elections in April. Throughout the year, openings exist on the Student Senate, as well as in many of the university committees. All students are encouraged to participate in student government through the many opportunities SGA offers.

For more information, contact the Student Government Association, Room 219, Rhatigan Student Center, Wichita State University; (316) 978-3480.

## Student Health Services (SHS)

The professional medical staff at Student Health Services is committed to providing high quality, affordable health care to the students of WSU. Student Health Services is located on the main campus at 209 Ahlberg Hall. Services are available for all currently enrolled students.

Student Health Services provides care and treatment of acute and chronic illness, immunizations, routine wellness exams, lab testing, and health education and promotion.

Health insurance is not required to see a medical provider at Student Health Services. The KBOR group student health plan is accepted.

Service fees are very low and can be paid by cash, check or credit card. Call (316) 978-3620, or visit wichita.edu/shs.

## Student Money Management

Students wanting to learn more about managing their finances can now get free help from certified peer financial coaches. Located in 115 Neff Hall, the Office for Student Money Management (OSMM pronounced "awesome") is open during normal office hours and is available in the evenings by appointment.

OSMM, as part of the Office of Student Success, is designed to help increase retention and graduation rates by addressing one of the major stressors for WSU students and one of the major reasons for dropping out across the country: struggles related to money.

OSMM provides students with information and coaching on a variety of topics related to personal finances in college—including completing the FAFSA, making and sticking with a spending plan, matching a plan for paying for college with a plan for graduation, ways to establish good credit or get out of credit trouble, figuring out how much to borrow for college and how to pay it back, and finding campus and community resources.

OSMM does not offer scholarships, credit counseling or advice related to bankruptcy, investment or retirement. Contact (316) 978-3254 or osmm@wichita.edu for more information or to make an appointment to meet with a peer financial coach.

## TRIO Disability Support Services

The TRIO Disability Support Services program provides opportunities for academic development, assists students with basic college requirements and motivates students with disabilities toward the successful completion of a baccalaureate degree.

The program's goal is to increase the college retention and graduation rates of students with learning, physical and psychological disabilities.

Services provided by TRIO DSS include individualized academic tutoring, advice and assistance in postsecondary course selection and degree planning, assistance with graduate and professional program applications, and career exploration and referral. TRIO DSS assists students with information about financial aid programs and scholarship opportunities, provides assistance in completing financial aid applications, and offers education or counseling services designed to improve financial/economic literacy. Students at TRIO DSS sharpen study/life skills through workshops and access to the computer technology lab, book/computer loan program (desktop and laptop) and exposure to cultural events and academic programs on campus and in the community.

For information, contact TRIO DSS at (316) 978-5949, stop by 158 Grace Wilkie Annex, or visit wichita.edu/dss.

# University Policies

## Student Responsibility

Students at Wichita State University have the following responsibilities:

1. To consult their advisors on all matters pertaining to their academic careers, including changes in their programs;
2. To observe all regulations of their colleges and select courses according to the requirements of that college;
3. To attend all meetings of each class in which they are enrolled (instructors will announce at the beginning of the semester if they consider attendance in computing final grades);
4. To fulfill all requirements for graduation;
5. To be personally responsible for fulfilling all requirements and observing all regulations at Wichita State;
6. To answer promptly all written notices from advisors, faculty, deans and other university officers;
7. To file an application for degree in the appropriate college office by the published deadline for the semester in which graduation is intended; and
8. To enroll in only those courses for which the stated prerequisite(s) have been satisfactorily completed. Failure to comply with this procedure may result in administrative withdrawal.

Students also should comply with the principles in the following statement:

> Wichita State University reaffirms the principle of intellectual freedom in scholarly activity for university students, and it recognizes the full citizenship rights of students in inquiry, discussion and such actions as they may choose to take on public issues.
>
> The rights and freedoms of students involve concomitant responsibilities. Incumbent on all students, as on all citizens, is the responsibility to observe the university's rules of orderly procedures and the laws of the larger community of which the university is a part. In the matter of actions on public issues, to speak one's opinion, to petition, to distribute literature, to assemble peacefully and hold meetings, to use the persuasion of ideas, and other actions within the bounds of orderly and lawful procedures are sanctioned by the university. But infringement on the rights of others, acts or threats of violence to persons, destruction of property, disruption, or other interference with the normal functioning of the university and its

personnel and other disorderly and unlawful acts will not be countenanced.

Within its sphere of responsibility the university will afford students proper procedural safeguards to resolve matters in dispute. Those who willfully violate university standards must expect to face disciplinary action on the part of the institution, which may include reprimand, administrative withdrawal, probation or suspension, consistent with campus provisions for due process.

## Student Code of Conduct

The Student Code of Conduct details guidelines regarding student and organization conduct and procedures. These guidelines cover topics such as academic honesty, drug use, hazing, gambling, alcohol, weapons and harassment. The conduct procedures outline the actions needed to file a complaint and the course followed in the student conduct process.

The Student Code of Conduct is located online at wichita.edu/studentconduct. Individuals wanting to file an incident report about a student can fill out a report online at wichita.edu/studentconduct.

## Sexual Misconduct, Relationship Violence and Stalking Policies

Wichita State University is committed to the elimination of sexual misconduct, relationship violence and stalking within the university community. These incidents may interfere with or limit an individual's ability to work productively, maintain a safe living environment, or to benefit from or fully participate in the university's educational programs. Additionally, these incidents may cause serious physical and/or psychological harm.

Wichita State University maintains a comprehensive program to prevent these behaviors, provides resources to assist and support those who are involved in such incidents, and will respond promptly and equitably to reports of sexual misconduct, relationship violence and stalking. The university has a responsibility to eliminate the behavior, prevent its recurrence, and address its effects on any individual and/or the community. Retaliatory actions against any individual involved in reporting or participating in the investigation of a complaint will not be tolerated.

Information regarding the university's policies can be found in sections 8.16/Sexual Misconduct, Relationship Violence and Stalking Policy for Students, and 3.06/ Sexual Misconduct, Relationship Violence and Stalking Policy for Employees and Visitors in the *WSU Policies & Procedures Manual*.

Campus and community resource information can be found at: wichita.edu/care.

## Student Academic Honesty

A standard of academic honesty, fairly applied to all students, is essential to a learning environment. Students who compromise the integrity of the classroom are subject to disciplinary action by their instructor, their department, their college and/or the university. Violations of classroom standards of academic honesty include, but are not limited to:

1. Cheating in any form, whether in formal examinations or elsewhere.
2. Using or submitting the work of others as one's own original work without assigning proper credit to the source.
3. Misrepresentation of any work done in or out of the classroom or in preparation for class.
4. Falsification, forgery or alteration of any documents pertaining to academic records.
5. Colluding with others in an effort to obtain a grade or credit not truly reflective of what the student knows or has learned.

Students violating such standards must accept the consequences and appropriately assessed penalties, which may include reprimand, a failing grade, or suspension or dismissal from an academic program or the university. Students accused of abridging a standard of academic honesty will be provided with mechanisms for review and appeal of decisions regarding allegations of academic misconduct.

The fundamental responsibility for the maintenance of the standards of academic honesty rests with each student. It is each student's responsibility to be familiar with university policy on academic honesty and to uphold standards of academic honesty at all times and in all situations.

## Release of Student Information Policy (Privacy Law)

The Family Educational Rights and Privacy Act of 1974 (FERPA), as amended, is a federal law that sets forth requirements pertaining to the disclosure of, and access to, education records maintained by Wichita State University.

Wichita State University accords all rights under the law to students. Those rights are: (1) the right to inspect and review the student's education records; (2) the right to request amendment of the student's education records to ensure that they are not inaccurate, misleading or otherwise in violation of the student's privacy or other rights; (3) the right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent; and (4) the right to file with the U.S. Department of Education a complaint concerning alleged failures by Wichita State University to comply with the requirements of FERPA.

No one outside the institution shall have access to, nor will the institution disclose any information from, students' education records without the prior written consent of the student(s) except to personnel within the institution who have a legitimate educational interest, to persons or organizations providing students financial aid, to accrediting agencies carrying out their accreditation function, to persons in compliance with a judicial order, to persons in an emergency in order to protect the health or safety of students or other persons, or to other persons or entities to whom disclosure is permitted under the act. Upon request, the institution also discloses education records, without consent, to officials of another school in which a student seeks or intends to enroll, or is enrolled.

Within the Wichita State community, only those members, individually or collectively, acting in the students' "legitimate educational interests" are allowed access to student education records. These members include personnel in the offices of admissions, registrar, financial operations, computing center, dean of students, financial aid, career services, cooperative education, planning, testing, library, college deans, academic advisors, and other administrative and academic personnel within the limitation of their need to know. "Legitimate educational interests" means (1) the information or records requested is/are relevant and necessary to the accomplishment of some task or determination; and (2) the task or determination is an employment responsibility for the inquirer or is a properly assigned subject matter for the inquirer's employment responsibility.

A Social Security number and student status data may be provided to other state agencies for use in detection of fraudulent or illegal claims against state monies.

## Public Notice Designating "Directory Information"

At its discretion the institution may provide directory information to anyone in accordance with the provisions of the act.

Wichita State University hereby designates the following student information as public or directory information.

*"Directory Information" includes the student's name, address, telephone listing, electronic mail address, photograph, date and place of birth, major field of study, dates of attendance, grade level, enrollment status, participation in officially recognized activities and sports, weight and height of members of athletic teams, degrees, honors and awards received, and the most recent educational agency or institution attended.*

*The name(s) and address(es) of the student's parent(s) or guardian(s) may be disclosed when used for an official university news release about the student's receipt of degrees or awards or about participation in officially recognized activities or sports. Parent name, address, telephone number, and e-mail address is designated as directory information for the limited purpose of disclosure to the Wichita State University Foundation, Inc. to support programs and activities of the institution and the WSU Foundation.*

**Currently enrolled students may withhold disclosure of "directory information"** (on an all or none basis) to non-institutional persons or organizations. Students have an option to protect their privacy and not have such information released by completing a written request.

The form for requesting the withholding of directory information is available from the Office of the Registrar, 102 Jardine Hall, or call (316) 978-3090 to have one mailed or faxed. The completed form is returned to the registrar's office with a readable copy of one of the student's government issued photo IDs, such as a driver's license. The form is processed by the business day after it is received. Withholding directory information applies to *all* the items above and excludes the student from the online directory, which is available on the WSU website to anyone with a *my*WSU ID. It also has other ramifications. Students should consider very carefully the consequences of any decision to withhold directory information to outside parties. Doing so could be a disadvantage should a lender, insurance company, employer, etc., want to quickly verify a student's enrollment or graduation. It also excludes a student from the Dean's Honor Roll or graduation lists that are sent to the media.

The institution will honor a student's request to withhold directory information, but cannot assume responsibility to contact students for subsequent permission to release it. Regardless of the effect on a student, the institution assumes no liability for honoring instructions to withhold information.

The same form and process is also used to remove a previous *do not disclose* instruction. Requests for nondisclosure may be filed anytime. Requests will be honored until withdrawn.

## Family Educational Rights and Privacy Act (FERPA)

### *1. Definitions*

***A. Consent.*** Consent shall be in writing and shall be signed and dated by the student giving consent. It shall include: (a) specification of records to be released; (b) purposes for such release; and (c) parties or class of parties to whom such records may be released.

***B. Directory Information.*** FERPA regulations define directory information as: "Information contained in an education record of a student which would not generally be considered harmful or an invasion of privacy if disclosed." Under the regulation, such information includes, but is not limited to, the student's name, address, telephone listing, electronic mail address, photograph, date and place of birth, major field of study, dates of attendance, grade level, enrollment status, participation in officially recognized activities and sports, weight and height of members of athletic teams, degrees, honors and awards received, and the most recent educational agency or institution attended.

***C. Disclosure.*** Permitting access or the release, transfer, or other communication of education records of the student or the personally identifiable information contained therein, orally, or in writing, or by electronic means, or by any other means to any party.

***D. Education Records.*** Those records that are directly related to a student and that are maintained by the university or by a party acting for the university.

Excluded from the category of "education records" are the following and to which the law does not guarantee the right of student access:

(1) Records created by an individual staff member that are not revealed to any other individual except to a person who might substitute for, or replace, the original staff member.

(2) Medical and psychological records that are maintained only in connection with provision of treatment to the student and that are not available to persons other than those providing treatment except that such records may be personally reviewed by a physician or other appropriate professional of the student's choice and with the student's written consent.

(3) Records of the WSU Police Department maintained solely for law enforcement purposes, which are maintained separately, and which are not disclosed to individuals other than law enforcement officials sharing the same territorial jurisdiction.

(4) Records that contain only information relating to a person after that person is no longer a student at the university. An example would be information collected by the university or the WSU Alumni Association pertaining to the accomplishments of its alumni.

(5) Employment records of any person if maintained in the normal course of business and used only for purposes relating to the employment, unless the person is employed at the university only because of her or his status as a student (that is, student hourly). In such cases, student employment records are education records but are to be maintained separately from other education records.

(6) Grades on peer-graded papers before the grades are collected and recorded by a teacher.

***E. Legitimate Educational Interests.*** The interests of university personnel who have a demonstrably legitimate need to review records in order to fulfill their official professional responsibilities. Such responsibilities must involve the university in its primary educational and scholarly functions and/or secondary administrative functions of maintaining property, disbursing funds, keeping records, providing living accommodations and other services, sponsoring activities, and protecting the health and safety of persons or property in the university community. If a question arises concerning the legitimacy of a request to review records, such question shall be referred to the registrar, and/or the vice president and general counsel.

***F. Parent.*** Includes a parent, a guardian, or an individual acting as a parent of a student in the absence of a parent or guardian.

***G. Personally Identifiable Information.*** Includes the name of the student; the student's parent(s) or other family member(s); the address of the student; personal identifiers such as a social security number, student number, or biometric record, or other personal characteristics or other information that would make the student's identity easily traceable.

***H. School Official.*** Faculty, staff, university police officers, student employees, members of the behavioral intervention team, committees (when the members of the committee are appointed or elected to an officially constituted committee) that perform a function or task on behalf of, and at the request of, the university, its faculty, colleges, schools or divisions. A school official also may include a contractor who performs an institutional service or function for which the university would otherwise use its own employees and who is under the direct control of the university with respect to use and maintenance of personally identifiable information from education records.

***I. Student.*** For purposes of this policy, anyone who is or has been enrolled at Wichita State University, with the following exception:

A person who has applied for admission to, but has never been in attendance at a component unit of the university (such as the various schools and colleges of the university), even if that individual is or has been in attendance at another component unit of the university, is not considered to be a student with respect to the component to which an application for admission has been made.

***J. Unit Custodian of Student Records.*** Except as otherwise designated in this policy, the head of each academic or administrative unit is responsible for the education records within the unit.

### *2. Student Access to Education Records*

A. A student has the right and shall be accorded the opportunity to review/inspect his or her educational record, except as provided for below. The university must comply with the student's request within a reasonable period of time, not to exceed 45 days after the request.

B. The student has the right to a reasonable request for explanation of the records. Wichita State University is not required to provide copies of records, unless for reasons such as a great distance, it is impossible for the parents or eligible student to review the records. Such copies will be provided at the student's request and expense; however, the charge to the student for any such records may not exceed $.25 per page. The university may not charge a fee to search for or retrieve a record. If any question arises as to the identity of the requesting student, the student shall be asked to provide his or her university ID card and/or other positive identification.

C. The university is not required to afford inspection and review of the following records:

(1) Financial records of the student's parents submitted as part of the financial aid process;

(2) Confidential letters and statements of recommendation that were placed in the student's education records prior to January 1, 1975, if such letters were submitted with an understanding of

confidentiality, and are used only for the purpose for which they were specifically intended;

(3) Confidential letters and statements of recommendation received after January 1, 1975, for which the student has signed a waiver of the right to access and which pertain to: (a) admission to this or any other educational institution or agency; (b) application for employment; or (c) receipt of an honor or honorary recognition so long as these letters are used solely for the purpose(s) for which they were specifically intended.

D. If an education record contains information about more than one student, the student may inspect only the information about himself or herself.

#### *3. Waiver of Rights*

The university may request, but not require, students to waive rights under this policy; the waivers must be in writing and signed by the student. Applicants for admission to the university and eligible students may waive rights to review confidential letters of recommendation only if:

A. The applicant or student, upon request, is notified of the names of all persons providing letters;

B. The letters are used only for the purpose for which they were originally intended;

C. The waiver is not required as a condition of admission or for any other service or benefit of the university.

All waivers under this paragraph must be executed by the individual, regardless of age, rather than by the parent of the individual. All waivers must be in writing and signed by the student.

The student may revoke any waiver in writing, the revocation to apply only to documents received or entered into the record after the date of execution of the revocation.

#### *4. Disclosure of "Personally Identifiable" and "Directory Information"*

The university shall obtain the written consent of the student before disclosing personally identifiable information from education records except as otherwise provided in this policy.

The university may, without the consent of the student, disclose directory information. If a student wishes to have such information withheld, he or she must notify the Office of the Registrar in writing, as described previously. If a student wishes to prevent the inclusion of such information in the online student directory, he or she must notify the Office of the Registrar.

The university may disclose personally identifiable information without the consent of the student to school officials within the institution determined to have legitimate educational interests; to contractors, consultants, volunteers and other parties to whom the university has outsourced institutional services or functions as permitted by FERPA regulations; to authorities to comply with a judicial order or subpoena, provided the university makes a reasonable effort to notify the student in advance of compliance (unless judicial order or subpoena specifically prohibits such contact); to financial aid personnel in conjunction with an application for financial assistance; to organizations conducting studies for accrediting functions; and to appropriate persons in a health or safety emergency. Disclosure of personally identifiable information without the consent of the student may also be made when required by law or government regulation.

The university may disclose personally identifiable information from the education records of a student without a student's consent in connection with a student's request or receipt of financial aid, provided the disclosure is needed: (1) to determine the eligibility of the student for financial aid; (2) to determine the amount of financial aid; (3) to determine the conditions for the financial aid; or (4) to enforce the terms or conditions of the financial aid.

The university may disclose personally identifiable information from the education records of a student to appropriate parties, including parents of an eligible student, in connection with an emergency if knowledge of the information is reasonably considered to be necessary to protect the health or safety of the student or other individuals. Disclosures for this purpose shall take into account the totality of the circumstances pertaining to the threat to the health or safety of a student or other individuals. If the university determines that there is an articulable and significant threat to the health or safety of a student or other individuals, it may disclose information from education records to any person whose knowledge of the information is reasonably considered necessary to protect the health or safety of the student or other individuals.

The university may disclose personally identifiable information from the education records of a student to a parent without the student's consent regarding the student's violation of any federal, state or local law, or of any rule or policy of the university, governing the use or possession of alcohol or a controlled substance if the institution determines that the student has committed a disciplinary violation with respect to that use or possession and the student is under the age of 21 at the time of disclosure to the parent.

The university may disclose personally identifiable information from a student's education record without the student's consent upon request of another institution of postsecondary education where the student seeks or intends to enroll, or is enrolled, so long as the disclosure is for purposes related to the student's enrollment or transfer.

As permitted by and subject to FERPA regulations, the university also may disclose personally identifiable information from education records to authorized representatives of federal, state and local educational authorities, to organizations conducting studies for or on behalf of educational agencies or institutions, to accrediting organizations, to comply with judicial orders or lawfully issued subpoenas, to victims of a crime of violence or nonforcible sex offense, in connection with university disciplinary proceedings, or if disclosure concerns sex offenders and other individuals required to register under federal law.

The university student health service is required to report to the Kansas Department of Health the names of students who have certain communicable diseases such as hepatitis, tuberculosis, and venereal disease. The health service is also required to report to local law enforcement officials the name of any student who is wounded with a deadly weapon.

#### *5. Release of a Student's Grades*

Board of Regents policy provides that the university may not withhold the written record of grades earned by any dependent student when the university receives a written request for any such grades from a student, or the student's parents or legal guardian. The student will be notified in writing of any disclosure of his or her grades made to his or her parents or legal guardian. Dependency, for this purpose, is defined by the Internal Revenue Code, as amended. Should the student be financially indebted to the university, a transcript request will not be honored and the person submitting the request will be so notified.

#### *6. Notice to Third Parties*

The university must inform the parties to whom personally identifiable information is given that they are not permitted to disclose that information to others without the written consent of the student and that the information is to be used only for the purpose(s) intended.

#### *7. Providing Copies of Disclosed Records*

When the unit custodian discloses personally identifiable information from the education record of a student, the unit custodian shall, at the student's request and expense, provide a copy of the disclosed record to the student, unless otherwise specified by this policy.

#### *8. Destruction of Records*

Education records shall be maintained consistent with university policy on the retention of records. No education record, however, may be destroyed if there is an outstanding request to inspect and review the record. Also, the record of access to the education record and any explanations which are a part of the record must be maintained for as long as the education record to which it pertains is maintained.

#### *9. Maintaining Records of Requests and Disclosures*

The unit custodian shall maintain a record of requests and disclosures of personally identifiable information from a student's education record. The record shall include, whether requests are granted or not, the name(s) of the person(s) who requested the information and their legitimate interests in the information. Records of requests and disclosures will not be maintained:

(1) for requests made by the student; (2) for requests for which the student has given written consent; (3) for requests made by school officials with legitimate educational interests; (4) for requests for directory information; (5) for disclosures in compliance with certain judicial orders or lawfully issued subpoenas, after a reasonable attempt has been made to notify the eligible student or parent.

The record of requests and disclosures may be inspected by the student, by school officials responsible for the custody of the records, and by federal and state officials who have been given permission to access records by the registrar.

***10. Students' Right to Challenge Information Contained in Education Records***

A student may challenge the content of an education record on the grounds that the record is inaccurate, misleading or otherwise in violation of the privacy or other rights of the student. No hearing under this policy shall be granted for challenging the underlying basis for the grade. However, the accuracy of its recording could be challenged.

The following procedure for challenging the content of an education record shall apply:

A. The student has the right, upon reasonable request, for a brief explanation and interpretation of the record in question from the respective unit custodian.

B. The unit custodian of the challenged education record, after reviewing the record with the student, may settle the dispute informally with the student with regard to the deletion or modification of the education record. The unit custodian shall make his or her decision within a reasonable amount of time and shall notify the student of the decision.

C. In the event the unit custodian disapproves the student's request to delete or modify the record in question, the student shall be notified by the unit custodian, in writing, of the decision and of the student's right to a formal hearing upon the request.

(1) All requests for formal hearings by the student shall be directed to the registrar, and shall contain a plain and concise written statement of the specific facts constituting the student's claim.

(2) The hearings shall be conducted by a university staff member (hearing officer) who does not have a direct interest in the outcome of the challenge and who shall be appointed by the registrar. The hearing shall be held within a reasonable time of receipt of the student's request and the student shall be notified reasonably in advance by the hearing officer of the date, place, and time of the hearing.

(3) At the hearing the student shall be afforded a full and fair opportunity to present evidence relevant to the claim and may, at his or her expense, receive assistance or be represented by any individuals of choice.

(4) Based solely on the evidence presented at the hearing and within ten (10) working days of the hearing, the hearing officer shall make a written recommendation to the registrar together with written findings of fact concerning the student's request. Within an additional fourteen (14) working days of receipt of the hearing officer's report, the registrar shall notify the student in writing of the decision. The decision must include a summary of the evidence and the reasons for the decision.

D. In the event the decision of the registrar is adverse to the student's request, the student shall be notified of the opportunity to place with the education record a summary statement commenting upon the information in the records and/or setting forth any reason for disagreeing with the decision. If the questioned document is released to a third person, the student's summary statement shall accompany the release of any such information. The summary information shall be maintained for as long as the contested record is maintained.

E. If a student challenge to the content of a given record is successful, the university shall amend the education record accordingly and so inform the student. Upon the student's specific written request to the registrar, the university shall make a reasonable effort to contact student-designated third persons who have received copies of the previous record to inform them of the change which has been made.

***11. Complaint Procedure***

If a student believes that the university is not in compliance with FERPA, the student should first contact the office involved and/or the Office of the Registrar.

If a student wishes to file a complaint with the federal government concerning the university's failure to comply with FERPA, he or she must submit the complaint, in writing, within 180 days of an alleged violation of FERPA to the Family Policy Compliance Office (FPCO), U.S. Department of Education, 400 Maryland Avenue, S.W., Washington, D.C. 20202. The FPCO office will notify the student when the complaint has been received. The FPCO office will investigate the complaint, and may require further information of its findings and basis for such findings. In the event the university is found not to be in compliance, it will be afforded the necessary time to comply. If it does not then comply, the matter will be sent to a review board for a hearing. For information concerning this hearing procedure, see 34 C.F.R. Sections 99.64 through 99.67.

## Injury or Accident

The state of Kansas and Wichita State University do not insure against, and are not responsible for, accidents or injury to students which may occur during university-sponsored activities on or off campus. Students are expected to act responsibly by taking necessary precautions to prevent accidents. Students also are advised to protect themselves from the financial burden of accident or injury through a personal insurance policy.

## Notice of Nondiscrimination

1. It is the stated policy of Wichita State University to prohibit discrimination in employment and in educational programs and activities on the basis of race, religion, color, national origin, gender, age, sexual orientation, gender identity, gender expression, marital status, pregnancy, political affiliation, status as a veteran, genetic information or disability.

2. In working to achieve and maintain a welcoming and discrimination-free environment, it is necessary and appropriate that employees, visitors and students be encouraged to make complaints and concerns about perceived discriminatory behaviors known to university supervisors and officials.

3. Any individual who engages in retaliatory conduct against a university employee, visitor or student who has filed a complaint alleging discrimination or otherwise exercised their rights and privileges against illegal discrimination, will be subject to disciplinary actions pursuant to established university procedures, up to and including termination of employment or student status.

4. This prohibition against retaliatory conduct applies regardless of the merits of the initial complaint of illegal discrimination.

The Office of Equal Employment Opportunity and Title IX shall have primary responsibility for publication, dissemination and implementation of this university policy.

Any person having inquiries concerning Wichita State University's compliance with the regulations implementing Title VI, Title IX, or Section 504 is directed to the Office of Equal Employment Opportunity, Wichita State University, 1845 Fairmount, Wichita KS 67260-0138; telephone (316) 978-3186. The Office of Equal Employment Opportunity has been designated by Wichita State to coordinate the institution's efforts to comply with the regulations implementing Title VI, Title IX, Section 504, and Americans with Disabilities Act. Any person also may contact the Assistant Secretary for Civil Rights, U.S. Department of Education, regarding the institution's compliance with these regulations.

A link to the WSU Undergraduate and Graduate Catalogs is available online at wichita.edu/catalog. Inquiries should be addressed to the Office of Disability Services for large print, Braille and audio tape versions.

## Offender Registry

Law enforcement agency information concerning registered sex offenders who are employed by or who are currently enrolled at Wichita State University may be obtained from the university police department. This information is made available to the campus community pursuant

to the requirements of the Campus Sex Crimes Prevention Act. Further information on any registered offender can be obtained from the Kansas Bureau of Investigation or the sheriff's office in the registrant's county of registration.

### Residency Requirements

See Residency Defined, page 19.

## Safety

Campus safety is a priority at Wichita State. The university campus is well lighted and parking lots are regularly patrolled by WSU police officers. WSU police and parking services personnel are available to escort students in the evenings. In case of emergencies, phones (designated by a blue light at the top of the pole) with direct access to the university police station are strategically placed around the campus.

More information about campus safety including links to emergency news and the option to opt in to Shocker*Alert* System emergency notifications can be found at: wichita.edu/safety.

The annual security and fire report is available at wichita.edu/annualsecurityreport. Review safety and crime prevention information in addition to daily crime logs and crime statistics at the police website, wichita.edu/police.

***University Behavioral Intervention Team.*** Wichita State cares about the health and safety of all members of the campus community. The University Behavioral Intervention Team applies a multidisciplinary approach to preventing individuals from harming themselves or others, and generally assisting persons in need. More information about the University Behavioral Intervention Team may be found at: wichita.edu/UBIT.

### Student Identification

See page 21.

## Title IX

Title IX of the Education Amendment of 1972 prohibits discrimination on the basis of sex in any federally funded education program or activity. Wichita State University does not discriminate on the basis of sex in educational programs or activities which it operates and has designated the following person to coordinate Wichita State University's efforts to comply with and carry out its institutional responsibilities under Title IX:

Natasha M. Stephens
Title IX Coordinator
1845 Fairmount Street
Wichita, KS 67260-0138
(316) 978-3186

Deputy and associate coordinators are designated for students, employees, visitors and athletics.

The entire policy including names and contact information is located online in section 20.24 of the *WSU Policies & Procedures Manual* at: wichita.edu/policiesprocedures.

# Institute for Interdisciplinary Creativity

**Richard Muma,** ***professor and associate vice president for academic affairs, interim coordinator***

**Rodney Miller,** ***professor and dean, College of Fine Arts, interim coordinator***
**(316) WSU-3010**
**wichita.edu/iic**

## Overview

The Institute for Interdisciplinary Creativity at Wichita State University (WSU) administers and supervises interdisciplinary degrees, certificates and other credentials (e.g., badges). The institute provides opportunities for faculty across campus to come together in a collaborative environment to develop/participate in academic programs and related research and creative projects in support of interdisciplinarity.

The primary goals of the Institute for Interdisciplinary Creativity are to encourage independent scholarship and to develop competence in collaborative research and creative activity. Students are expected to master special fields as well as to develop appropriate methods of inquiry for future professional growth.

## Program Representatives to the Institute

The Institute for Interdisciplinary Creativity works closely with individual program areas to ensure that program operations function in compliance with university policies and regulations. As part of this process, and on a voluntary basis, a faculty member can be recommended by his or her department chair to the institute director to serve as the program representative to the institute in matters of interdisciplinary education. Although the nature of responsibilities varies throughout program areas, they have a primary role in working with students and faculty in their academic programs. As a standard of expectation, program representatives are charged with the responsibility for overseeing the evaluation of applications for admission, and the transmittal of recommendations for admission, academic performance, degree completion and exceptions to graduate and undergraduate regulations. Program representatives also have a primary role in coordinating information between their programs and the institute office, working with their departmental chairs or other administrators in maintaining the quality and viability of their graduate programs, and serving as the local agent for the faculty in their program areas.

## Master of Innovation Design (MID)

The complexity of today's technology requires innovators from multiple disciplines to come together as a team and translate ideas into something transforming through nontraditional means. The Master in Innovation Design (MID) curriculum merges arts, science, and technology curricula, creating opportunities for students and faculty to collaborate across WSU's colleges. The MID program is individualized for each student and focuses on developing a student's design thinking skills. These include the capabilities to:

- Develop creative solutions;
- Effectively communicate;
- Practice entrepreneurship; and
- Develop prototypes.

The development of these capabilities is grounded in a research-based, academic curriculum. The program engages with businesses and focuses on innovation, product development, effective communication, flexibility and small business generation.

After completing the program, students should have developed a:

- Portfolio, patent application, process, or prototype;
- Willingness and ability to experiment with their ideas;
- Network of individuals and businesses with whom they can continue to collaborate; and
- Desire to continue to design solutions to problems they identify.

### Application Procedures

Applicants should forward the following to:

Graduate School
Wichita State University
1845 Fairmount
Wichita, KS 67260-0004

- Completed application for admission to Graduate School. Online application: wichita.edu/apply. Paper application: contact the Graduate School (316) 978-3095, gradinqu@wichita.edu, or from the forms section of the Graduate School website: wichita.edu/gradforms;
- Nonrefundable application fee; and
- Two official transcripts of all college-level academic work in sealed envelopes.

Applicants are given the opportunity to include in their application any credentials they believe represent their accomplishments and help explain why they wish to join the MID program. Additional application materials may include but are not limited to:

- Documentation of prior learning or experience relevant to design;
- Examples of prior design work in whatever format best showcases that work (e.g., a portfolio of artwork);
- A video of a performance;
- Links to software applications;
- Descriptions of products developed;
- Published articles or reports;
- A resume; and
- A personal essay.

A personal interview is scheduled with the admission committee if minimum qualifications are met as determined by Graduate School policy.

An admissions committee consisting of faculty from all of WSU's existing colleges reviews student applications. In reviewing applications, the admissions committee looks for the student's level of commitment to completing a master's degree, interest in learning design thinking skills, and whether there is a fit between the student's

goals and the resources of the MID faculty. If admitted, a faculty advisor is appointed to assist the student in developing a plan of study (see below). Deadlines for applications are as follows:

| | |
|---|---|
| Fall admission: | June 1 |
| Spring admission: | September 1 |
| Summer admission: | February 1 |

Questions regarding application procedures should be directed to:

Graduate School
Wichita State University
1845 Fairmount
Wichita KS 67260-0004
USA
(316) 978-3095
www.wichita.edu/gradschool

## Plan of Study Options

The MID degree requires the completion of a plan of study, approved by the student's advisor, which must be filed within the first 12 credit hours of graduate coursework. Two options are available:

- The thesis option requires a minimum of 27 hours of coursework plus a minimum of 6 hours of thesis; and
- The directed project option requires a minimum of 27 hours of coursework plus a minimum of 3 hours of directed project.

## Degree Requirements

The MID program consists of at least 30 (nonthesis option) to 33 (thesis option) credit hours including the following:

**FA 710. Seminar in Creativity and Innovation* (1–3).** As one of four core courses in the Master of Innovation Design, the purpose of this seminar is to help the student better understand and appreciate the subject of creativity. To that end, this course focuses on developing new ways of thinking which are different from those typically learned in single discipline design programs. The seminar provides many opportunities to apply these new ways of thinking through class exercises, possible course projects, and conversations with a wide array of guests who have prospered through the incorporation of creativity/innovation into what they do professionally. Students learn techniques for improving the flexibility and originality of their thinking and explore approaches used by others to create and sustain high levels of innovation. Topics include: personal thinking preferences, everyday creativity and eliminating mental blocks, creative thinking techniques, idea selection approaches, teaming techniques for creativity, conditions that promote creativity, design for interaction, disruptive technologies, and intellectual property. Seminar uses fun and hands-on activities to stimulate innovation. Repeatable for credit.

**COMM 662V. The Communication Entrepreneur* (3).** Special seminar dealing with current problems, issues or interests in various areas of communication. Repeatable for credit in different topics only. In this class, students read and discuss how to effectively communicate while starting a company. Students meet with entrepreneurs who have been both successful and unsuccessful communicators in their careers.

**ENTR/MKT 706. Seminar in New Product Development & Technology Development* (3).** Provides a form to the function of idea commercialization. Examines the product development practices of successful, innovative companies and focuses on how customer needs can be translated into products and innovations. Students explore idea generation, market validation, prototype development, product concept testing, product launch strategies, post launch product evaluation, and managing innovative teams. Students apply learning through developing and testing a product idea that solves a customer problem.

**Product, Service, and Process Prototyping*** (*Pending review and approval by faculty).* In this class, students focus on learning how to conceptualize and build theoretical and physical models that allow them to iteratively test their new product, service, and process ideas. The course is experiential, requiring students to learn by doing.

*These courses are required and align with the four *design thinking* capabilities–creativity, communication, entrepreneurship and prototyping.

### *Electives (12-18 hrs.)*

These courses are customized for each student in consultation with the student's advisors and based on the student's design goals. Courses are selected from existing WSU graduate courses. Some existing WSU graduate courses that relate to collaborative design include:

- Special Investigations in Psychology
- Human Factors Psychology
- Professional Practices in Graphic Design

***Major Project*** (3 hrs. for nonthesis option) or Thesis (6 hrs.)

Students have the option of completing a major project or a thesis.

- Completing a major project requires the development of a portfolio, patent application, process or prototype.
- Completing a thesis requires a thesis defense in accordance with WSU Graduate School policies.

Students also complete Professional and Scholarly Integrity Training (PSIT) and satisfy other general graduate degree requirements. An optional 0 credit hour practicum is available to allow students to network with other MID students and faculty. No internship is required.

# W. Frank Barton School of Business

**Anand S. Desai, *dean***
**100 Clinton Hall • (316) WSU-3200**
**wichita.edu/business**
James Clark, *associate dean*
Khawaja Asjad Saeed, *associate dean, graduate studies in business*

## Departments:

**Economics,** (316) 978-3220—Jen-Chi Cheng, *chairperson*
**Finance, Real Estate and Decision Sciences,** (316) 978-3219—Rick LeCompte, *chairperson*
**Management,** (316) 978-3214—John Perry, *chairperson*
**Marketing,** (316) 978-3367—Stephen Porter, *chairperson*
**School of Accountancy,** (316) 978-3215—Paul D. Harrison, *director*

## Graduate Faculty

**School of Accountancy**
*Professors*: Jeffrey J. Bryant, Paul D. Harrison (director), Jeffrey J. Quirin
*Associate Professor:* Atul Rai
*Assistant Professor:* Kurt F. Reding
*Lecturers:* Michael Flores (assistant director), Laura Zellers

**Economics**
*Professors*: Philip L. Hersch, William Miles, Martin M. Perline
*Associate Professors*: Jen-Chi Cheng (chairperson), Jodi Pelkowski
*Assistant Professor:* DaEun Jung
*Lecturers:* Michael Busch, Janet Wolcutt

**Finance, Real Estate and Decision Sciences**
*Professors:* Sue Abdinnour, Stanley D. Longhofer (director, Center for Real Estate), Khawaja Saeed
*Associate Professors:* Mehmet Barut, Rodney Boehme, Timothy Craft, Richard L.B. LeCompte (chairperson), Achita Muthitacharoen, Semih Tartaroglu
*Assistant Professor:* Jingjun Xu
*Senior Lecturer:* Larry Spurgeon

**Management**
*Professors:* Gaylen N. Chandler, Dharma deSilva (director, Center for International Business), Steve Farmer, Gerald H. Graham, James A. Wolff
*Associate Professors:* Chris Broberg, Masud Chand, Donald W. Hackett, Gergana Markova, John Perry (chairperson)

**Marketing**
*Professor:* Charles L. Martin
*Associate Professors:* Dean E. Headley, Stephen Porter (chairperson)

***Mission Statement:*** The Barton School of Business prepares students for lifelong learning and success in the global marketplace, advances the knowledge and practice of business, and supports economic growth through research, outreach and knowledge transfer. In pursuit of its mission, the school is committed to integrity, excellence and collegiality.

The *vision* of the Barton School of Business is to be internationally recognized as a model of research, knowledge transfer and applied business learning.

Consistent with the university's role as the Regents' urban serving research university, the Barton School aggressively pursues regional and national prominence for its academic and professional programs.

This mission is influenced by the location of the school in the largest economic and cultural center in the state of Kansas. As an integral part of the state's designated urban serving research university, the Barton School of Business faculty are committed to programs and activities that will help sustain the contribution that this urban center makes to the economic, professional and cultural health of the state and nation.

Within this context, the faculty of the school have adopted the following educational goals of the Barton School which are listed below under the headings of Students, Faculty and Programs. For each grouping, a preamble states the basic values of the Barton School faculty.

***Students:*** Students are the reason for the Barton School's existence. It is the faculty's responsibility to create programs and learning environments that ensure the ultimate success of students. We, the faculty, want our students to evaluate positively their Barton School experiences, both while enrolled in courses and afterwards.

Goals: To ensure that students completing Barton School programs possess skills that make them competitive with students from the best business programs in the region and to increase the quality and quantity of students.

***Faculty:*** Faculty are the means by which the university creates a learning environment. The quality of the faculty and the opportunities provided to faculty for continuous improvement are of paramount importance to the success of the Barton School.

Goal: To have faculty who are widely recognized for their commitment to students and scholarship.

***Programs:*** The programs offered by the Barton School link it to its multiple constituencies. The rich diversity of these programs reflects the university's unique urban mission.

Goal: To increase the recognition of the Barton School through relevant, competitive and up-to-date programs.

The school is accredited by AACSB-International—The Association to Advance Collegiate Schools of Business.

Graduate degree programs in the school lead to the Master of Business Administration (MBA), Executive Master of Business Administration (EMBA), Master of Accountancy (MACC), and the Master of Arts (MA) in economics, and to graduate certificates in enterprise systems and supply chain management, and entrepreneurship and innovation.

## Graduate Certificates Offered

***Enterprise Systems and Supply Chain Management***

This certificate is aimed at equipping students with a knowledge of key enterprise-level information technology systems and supply chain practices used by companies around the world. The courses are structured to provide extensive conceptual and applied information about enterprise-level systems and supply chain management. The curriculum is jointly offered by the decision sciences and MIS faculty in the School of Business and the industrial engineering faculty in the College of Engineering. This program requires satisfactory completion of four courses from the following list of courses, at least one course from both engineering and business is required:

*Business Courses*

| | |
|---|---|
| MIS 750 | Business Intelligence and Analytics |
| MIS 874 | Management Information Systems |
| DS 755 | Project Management |
| DS 850 | Operations Management |

*Engineering Courses*

| | |
|---|---|
| IME 764 | Systems Engineering & Analysis |
| IME 767 | Lean Manufacturing |
| IME 783 | Supply Chain Management |
| IME 825 | Enterprise Engineering |
| IME 883 | Supply Chain Engineering |

***Entrepreneurship and Innovation***

This certificate is aimed at providing students the knowledge base in entrepreneurship to undertake moving technological expertise or high potential business ideas through the start-up of high-growth businesses. The courses are designed to provide extensive conceptual and applied know-how and expertise to students interested in entrepreneurship. This program requires the completion of four of the following 3-hour courses. There are no prerequisite courses for the certificate program.

*Courses*

| | |
|---|---|
| ENTR 620 | Growing & Managing an Entrepreneurial Firm |
| ENTR 690 | Special Topics in Entrepreneurship |
| ENTR 705 | Technology Entrepreneurship |
| ENTR 706 | Seminar in New Product and Technology Development |
| ENTR 855 | Entrepreneurial Finance Seminar |
| ENTR 865 | Entrepreneurship, Creativity & Innovation |
| ENTR 869 | Corporate Entrepreneurship |
| ENTR 890 | Seminar in Special Topics |

# Master of Accountancy

The Master of Accountancy (MACC) program at Wichita State University is designed to prepare qualified candidates for careers as professional accountants in public practice, industry, government and nonprofit organizations. The program is based on strong preparation in general education courses with special emphasis on communication skills, and includes a broad exposure to the different aspects of business and management.

The School of Accountancy recognizes students may desire differing technical requirements to enter a diverse work environment. Two specialized concentrations are offered to complement the traditional emphasis: Accounting Information Systems (AIS) and Taxation.

## Admission Requirements

Full admission to the MACC professional curriculum requires:

1. An undergraduate degree in accounting, or the functional equivalent of an undergraduate degree in accounting from an AACSB-accredited institution.
2. An overall grade point average (GPA) of 3.200 on a 4.000 scale.
3. A grade of *B* (3.000) or better in all undergraduate accounting courses.

Applicants not meeting these criteria will be required to take the GMAT and obtain a satisfactory score. A satisfactory GMAT score is considered to be in the 25th percentile or higher for each section and for the overall score.

## Degree Requirements

### Students Possessing a Bachelor's Degree at Time of Admission

Total degree requirements for students granted admission after completion of a bachelor's degree will vary and depend upon the specific course content of the undergraduate degree program. At a minimum, the candidate's program must total 30 graduate-level credit hours beyond the bachelor's degree, including 15 credit hours of accounting courses numbered 800 or above and a total of 21 credit hours in courses numbered 800 or above.*

In general, an undergraduate degree in business and an accounting major, equivalent to that offered at WSU is presumed. The following courses, or their graduate equivalents, must be included as part of the MACC degree program if not covered in the student's bachelor's degree:

***Undergraduate Accounting/Business Curriculum***

| *Courses* | | *hrs.* |
|---|---|---|
| ACCT 210 | Financial Accounting | 3 |
| ACCT 220 | Managerial Accounting | 3 |
| ACCT 310 | Financial Accounting and Reporting: Assets | 3 |
| ACCT 320 | Accounting for Decision Making and Control | 3 |
| ACCT 410 | Financial Accounting and Reporting: Equities | 3 |
| ACCT 430 | Introduction to Federal Income Tax | 3 |
| ACCT 560 | Accounting Information Systems | 3 |
| ACCT 610 | Financial Accounting and Reporting: Special Entities and Complex Issues | 3 |
| ACCT 620 | Accounting for Strategic Support and Performance Evaluation | 3 |
| ACCT 630 | Taxation of Business Entities | 3 |
| ACCT 640 | Principles of Auditing | 3 |
| BADM 160 | Business Software | 3 |
| BLAW 431 | Legal Environment of Business *or* BLAW 635 Business Law for Accountants I *and* BLAW 636 Bus. Law for Accountants II | 3–6 |
| DS 350 | Introduction to Production & Operations Management | 3 |
| MIS 395 | Management Information Systems | 3 |
| ECON 201 | Principles of Macroeconomics | 3 |
| ECON 202 | Principles of Microeconomics | 3 |
| ECON 231 | Intro. Business Statistics | 3 |
| FIN 340 | Financial Management I | 3 |
| MGMT 360 | Principles of Management | 3 |
| IB 333 | International Business | 3 |
| MGMT 681 | Strategic Management | 3 |
| MKT 300 | Marketing | 3 |
| MATH 111 | College Algebra | 3 |
| MATH 144 | Business Calculus | 3 |

***Master of Accountancy Curriculum***

The following graduate-level coursework must be completed for a traditional MACC degree:

| *Courses* | | *hrs.* |
|---|---|---|
| ACCT 815 | Financial Accounting and Reporting: Contemporary Issues | 3 |
| ACCT 825 | Management Control Sys. | 3 |
| ACCT 835 | Tax Research and Selected Topics | 3 |
| ACCT 840 | Advanced Auditing | 3 |
| ACCT 860 | Advanced Accounting Information Systems | 3 |
| Graduate electives outside accounting* | | 9 |
| Other graduate electives (accounting or non-accounting)* | | 6 |

*Note*: all electives must be taken from within the Barton School of Business.

## Concentrations in Master of Accountancy Degree Program

### Accounting Information Systems

Students electing a concentration in accounting information systems (AIS) must take the following courses:

| *Courses* | *hrs.* |
|---|---|
| Accounting core courses (815, 825, 835, 840, 860) | 15 |
| Two 600- or 800-level MIS courses | 6 |
| Graduate electives, including 3 hours outside of accounting* | 9 |

*Note*: all electives must be taken from within the Barton School of Business.

### Taxation

Students electing a concentration in taxation must take the following courses:

| *Courses* | | *hrs.* |
|---|---|---|
| Accounting core courses (815, 825, 835, 840, 860) | | 15 |
| ACCT 830 | Taxation of Business Entities—Advanced Topics | 3 |
| ACCT 831 | Taxation of Estates and Trusts | 3 |
| Graduate electives, all outside of accounting* | | 9 |

*Note*: all electives must be taken from within the Barton School of Business.

*Electives must be selected to conform to AACSB standards for Master of Accountancy programs. MBA 800 and ACCT 801 are not eligible for the MACC elective credit. See the graduate coordinator of the School of Accountancy for more information.

## Master of Business Administration

The Barton School of Business offers the Master of Business Administration (MBA) through faculty in the accounting; economics; finance, real estate and decision sciences; management and marketing departments, as well as in other colleges of the university. The MBA program is designed to prepare men and women for responsible positions of professional leadership in business, government, health-related organizations and other institutions. The program concentrates on general management, with particular attention given to developing within the student an understanding of the organization as an integrated system. Areas of concentration are available for those students wishing to focus their elective coursework in a specialized area. Concentration areas currently available are finance, entrepreneurship and innovation, health care administration, and business analytics and information management.

Graduates of the WSU Master of Engineering Management (MEM) may be allowed to use up to 12 credit hours from the technical electives taken from the WSU MBA courses if they enroll in the Master of Business Administration program.

The total hours required of students and the level at which they begin participation in the MBA program depend on their academic preparation. Students without a background in business may be required to take up to 6 hours of undergraduate prerequisite coursework, and may also be required to complete up to 9 hours of graduate-level preparatory coursework that will count toward the degree. The total number of hours required for completion of an MBA therefore ranges from 36 to 45, depending on the student's background.

Classes are taken for graduate credit and all of the courses are offered in the evening.

## Admission Requirements

Admission to the MBA program is granted to students who show high promise of success in postgraduate business study and who hold bachelor's degrees from regionally accredited institutions.

Previous academic training in business is not required for admission to the MBA program. Students may have backgrounds in such diverse fields as engineering, liberal arts, education and health related areas. The specific content of a student's previous education is less important than the evidence that the student has sound scholarship, strong personal motivation, and the ability to develop the skills necessary to assume positions of leadership.

Admissions decisions are based on the following:

1. Graduate Management Admission Test/ Graduate Record Examination (GMAT/GRE) scores—overall score and component (i.e., verbal, quantitative and analytical writing) scores are evaluated. The GMAT/ GRE must have been taken within the last six years*;
2. Personal Goals essay that clearly articulates the applicant's reasons for seeking admission (500 words maximum);
3. Two reference forms completed by faculty, employer or suitable referee;
4. Current resume (career-based work experience is desirable but not required); and
5. International students are required to have a minimum score of 570 (paper-based), or 88 (Internet-based) on the Test of English as a Foreign Language, or an overall band score of 7.0 on the IELTS.

Final admission of qualified applicants may be based on space available in the MBA program.

Applications for degree admission are reviewed twice a year, in the fall and spring. Deadlines for submitting applications to the Graduate School are July 1 for consideration for fall admission and December 1 for spring admission. International applicants living outside the United States must submit their applications by April 1 for fall admission consideration and August 1 for spring admission consideration. Applicants who apply after these deadlines are considered in the order in which their completed application materials are received.

*GMAT exceptions: 3 years or more of managerial work experience, evaluated by the Office of Graduate Studies in Business; or WSU graduate with a GPA of 3.500 or higher in the last 60 hours; or business degree from an AACSB accredited school and a GPA of 3.500 or higher in the last 60 hours; or a U.S. master's degree or equivalent

## Degree Requirements

***Advanced Standing.*** Students with strong backgrounds in business administration may be granted advanced standing in the MBA program through equivalent credit for background preparatory courses for which a minimum grade of *C* was received in an undergraduate or graduate program. Most students entitled to such credit hold bachelor's degrees in business administration from accredited institutions.

Students may be granted equivalent credit for any or all of the preparatory courses, depending on the depth of their undergraduate or previous graduate preparation. The MBA program may consist of as few as 36 hours for students who have no deficiencies in prerequisites and who receive equivalent credit for all of the background fundamentals.

***Students Not Receiving Advanced Standing.*** Students with bachelor's degrees in nonbusiness fields usually will not have backgrounds warranting the granting of advanced standing through equivalency credit. There are some exceptions. Some students, for example, may have had enough coursework in economics or statistics to be granted credit for these courses. Determination regarding equivalency credit will be made following admission to the program. A minimum grade of *C* (2.000) or better is required for the prerequisites MATH 144 and ECON 231.

### *MEM to MBA Program*

Students completing the Master of Engineering Management (MEM) program at WSU may be allowed to use up to 12 credit hours (4 courses) in the Master of Business Administration (MBA) program at WSU if they pursue it (i.e., double-counting 12 credit hours between two programs). The 12 credit hours will be completed by the student as a requirement for the MEM program and should be taken from the required courses in the MBA curriculum. The main objective of making this change is to provide the opportunity to students to pursue dual degrees (MEM and MBA) and structure the curriculum so that both programs can be completed within a reasonable time frame. The double counting rule will allow students to complete both programs by taking 60 credit hours of coursework. The MEM program must be completed before any courses can be applied to the MBA program.

### *General MBA Course Requirements*

| *Prerequisites* * | | *hrs.* |
|---|---|---|
| MATH 144 | Business Calculus | 3 |
| ECON 231 | Intro. Business Statistics | 3 |
| *Preparatory Courses*** | | |
| MBA 800 | Fundamentals of Finance and Financial Analysis | 3 |
| MBA 801 | MBA Basics: Management and Marketing | 3 |
| ECON 800 | Analysis of Economic Theory | 3 |
| *Required Courses* | | |
| ACCT 801 | Managerial Accounting | 3 |
| BLAW 810 | Law and Ethics for Business | 3 |
| DS 850 | Operations Management | 3 |
| ECON 804 | Managerial Economics (taken within first two semesters of admission) | 3 |
| FIN 850 | Managerial Finance | 3 |
| IB 836 | International Business & Competitiveness | 3 |
| MGMT 803 | Business Decision Making and Analysis | |
| *or* MKT 803 | Marketing Analysis (taken within first two semesters of admission) | 3 |
| MGMT 862 | Organizational Behavior | 3 |
| MGMT 885 | Adv. Strategic Management (taken during last semester) | 3 |

| | | |
|---|---|---|
| MKT 801 | Marketing Management | 3 |
| MIS 874 | Management Info. Systems | 3 |
| Elective | 700-800 level only | 3 |

* These courses are to be taken only if a specific deficiency exists.
** With approval of the program director, equivalent credit may be granted for courses of equal content taken in an undergraduate or graduate program. See Advanced Standing section above.

## Policies

1. All incoming MBA students must attend an orientation session, which includes an introduction to the philosophy of graduate business education, development of networking skills, discussions about the history of the Barton School and the MBA program, and an overview of success strategies for MBA students. Only after completion of the orientation is a student considered for full standing in the MBA program.

2. A candidate's individual plan of study must be approved by the director and submitted to the Graduate School for final approval. This plan must be filed within a month of the completion of 12 hours of graduate work.

3. All candidates must complete 36 hours of 800-level courses including: ACCT 801, DS 850, ECON 804, FIN 850, MGMT 803 or MKT 803, MGMT 862, MGMT 885, MKT 801, MIS 874, IB 836, BLAW 810 and 3 hours of electives. The additional 3 hours of electives must be at the 700–800 level.

## Concentrations in the Master of Business Administration Degree Program

The MBA degree program is a general management degree equipping students with an understanding of organizations as integrated systems. Within the program the curriculum provides knowledge across organizational functions. Students may wish to focus their elective coursework in a specific area of study to enhance their general organizational knowledge base by selecting a concentration from the following options provided in the MBA program.

### MBA—Business Analytics and Information Management

The MBA with business analytics and information management concentration is designed to provide graduate students with knowledge and skills to effectively analyze large amounts of corporate data and information to support decision making and business performance management. This concentration aims to supplement the MBA core courses that discuss how managers and executives make their decisions in different business functions. To make such decisions, it is imperative that managers have the skills and knowledge to acquire appropriate information and transform it to actionable tactics and strategies. Applications of business analytics include but are not limited to, modeling the impact of advertising on sales, predicting stock returns based on historical data, differentiating among customers based on credit risk, and optimizing customer loyalty programs and inventory. The concentration will train managers to develop and maintain a culture of evidence/fact based decision making in the organization. The curriculum also aims to bridge the knowledge gaps between IT and non-IT workforces.

The following is a list of the required courses in common with the general MBA degree:

| *Required Courses* | | *hrs.* |
|---|---|---|
| ACCT 801 | Managerial Accounting | 3 |
| BLAW 810 | Law and Ethics for Business | 3 |
| DS 850 | Operations Management | 3 |
| ECON 804 | Managerial Economics (taken within first two semesters of admission) | 3 |
| FIN 850 | Managerial Finance | 3 |
| MGMT 803 | Business Decision Making and Analysis | |
| *or* MKT 803 | Marketing Analysis (taken within first two semesters of admission) | 3 |
| MGMT 862 | Organizational Behavior | 3 |
| MGMT 885 | Adv. Strategic Management (taken during last semester) | 3 |
| MKT 801 | Marketing Management | 3 |
| *Required for Concentration* | | |
| MIS 750 | Business Intelligence & Analy | 3 |
| MIS 874 | Management Information Sys. | 3 |
| MIS 884 | Database Planning & Mgmt. | 3 |

### MBA—Entrepreneurship & Innovation

The entrepreneurship and innovation concentration provides the foundation for developing one's own business, moving into a leadership role in a family business, or managing innovation and new business formation in a corporate setting. Building on the MBA curriculum, the entrepreneurship concentration enhances the ability to cope with the full range of issues in evaluating markets, developing business ideas and innovative business models, new product and process innovation, and commercializing technologies. The specialized knowledge helps students understand the business startup process and related managerial issues.

The following is the list of required courses in common with the general MBA:

| *Required Courses* | | *hrs.* |
|---|---|---|
| ACCT 801 | Managerial Accounting | 3 |
| BLAW 810 | Law and Ethics for Business | 3 |
| ECON 804 | Managerial Economics (taken within first two semesters of admission) | 3 |
| FIN 850 | Managerial Finance | 3 |
| IB 836 | International Bus. & Compet. | 3 |
| MGMT 803 | Business Decision Making and Analysis | |
| *or* MKT 803 | Marketing Analysis (taken within first two semesters of admission) | 3 |
| MGMT 862 | Organizational Behavior | 3 |
| MGMT 885 | Adv. Strategic Management (taken during last semester) | 3 |
| MKT 801 | Marketing Management | 3 |
| *Required for the Concentration* | | |
| ENTR 705 | Technology Entrepreneurship | 3 |
| ENTR 706 | Seminar in New Product & Technology Development | 3 |
| ENTR 865 | Entrepreneurship, Creativity & Innovation | |
| *or* ENTR 869 | Corporate Entrepreneurship | 3 |

### MBA—Finance

The MBA finance concentration provides students with the specialized knowledge necessary for understanding organizational financial management issues. The curriculum blends theory with applied business practice to prepare students for the varied activities involved in financial management issues. Students also gain experience with many different financial analysis tools that facilitate problem solving. Advanced courses involve cases and/or projects requiring computer modeling and analysis.

The following is a list of the required courses in common with the general MBA degree:

| *Required Courses* | | *hrs.* |
|---|---|---|
| ACCT 801 | Managerial Accounting | 3 |
| BLAW 810 | Law and Ethics for Business | 3 |
| DS 850 | Operations Management | 3 |
| ECON 804 | Managerial Economics (taken within first two semesters of admission) | 3 |
| MGMT 803 | Business Decision Making and Analysis | |
| *or* MKT 803 | Marketing Analysis (taken within first two semesters of admission) | 3 |
| MGMT 862 | Organizational Behavior | 3 |
| MGMT 885 | Adv. Strategic Management (taken during last semester) | 3 |
| MIS 874 | Management Info. Systems | 3 |
| MKT 801 | Marketing Management | 3 |
| *Required for Concentration* | | |
| FIN 850 | Managerial Finance | 3 |
| FIN 860 | Advanced Managerial Finance | 3 |
| FIN 865 | Adv. Investment Analysis & Portfolio Management | 3 |

### MBA—Health Care Administration

The health care administration concentration offers the opportunity to study business administration at the graduate level with particular emphasis on health care management. Building on the MBA curriculum, this concentration provides understanding and knowledge of the issues facing organizations in the health services industry. The specialized knowledge will help students cope with managerial processes in the dynamic health care industry.

| *Required Courses* | | *hrs.* |
|---|---|---|
| ACCT 801 | Managerial Accounting | 3 |
| BLAW 810 | Law and Ethics for Business | 3 |
| DS 850 | Operations Management | 3 |
| FIN 850 | Managerial Finance | 3 |
| MGMT 803 | Business Decision Making and Analysis | |

| | | |
|---|---|---|
| *or* MKT 803 | Marketing Analysis (taken within first two semesters of admission) | 3 |
| MGMT 862 | Organizational Behavior | 3 |
| MGMT 885 | Adv. Strategic Management (taken during last semester) | 3 |
| MIS 874 | Management Information Sys. | 3 |
| MKT 801 | Marketing Management | 3 |
| *Required for the Concentration* | | |
| PHS 812 | Health Care Policy and Administration | 3 |
| PHS 814 | Social and Behavioral Aspects of Public Health | 3 |
| PHS 833 | Health Economics | 3 |

# Executive Master of Business Administration

The Executive MBA program is the premier option for professionals to obtain the MBA credential while continuing to work. Designed to develop mid-career managers, executives and business owners, the EMBA program focuses on the needs of professionals. Completed in 20 months, meeting on select Saturdays, the program offers a distinctive approach and value for the working professional. The interactive, collaborative environment in which the curriculum is delivered and the personalized support provided are available only through the EMBA program.

The Executive MBA program curriculum includes insights into human behavior, proven analytical tools, strategic operational and financial management, innovative marketing concepts, and the latest in competitive technology. The program is administered through Barton School of Business faculty in the accounting; economics; finance, real estate and decision sciences; management and marketing departments.

## Admission Requirements

Admission to the EMBA is offered every two years. The next class will begin in fall of 2017. Good candidates for the Executive MBA program are individuals who are self-motivated and have the temperament to handle the demands of work, school and home and the willingness to make a 20-month commitment.

### Requirements:

1. Academic four-year undergraduate degree from a regionally accredited institution, not necessarily in business;
2. Minimum of five years relevant work experience, management experience is preferred;
3. Ability to participate in and contribute to an intensive learning environment;
4. Time and willingness to make a 20-month commitment to attend classes, study-group meetings and other required activities (including an international trip);
5. International students are required to have a minimum score of: 570 (paper-based), or 88 (internet-based) on the Test of English as a Foreign Language (TOEFL), or an overall band score of 7.0 on the IELTS examination.

### Application Process

Applications are accepted throughout the year on a first-come, first-served basis. Because only 24 students are admitted for each cohort, early application is encouraged. The deadline for application is June 1. For international applicants, the deadline is May 1 (Graduate School application materials are due by April 1).

Once all application materials are received, the required personal interview will be scheduled.

Executive MBA applicants must submit the following:

- EMBA Application (forms: A, B, C and D);
- Forms A and B are completed and signed by the applicant;
- Confidential Recommendation (Form C) two required;
- Acknowledgement of Responsibility (Form D) signed by employer/employee;
- Career and program essay that clearly articulates reasons for seeking admission;
- Current resume;
- Two official transcript copies mailed from each college attended; and
- A $75 application fee (nonrefundable) payable to WSU—EMBA.

## Degree Requirements

All students must complete 36 hours of coursework. Students progress through the program as a group.

### Executive MBA Course Requirements

| *Courses* | | *hrs.* |
|---|---|---|
| EMBA 800 | Decision Making & Analytics | 2.5 |
| EMBA 801 | Organizational Behavior | 2.5 |
| EMBA 802 | Strategic Marketing | 2.5 |
| EMBA 803 | Business Economics | 2.5 |
| EMBA 804 | Operations and Supply Chain Management | 2.5 |
| EMBA 805 | Global Business and Competitiveness for Exec | 3 |
| EMBA 806 | Financial Reporting & Analysis | 2.5 |
| EMBA 807 | Corporate Finance | 2.5 |
| EMBA 808 | Accounting for Planning and Control | 2.5 |
| EMBA 809 | Strategic Information Tech | 1.5 |
| EMBA 810 | Organizational Investment Strategies for Executives | 1.5 |
| EMBA 811 | Competitive Strategy | 2.5 |
| EMBA 812 | Bus. Law & Ethics for Execu. | 2.5 |
| EMBA 890 | Executive Seminar in Special Topics | 5 |

# Master of Arts in Economics

The department of economics presents a curriculum leading to the Master of Arts (MA) degree. Courses of study allow emphasis in one of three tracks: economic analysis, financial economics or international economics. All three seek to provide students with analytical skills useful in decision making and a broader understanding of the overall economic environment. Options provide as much flexibility as is compatible with the student's background and career interests.

The economic analysis sub-specialty is particularly suitable for students who wish to continue their studies in economics at the doctoral level. Financial economics includes coursework in financial management and areas related to money and capital markets, monetary policy, and financial and monetary institutions. It is particularly suited to those seeking employment in the financial sector. International economics is geared to those with an interest in the international economy, both from a business and policy perspective.

## Admission Criteria

1. Academic four-year undergraduate degree from a regionally accredited institution.
2. Admission based primarily on grade point average (GPA) and background in economics.
3. Admission to full standing requires a GPA of 2.750 on a 4.000 scale for the last 60 credit hours of coursework, and for all courses in economics and required mathematics.
4. Must have completed principles of macro- and microeconomics, plus one course in statistics and one in calculus. Additionally, students must have completed (or complete within one year of admission) intermediate level macro- and microeconomics. A minimum grade of C+ (2.300) or better is required for the two intermediate level classes as well as statistics and calculus.
5. The Graduate Record Examination (GRE) is not required.
6. Non-native speakers of English must have received 550 on the paper-based, or 79 on the Internet-based Test of English as a Foreign Language (TOEFL), or have an overall band score of 6.5 on the IELTS, or have attended another U.S. university as a full-time student enrolled in academic courses for a minimum of one year, or have earned a bachelor's degree (or higher) from a U.S. university within two years of their proposed semester of admission.

## Degree Requirements

All three tracks require either a thesis (30 credit hours) or an independent research project and an additional course in the student's area of interest (33 credit hours). The MA degree in economics is typically completed in four semesters, although completion in three semesters is not unusual. The graduate coordinator or the department chairperson must approve the candidate's plan of study. All plans of study must include at least 18 hours of graduate-level courses in economics or courses approved by the graduate coordinator. Courses identified as background fundamentals of the MBA program and other courses designated by the economics department may not be included in the hours required for the degree.

| | | |
|---|---|---|
| *Courses* | | *hrs.* |
| *Core Courses* | | *(15 hrs.)* |
| ECON 702 | Mathematical Methods in Economics | 3 |
| ECON 731 | Applied Econometrics I | 3 |
| ECON 801 | Macroeconomic Analysis | 3 |
| ECON 802 | Microeconomic Analysis | |
| *or* ECON 804 | Managerial Economics (option not available in economic analysis track) | 3 |
| ECON 803 | Analysis of Business Conditions and Forecasting | |
| *or* ECON 831 | Applied Econometrics II | 3 |

In all tracks, at least 70 percent of credit hours must be at the 700–800 level. (The remaining hours may be at the 500–600 level.)

### Economic Analysis Track

In addition to the core, a student must take either: Five additional courses in economics or related areas and a 3-hour research project (18 credit hours); *or* four additional courses in economics or related areas and 3 hours of thesis (15 credit hours).

### Financial Economics Track

| | | |
|---|---|---|
| FIN 850 | Managerial Finance | 3 |
| ECON 740 | Monetary Economics & Policy | 3 |

Three additional courses in economics or finance and a 3-hour research project (12 credit hours); *or* two additional courses in economics or finance that are track related and 3 hours of thesis (9 credit hours).

### International Economics Track

| | | |
|---|---|---|
| ECON 672 | International Economics and Business | 3 |
| ECON 674 | International Finance (cross-listed as FIN 625) | 3 |
| ECON 870 | International Finance and Investment | 3 |

Two additional economics/international related courses (such as the MBA course, International Business and Competitiveness) and a 3-hour research project (9 credit hours); or one additional economics/international course and 3 hours of thesis (6 credit hours).

## Accounting (ACCT)

*School of Accountancy*

#### Courses for Graduate/Undergraduate Credit

**ACCT 560. Accounting Information Systems (3).** A study of the content, design and controls of accounting systems, emphasizing the use of computers for processing financial data. Prerequisites: completion of ACCT 310, BADM 160, each with a grade of *C* (2.000) or better, advanced standing, junior standing.

**ACCT 610. Financial Accounting and Reporting: Special Entities and Complex Issues (3).** Examines accounting concepts and techniques related to consolidated statements, governmental and not-for-profit entities, and partnerships. Includes accounting for foreign currency, hedges, financial instruments and emerging issues in financial accounting and reporting. Prerequisites: completion of ACCT 410 with a grade of *C* (2.000) or better, advanced standing, junior standing.

**ACCT 620. Accounting for Strategic Support and Performance Evaluation (3).** The use of accounting information to assist management in developing and identifying superior strategies to produce and sustain comparative and/or competitive advantages. Focuses on goal-congruent strategies and incentives. Prerequisites: completion of ACCT 310, 320 with a grade of *C* (2.000) or better in each course, advanced standing, junior standing.

**ACCT 630. Taxation of Business Entities (3).** Studies the federal tax law as it applies to corporations, partnerships and other business entities. Examines the effect of taxation on business decisions. Prerequisites: completion of ACCT 430 with a grade of *C* (2.000) or better, advanced standing, junior standing.

**ACCT 640. Principles of Auditing (3).** A study of the auditor's attest function, emphasizing auditing standards and procedures, independence, legal responsibilities, codes of ethical conduct and evaluation of accounting systems and internal control. Prerequisites: completion of ACCT 410 and 560 with a grade of *C* (2.000) or better, advanced standing, junior standing.

**ACCT 690. Seminar in Selected Topics (1–3).** Repeatable for credit with School of Accountancy consent. Prerequisites: junior standing, advanced standing.

**ACCT 781. Cooperative Education (1).** Provides the graduate student with a field placement which integrates theory with a planned and supervised professional experience. Programs must be formulated in consultation with appropriate graduate faculty. May be repeated for credit up to 3 hours. May not be used to fulfill degree requirements. Graded *Cr/NCr*.

#### Courses for Graduate Students Only

*Where a course is indicated as a prerequisite to a second course, all prerequisites to the earlier course(s) also apply to the later course(s).*

**ACCT 801. Managerial Accounting (3).** Examines the use of accounting information to assist management in planning, analyzing and implementing business decisions and activities. Focuses on strategic and operational performance analysis and evaluation. This course is not available for credit in the Master of Accountancy program. Prerequisites: graduate standing and MBA 800 or equivalent, or permission of the School of Accountancy.

**ACCT 815. Financial Accounting and Reporting: Contemporary Issues (3).** Uses the case method and financial accounting databases to examine and analyze the application of generally accepted accounting principles to problems of measurement, presentation and disclosure in financial statements. Focuses on contemporary topics of interest in financial accounting and reporting. Prerequisites: graduate standing and ACCT 610 or equivalent, or permission of the School of Accountancy.

**ACCT 825. Management Control Systems (3).** Studies accounting in the context of management control systems. Focuses on how accounting interacts with management in achieving an organization's strategic and operational objectives. Emphasizes contemporary challenges in accounting, related to broadening the types of information captured, measured and reported. Prerequisites: graduate standing and ACCT 620 or 801 (or equivalent), or permission of the School of Accountancy.

**ACCT 830. Taxation of Business Entities—Advanced Topics (3).** Analyzes various advanced topics in the taxation of business planning. Focuses on the use of various entity forms to achieve optimal tax and business objectives. Also considers the tax consequences of conducting business internationally. Prerequisites: graduate standing and ACCT 630 or equivalent, or permission of the School of Accountancy.

**ACCT 831. Taxation of Estates and Trusts (3).** Studies the income taxation of trusts and estates, including the special cases of grantor and split-interest trusts. Examines the gift taxation of donors, the estate taxation of decedents, and the fundamentals of estate planning. Prerequisites: graduate standing and ACCT 430 or equivalent, or permission of the School of Accountancy.

**ACCT 835. Tax Research and Selected Topics (3).** An in-depth study of traditional and computerized tax research and planning techniques, ethical issues, tax practice issues, and an introduction to state, multistate and international taxation. Prerequisites: graduate standing and ACCT 630 (or equivalent), or permission of the School of Accountancy.

**ACCT 840. Advanced Auditing (3).** An advanced study of auditing emphasizing auditing computerized systems, statistical sampling and ethics. Prerequisites: graduate standing and ACCT 410, 640 (or equivalent), or permission of the School of Accountancy.

**ACCT 860. Advanced Accounting Information Systems (3).** A study of the concepts of information systems, their design and operation, and the relationship of these concepts to the economic information requirements, information flows, decision criteria and control mechanisms in the business organization. Prerequisites: graduate standing and ACCT 560 (or equivalent), or permission of the School of Accountancy.

**ACCT 890. Seminar in Special Topics (1–3).** Repeatable with permission of the School of Accountancy.

**ACCT 891. Directed Study in Accounting (1–3).** Prerequisite: School of Accountancy consent.

**ACCT 892. Internship in Accounting (3).** Graded *S/U*. Prerequisites: 3.000 GPA in accounting, graduate standing, School of Accountancy consent.

## Business Law (BLAW)

*Department of Finance, Real Estate & Decision Sciences*

#### Courses for Graduate/Undergraduate Credit

**BLAW 602. Legal Environment of International Business (3).** Cross-listed as IB 602. Analysis of legal and regulatory issues affecting import-export transactions, licensing and technology transfer, and international sales of services. Prerequisites: IB 333, junior standing, advanced standing.

**BLAW 635. Business Law for Accountants I (3).** Law of contracts, bailments, sales, commercial paper and secured transactions. Centers on the Uniform Commercial Code. Prerequisites: junior standing, advanced standing.

**BLAW 636. Business Law for Accountants II (3).** Law of agency, partnerships and corporations. Considers the organizational and relational aspects of both small, closely held businesses and large corporate enterprises. Prerequisites: junior standing, advanced standing.

**BLAW 690. Seminar in Selected Topics (1–5).** Repeatable with departmental consent. Prerequisites: junior standing, advanced standing.

### Courses for Graduate Students Only

**BLAW 810. Law and Ethics for Business (3).** An understanding of the foundational principles of the legal system and the laws that impact business is essential to the business leader. Course provides an overview of the legal system and dispute resolution procedures, and covers specific legal topics of particular importance to business leaders, including contracts, torts, constitutional law, product liability, intellectual property, employment law, business entities and business regulation. It introduces students to ethical decision making processes, the major philosophical traditions in ethical theory, as well as principles of corporate governance, corporate responsibility and sustainability. The focus is on stimulating analytical thinking and class discussion about how to apply ethical principles to practical business situations.

**BLAW 890. Seminar in Special Topics (1–3).** Repeatable with departmental consent.

## Decision Sciences (DS)

*Department of Finance, Real Estate & Decision Sciences*

### Courses for Graduate/Undergraduate Credit

**DS 660. Enterprise Systems (3).** Introduces the underlying need for integration in organizations that have traditionally operated with fragmented information systems. The focus is on ERP (enterprise resource planning) systems, but other e-commerce systems are discussed. Includes an overview of ERP systems, business processes and implementation issues. Covers relevant software packages. Not open to students with credit in DS 860. Prerequisites: DS 350 with a grade of *C+* (2.300) or better, junior standing, advanced standing.

**DS 665. Supply Chain Management (3).** Emphasizing global integration and coordination, this introductory course delivers the basic concepts and decision-making models critical to managing a global supply chain. Topics covered include supply chain design and operation, logistics strategies and network configuration, inventory management and risk pooling, the role of information technology in the supply chain, warehousing and material handling systems, supplier relations, and strategic alliances. Not open to students with credit in DS 865. Prerequisites: DS 350 with a grade of *C+* (2.300) or better, junior standing, advanced standing.

**DS 675. Spreadsheet Modeling for Decision Making (3).** Cross-listed as FIN 675. Adopts a practical spreadsheet-based approach to the modeling of a wide variety of business problems. Concentrates on problem solving in an interdisciplinary context and developing spreadsheet skills. Not open to students with credit in DS 875 or FIN 675. Prerequisites: DS 350 and FIN 340 each with a grade of *C+* (2.300) or better, junior standing, advanced standing.

**DS 690. Seminar in Selected Topics (1–5).** Repeatable with departmental consent. Prerequisites: DS 350 with a grade of *C+* (2.300) or better, junior standing, advanced standing.

**DS 750. Workshop in Decision Sciences (1–4).** Prerequisite: junior standing.

**DS 755. Project Management (3).** This hands-on and project-based technology course establishes fundamental guidelines for defining the process of project management and designing time-constrained projects. Covers core methodology for managing complex projects on time. Uses a software tool. Prerequisites: junior standing, advanced standing; students are strongly recommended to take DS 350 before taking DS 755.

### Courses for Graduate Students Only

**DS 850. Operations Management (3).** Develops an understanding of the operations function in a business and how it interfaces with other major functions in business. Students gain an appreciation of the strategic importance of operations and how a firm can gain competitive advantage through world-class performance by operations in delivering high-quality, cost-competitive products and services. Builds a knowledge base of the concepts, tools and techniques related to designing, managing and improving operations. Helps managers, regardless of functional specialization, gain an operations perspective. Prerequisites: calculus and statistics.

**DS 890. Seminar in Special Topics (1–3).** Repeatable with departmental consent.

**DS 891. Directed Studies (1–5).** Prerequisite: departmental consent.

## Economics (ECON)

*Department of Economics*

### Courses for Graduate/Undergraduate Credit

**ECON 570. International Political Economy (3).** Cross-listed as POLS 570. Examination of policy decisions regarding exchanges of trade, money and labor that span national boundaries. Studies the interaction of politics and economics at the international level, as well as the modern history of the global economy. Economics often studies the material benefits and costs of different policies. Political science asks why these policies exist in the first place with a focus on who gets the benefits, who pays the costs, and how decisions about allocating benefits and costs are made. *Course includes diversity content.*

**ECON 611. Economics of Sports (3).** Inquiry into the economic aspects of professional and intercollegiate sports. Includes industrial organization of sports, public finance of sports, and the labor economics of sports, as well as the unique competitive nature of the sports enterprise. Not applicable toward the MA in economics. Prerequisite: junior standing.

**ECON 627. Economic History of the United States (3).** Cross-listed as HIST 515. Analysis of the basic factors in economic growth. Explores agriculture, trade and commerce, industrial development and the changing role of the government in economic activity. Prerequisites: ECON 201 and junior standing.

**ECON 660. Labor Economics (3).** Introduction to labor economics surveying both theoretical and empirical research in this field. Includes labor markets, wage determination and human capital theory. *Course includes diversity content.* Prerequisites: for undergraduate students, ECON 201, 202, junior standing; for graduate students, the equivalent of ECON 201, 202.

**ECON 663. Economic Insecurity (3).** Cross-listed as AGE 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. *Course includes diversity content.* Prerequisites: for undergraduate students, ECON 201, 202, junior standing; for graduate students, the equivalent of ECON 201, 202.

**ECON 672. International Economics and Business (3).** Cross-listed as IB 561. A survey of the economic foundations of international trade, finance and investment. Includes foreign exchange markets, regional integration, trade theories and instruments, U.S. trade policies and treaties, multinational companies, immigration, as well as differences in cultural, political and economic systems. Includes current events. *Course includes diversity content.* Prerequisites: for undergraduate students, ECON 201, 202, junior standing; for graduate students, the equivalent of ECON 201, 202.

**ECON 674. International Finance (3).** Cross-listed as FIN 625 and IB 625. A study of the international financial and monetary system, emphasizing currency markets. Examines market instruments and techniques, including synthetic and derivative securities and their application to management of currency risk in international trade and finance. Prerequisites: for undergraduate students, ECON 201, 202, FIN 340 with a grade of *C+* (2.300) or better, junior standing; for graduate students, the equivalent of ECON 201, 202.

**ECON 688. Urban Economics (3).** Cross-listed as PADM 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: for undergraduate students, ECON 201, 202, junior standing; for graduate students, the equivalent of ECON 201, 202.

**ECON 692. Group Studies in Economics (1–3).** Repeatable for credit with departmental consent. Prerequisites: for undergraduate students, ECON 201, 202, junior standing; for graduate students, the equivalent of ECON 201, 202.

**ECON 702. Mathematical Methods in Economics (3).** Introduces mathematical tools that are especially useful in economics, econometrics and finance. Includes a review of differential and integral calculus, an introduction to matrix algebra, and various constrained optimization and economic modeling techniques. Emphasizes economic applications and modeling. Prerequisites: for undergraduate students, calculus, ECON 201, 202, junior standing; for graduate students, calculus and the equivalent of ECON 201, 202.

**ECON 731. Applied Econometrics I (3).** Studies regression techniques through business, finance and economics examples. Reviews the fundamentals of statistics and covers practical model building, data collection, use of statistical software packages, interpretation of regression results and various diagnostic tests. Prerequisites: for undergraduate students, ECON 201, 202, 231 each with a grade of *C+* (2.300) or better, junior standing; for graduate students, the equivalent of ECON 201, 202, 231 each with a grade of *C+* (2.300) or better.

**ECON 740. Monetary Economics and Policy (3).** A study of monetary theory and policy. Analyzes historical and contemporary monetary issues using macroeconomic theories and empirical studies. Prerequisites: ECON 340, junior standing.

**ECON 750. Workshop in Economics (1–3).** Prerequisites: for undergraduate students, ECON 201, 202, junior standing; for graduate students, the equivalent of ECON 201, 202.

**ECON 765. Public Sector Economics (3).** Cross-listed as PADM 765. Examination of theories of economic decision making and institutions, with a focus on how economic tools can be used to inform policy and management in the public and nonprofit sectors. Covers economic principles and discusses market failures and public policies intended to correct or alleviate market

failure. Economic decision making tools for public and nonprofit management are also introduced.

**ECON 781. Cooperative Education (1).** Provides the graduate student with a field placement which integrates theory with a planned and supervised professional experience. Programs must be formulated in consultation with appropriate graduate faculty. May be repeated for credit up to 3 hours. May not be used to fulfill degree requirements. Graded *Cr/NCr*.

### Courses for Graduate Students Only

**ECON 800. Analysis of Economic Theory (3).** An intensive analysis of micro- and macroeconomic principles. Not for graduate credit in the MA program in economics. Prerequisite: departmental consent.

**ECON 801. Macroeconomic Analysis (3).** An in-depth examination of contemporary macroeconomic theories. Includes economic growth, short run classical and Keynesian theories of fluctuations, real business cycle theory, inflation, monetary policy, and new classical and new Keynesian theories. Prerequisite: calculus and ECON 301.

**ECON 802. Microeconomic Analysis (3).** An analysis of the consumer, the firm, and competitive and noncompetitive markets using mathematical models. Prerequisites: ECON 302, 702.

**ECON 803. Analysis of Business Conditions and Forecasting (3).** Intensive study of research methodologies and forecasting for real life business decision making. Covers formulation of research questions, specification of models, collection of time series and survey data, applications of forecasting techniques, and interpretation and communication of the results. Prerequisite: ECON 731 or instructor's consent.

**ECON 804. Managerial Economics (3).** A survey of theoretical and analytical tools of economics that are useful in decision making by managers. Prerequisites: ECON 201, 202, or 800; one course in statistics; one course in calculus.

**ECON 831. Applied Econometrics II (3).** Introduces the maximum likelihood estimation and the methods of moments estimation technique. Covers SUR, panel data, simultaneous equations, VAR and ARCH/GARCH models. Emphasizes the time series model building practiced in finance and macroeconomics. Prerequisites: ECON 702, 731 or equivalent.

**ECON 865. State and Local Government Finance (3).** Analyzes state and local government expenditure and revenue systems, introduces state and local financial administration. Students must complete computational work requiring at least an intermediate level of competence using spreadsheet software such as Excel. Prerequisite: ECON 765 or instructor's consent.

**ECON 870. International Finance and Investment (3).** A case study of the contemporary and business-related issues of international finance and investment. Includes foreign exchange markets, European integration, international trade organizations and monetary systems, and emerging markets. Prerequisite: one of the following courses: ECON 731 and 672 (IB 561) or ECON 674 (FIN 625).

**ECON 891. Directed Study (1–3).** Individual study of various aspects and problems of economics. Repeatable for credit with departmental consent. Prerequisites: graduate standing and departmental consent.

**ECON 892. Group Studies in Economics (1–3).** Repeatable for credit. Prerequisite: departmental consent.

**ECON 896. Thesis (1–3).**

**ECON 897. Project Completion (1).** Designed for students who need additional time to complete either their directed study project or thesis. *S/U* only. Prerequisite: ECON 891 or 896.

## Entrepreneurship (ENTR)

*Department of Management*

### Courses for Graduate/Undergraduate Credit

**ENTR 604. Franchise Management (3).** Examines franchising from both the perspective of the entrepreneur as a franchisee and as a franchisor. The student learns to evaluate a franchising opportunity from the franchisee perspective by completing a feasibility study of a currently available franchise and the potential for franchising. Areas covered include selecting a franchise, developing a franchised model and the legal issues associated with a franchise business. Prerequisite: junior standing.

**ENTR 605. Technology Entrepreneurship (3).** The innovative transformation of ideas and technical knowledge (intellectual property) into commercially useful applications is a key driver of economic development. Students are immersed in the process of moving intellectual property from *mind to market*. Technology commercialization concepts, tools and techniques are applied to active technologies from university research, students, community and national research lab sources. Students evaluate the potential for intellectual property to be the basis for a startup enterprise or licensed to an existing business. Prerequisite: junior standing.

**ENTR 608. Selling and Sales Force Management (3).** Cross-listed as MKT 608. Analysis of current behavioral concepts of personal selling and the problems and policies involved in managing a sales force. Prerequisites: MKT 300 with a grade of *C+* (2.300) or better, MKT 405.

**ENTR 610. Short-Term Financial Management (3).** An introduction to short-term financial management. Includes bank balances, compensation and payment systems, cash management systems, corporate liquidity, receivables and payables management, inventories, and international short-term finance. Prerequisites: FIN 340, junior standing, advanced standing.

**ENTR 620. Growing and Managing an Entrepreneurial Firm (3).** Focuses on the organization, operation, marketing and financial management of an ongoing entrepreneurial firm. Emphasizes the strategic management of growth associated with a rapidly changing business, as distinguished from small business management, which could include small enterprise units that are static. Teaches the practical aspects of managing a growing business on a day-to-day basis. Practical application to *intrapreneurship*, such as growing a division or department within a larger organization. Prerequisites: ENTR 310, and junior standing or instructor's consent, advanced standing.

**ENTR 690. Special Topics in Entrepreneurship (3).** Advanced course with in-depth study of emerging topics in entrepreneurship. Repeatable with instructor's consent. Prerequisites: ENTR 310, junior standing or instructor's consent, advanced standing.

**ENTR 705. Technology Entrepreneurship (3).** Students explore issues surrounding the transformation of knowledge into commercially useful products, services and viable businesses. Course employs a hands-on experiential approach using current active technologies from the university, community or national research laboratories. Market validation, opportunity recognition, intellectual property protection (patents, copyright, trade secrets) and valuation are core learning elements employed in the commercial-potential evaluation process. Evaluation documents produced in the course are provided to intellectual property owners to aid moving a technology into commercial markets. Prerequisite: junior standing.

**ENTR 706. Seminar in New Product and Technology Development (3).** Cross-listed as MKT 706. Provides a form to the function of idea commercialization. Examines the product development practices of successful, innovative companies and focuses on how customer needs can be translated into products and innovations. Students explore idea generation, market validation, prototype development, product concept testing, product launch strategies, post launch product evaluation, and managing innovative teams. Students apply learning through developing and testing a product idea that solves a customer problem.

**ENTR 750. Workshop in Entrepreneurship (1–4).** Prerequisite: junior standing.

### Courses for Graduate Students Only

**ENTR 855. Entrepreneurial Finance Seminar (3).** Looks in depth at the financial side of starting, maintaining and (perhaps) ultimately, exiting a small and/or new business venture. Begins with an overview of the entrepreneurial process, highlighting the importance of finance in the many facets of running a business. Topics include: the measure and evaluation of financial performance, consideration of the various sources of capital available to companies, valuation of business ventures and associated securities laws, venture capital, and the options available for exiting a business.

**ENTR 865. Entrepreneurship, Creativity and Innovation (3).** Students learn how to use their unique mix of knowledge, talents, skills, abilities and resources to develop a value proposition for potential customers. Course has two major components. The first is ideation. Initially, it focuses on identifying problems and developing solutions. This requires students to improve their creative problem solving skills. Students then learn how to systematically evaluate business ideas and develop functional business models. Students interact with MID faculty, other students, creative professionals and entrepreneurs in a seminar format. Repeatable for credit.

**ENTR 868. Seminar in New Venture Development (3).** Focuses on the conceptualization and development of viable business models that can be applied to new start-ups, acquisitions of existing businesses, or expanding existing businesses into new products/services or new markets. There is a heavy emphasis on clearly identifying the customer value proposition, organization of an infrastructure to deliver the value proposition, and the development of customer relationships appropriate for the value proposition. It includes preliminary validation of the business model, construction of appropriate financial structures, and income stream projections.

**ENTR 869. Corporate Entrepreneurship (3).** Addresses trends, current status and success factors in the area of innovation and entrepreneurship within organizations. Examines principles applicable to any organization, large or small, private or public, by those people who wish to create change and innovate within the existing structure. Covers (1) foundations of entrepreneurship; (2) barriers to change; (3) entrepreneurial characteristics of individuals; (4) creative thinking and forced ideation methods; (5) corporate entrepreneurship—the need for it, definition, methods, favorable environment and rewards; (6) examples of corporate entrepreneurship;

(7) entrepreneurial strategies, policies and practices for organizations; and (8) the entrepreneurial society, a growing way of life.

**ENTR 890. Seminar in Special Topics (1–3).** Repeatable with instructor's consent.

**ENTR 891. Directed Studies (1–5).** Prerequisite: instructor's consent.

# Executive Master of Business Administration (EMBA)

*Graduate Studies in Business*

### Courses for Graduate Students Only

**EMBA 800. Decision Making and Analytics (2.5).** Focuses on critical evaluation of the nature of business problems and opportunities in ways that allow data-driven decision making. This includes problem discovery and framing, data exploration using descriptive techniques, and inferential analysis using parametric (e.g., t-tests, correlation, regression) and nonparametric techniques. It also emphasizes appropriate communication of data. Prerequisite: admission to EMBA program.

**EMBA 801. Organizational Behavior (2.5).** Examines leadership styles, power, authority, motivations, communications and their impact on human behavior. Includes organizational learning, team building, participative management, transformational leadership, managing diversity, conflict management, network organizations, organizational change and re-engineering. Prerequisite: admission to EMBA program.

**EMBA 802. Strategic Marketing (2.5).** Focuses on strategic marketing analysis, planning, integration and implementation. Designed to prepare middle, senior and executive-level leaders to make effective marketing decisions and is taught using the case-study method. Introduces key principles and processes for the development of effective integrated marketing programs aligned with organizational strategy. Prerequisite: admission to EMBA program.

**EMBA 803. Business Economics (2.5).** Focuses on the elements of economics that are most useful for middle- and upper-level managers. Covers the basic concept of a market (demand and supply), the internal operations of the firm (production, cost structures, internal organization and pricing policies), and the micro environment of the firm (competitive market structures and government regulation). Prerequisite: admission to EMBA program.

**EMBA 804. Operations and Supply Chain Management (2.5).** Provides a fundamental understanding of manufacturing and service operations and their role in the organization, along with other functions like sales, finance, etc. An overview of a range of topics including operations strategy, capacity planning, quality management, lean, inventory management, and forecasting. Special emphasis is placed on the conceptual frameworks and modeling tools used to implement improvements in business processes. Also highlights the use of analytics in operations and supply chain management. Prerequisite: admission to EMBA program.

**EMBA 805. Global Business and Competitiveness for Executives (3).** Focuses on applications of economic analysis to international business decisions, international and macroeconomic components, understanding the implications of macro policies and developments for the firm's business environment, expansions into foreign markets, foreign investment and the relevance of global changes in technology and labor productivity, and foreign exchange, balance of payments, and trade policy issues. Prerequisite: admission to EMBA program.

**EMBA 806. Financial Reporting and Analysis (2.5).** Studies the fundamental concepts of financial accounting and reporting by business entities in accordance with generally accepted accounting principles. Approaches the material from the perspective of the financial statement user rather than the financial statement preparer. Therefore, emphasis is placed on the use and interpretation of information contained in business financial statements by managers, investors and creditors. Prerequisite: admission to EMBA program.

**EMBA 807. Corporate Finance (2.5).** Covers the foundations of finance with an emphasis on applications that are vital for corporate managers. An overview of basic financial analysis. Considers the major financial decisions made by corporate managers. Essential in most of these decisions is the process of valuation, which is an important course emphasis. Topics include criteria for making investment decisions, valuation of financial assets, relationships between risk and return, risk management, and capital structure choice. Course goals are to examine the role of finance in supporting the functional areas of a firm and to foster an understanding of how financial decisions themselves can create value. Prerequisite: admission to EMBA program.

**EMBA 808. Accounting for Planning and Control (2.5).** Introduces students to modern tools and techniques designed to generate performance measures used for decision making, management and control purposes. Accounting information is used for a variety of managerial decisions such as product pricing and profitability analysis. Illustrates how performance measures are integrated into management control systems so as to align the objectives of (division) managers with those of the shareholders. Key building blocks of such systems are cost allocations, transfer pricing and compensation schemes. Illustrates the strengths and weaknesses of commonly-used performance metrics such as the Balanced Scorecard. Prerequisite: admission to EMBA program.

**EMBA 809. Strategic Information Technology (1.5).** Explores how to successfully incorporate information technology into organizations to support business model innovation, business process innovation, and management decision making. Course goals are to equip managers with the understanding of how information technology can be used for value creation and sustainable competitive advantage. Prerequisite: admission to EMBA program.

**EMBA 810. Organizational Investment Strategies for Executives (1.5).** Focuses on strategic investment and risk management building on the valuation, decision-making tools and analytics developed in the corporate finance and accounting modules. Portfolio management, valuation, asset allocation, security selection and performance assessment are addressed from a theoretical and practical hands-on portfolio project. Risk management using options and derivatives are also integral parts of the course. Prerequisite: admission to EMBA program.

**EMBA 811. Competitive Strategy (2.5).** Integrates the other courses in the program by addressing the strategic management of an organization. Focuses on the factors surrounding achieving and sustaining competitive advantage in the business unit and extending competitive advantage across business units. Strategy is discussed in terms of how to create maximum value for customers and to capture as much of that value as possible for growing and sustaining the organization. Prerequisite: admission to EMBA program.

**EMBA 812. Business Law and Ethics for Executives (2.5).** Stimulates critical thinking about the application of law and ethics in business. Provides an overview of the legal system and dispute resolution procedures. Covers specific legal topics of particular importance to business leaders including contracts, torts, constitutional law, product liability, intellectual property, employment law, business entities and business regulation. Introduces students to ethical decision making processes, the major philosophical traditions in ethical theory, as well as principles of corporate governance, corporate responsibility, and sustainability. Focuses on stimulating analytical thinking and class discussion about how to apply ethical principles to practical business situations. Prerequisite: admission to EMBA program.

**EMBA 890. Executive Seminar in Special Topics (1–3).** Repeatable for credit. Prerequisite: admission to EMBA program.

# Finance (FIN)

*Department of Finance, Real Estate & Decision Sciences*

### Courses for Graduate/Undergraduate Credit

**FIN 610. Insurance and Risk Management (3).** Covers the concepts of insurance and risk management. Topics include risk identification and analysis, risk management, legal aspects of insurance, structure of the insurance industry, regulation, reinsurance, underwriting, financial issues and analysis, policy analysis, and an overview of many types of personal and commercial insurance including: automobile, homeowner's, property and casualty, umbrella, commercial general liability, errors and omissions, directors and officers, health insurance (including traditional indemnity, HMO and PPO), disability, long-term care and life. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**FIN 611. Real Estate Finance (3).** Cross-listed as RE 611. Covers the institutions and instruments used to finance residential and commercial properties, and provides essential knowledge and skills for students who are interested in a career as a commercial banker, mortgage banker or an analyst or investor in mortgage-related securities. Topics include fixed-rate and alternative mortgage instruments, financial analysis and decision making, residential mortgage underwriting, mortgage market regulations, primary and secondary mortgage market structure and institutions, and mortgage-backed securities. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**FIN 618. Real Estate Investment Analysis (3).** Cross-listed as RE 618. Covers the tools and techniques used to evaluate the financial profitability of real estate investments, as well as real estate decisions affecting businesses. Students learn about discounted cash flow analysis of real estate, the relative advantages of different ownership structures, tax treatment of real estate investments and the effects of leverage. In addition, topics such as lease-versus-own analysis, sale-leasebacks and other corporate real estate issues are discussed. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**FIN 620. Investments (3).** An analysis of investment risks, financial information and industry characteristics. Examines corporate, government, municipal and financial institution securities and other investment types.

Presents personal portfolio construction, supervision and management. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**FIN 622. Futures and Options Markets (3).** Presents an overview of the futures and options markets. Discusses basic theoretical concepts as well as the practical issues of hedging and speculating in these markets. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**FIN 625. International Financial Management (3).** Cross-listed as ECON 674 and IB 625. A study of the international financial and monetary system, emphasizing currency markets. Also examines market instruments and techniques, including synthetic and derivative securities and their application to management of currency risk in international trade and finance. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**FIN 631. Fixed Income Securities and Markets (3).** An analysis of the market for fixed-income securities from the investor's point of view. Emphasizes pricing of these securities and an understanding of the factors that determine the structure and level of interest rates. Portfolio management techniques and the use of derivatives are also covered. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**FIN 632. Bank and Financial Institution Management (3).** Presents and analyzes asset and liability management by banks and financial institutions. Also covers financial institution structure, management, regulation, and operations. Covers risk management topics in detail. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**FIN 660. Cases in Finance (3).** This case-centered course is designed as the capstone course for the finance major and provides an exploration of the problems and operations for which the financial decision maker is responsible, emphasizing current best practices for various types of financial analyses. Should be taken at the end of a finance student's degree program. Prerequisites: FIN 440 and two 600-level finance electives with a grade of *C*+ (2.300) or better in each, junior standing, advanced standing.

**FIN 675. Spreadsheet Modeling for Decision Making (3).** Cross-listed as DS 675. A practical spreadsheet-based approach to the modeling of a wide variety of business problems. Concentrates on problem solving in an interdisciplinary context and developing spreadsheet skills. Not open to students with credit in DS 675 or 875. Prerequisites: DS 350 and FIN 340 each with a grade of *C*+ (2.300) or better, junior standing, advanced standing, or instructor's consent.

**FIN 690. Seminar in Selected Topics (1–5).** Repeatable with departmental consent. Prerequisites: FIN 340, junior standing, advanced standing.

**FIN 750. Workshop in Finance (1–4).** Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing.

### Courses for Graduate Students Only

**FIN 850. Managerial Finance (3).** Provides knowledge and tools to make informed investment and financing decisions. Includes capital markets, capital budgeting, decision making under uncertainty, asset pricing models, capital structure, payout policy, restructuring and corporate control issues. Prerequisite: MBA 800 or equivalent.

**FIN 860. Advanced Managerial Finance (3).** Study of advanced strategic issues that impact financial managers. Includes corporate valuation, working capital management, capital structure decisions such as initial public offerings, leveraged buyouts, restructurings, mergers and acquisitions, and issues related to entrepreneurial finance. Prerequisite: FIN 850.

**FIN 865. Advanced Investment Analysis and Portfolio Management (3).** Study of the theory and practice of security valuation and investment management. Includes portfolio analysis, asset allocation, fixed income securities and term structure, equity analysis, derivatives and measurement of performance. Prerequisite: FIN 850.

**FIN 866. Public Financial Management (3).** Cross-listed as PADM 866. Deals with selected aspects of state and local government financial management. Introduces fund accounting, costing government services, capital budgeting, debt management and asset management. Prerequisite: FIN 850 or instructor's consent.

**FIN 890. Seminar in Special Topics (1–3).** Repeatable with departmental consent. Prerequisites: FIN 850 and MBA 800 or equivalent.

**FIN 891. Directed Studies (1–6).** Prerequisites: FIN 850 and MBA 800 or equivalent.

## Human Resource Management (HRM)

*Department of Management*

### Courses for Graduate/Undergraduate Credit

**HRM 664. Labor Relations (3).** The philosophy underlying labor legislation and the function of collective bargaining in labor-management relationships. *Course includes diversity content.* Prerequisites: HRM 466, junior standing, advanced standing.

**HRM 665. Employment Law (3).** Legal issues involved in hiring and employment, including lawful hiring practices, discrimination and harassment law, performance reviews, termination, labor laws, labor relations and other legal issues. Prerequisite: junior standing.

**HRM 666. Human Resource Staffing (3).** Analysis of all phases of the selection process as implemented in private and public sector organizations. Includes an analysis of the impact of federal and state anti-discrimination legislation on selection practices as well as human resource planning, recruiting, job analysis and selection techniques, including testing and interviewing. Validation of selection techniques is covered. Prerequisites: HRM 466, junior standing, advanced standing.

**HRM 668. Compensation (3).** Approaches to compensation processes in organizations. Discusses job evaluation techniques, wage level and wage structure determination, individual performance analysis, individual wage rate decisions, incentive plans and benefits. Considers the legal constraints on compensation practices. Prerequisites: HRM 466, junior standing, advanced standing.

**HRM 669. Training and Development (3).** Analyzes the training and development function as applied in private and public sector organizations. Considers the role of training and development in today's business environment, needs assessment, learning objectives, learning theory, instructional methods and techniques, and evaluation of training effectiveness. Prerequisites: HRM 466, junior standing, advanced standing.

**HRM 690. Seminar in Selected Topics (1–5).** Repeatable with departmental consent. Prerequisites: HRM 466 or instructor's consent, junior standing, advanced standing.

**HRM 750. Workshop in Human Resources (1–4).** Prerequisite: junior standing.

### Courses for Graduate Students Only

**HRM 890. Seminar in Special Topics (1–5).** Repeatable with departmental consent.

**HRM 891. Directed Studies (1–5).** Prerequisite: departmental consent.

## International Business (IB)

*Department of Management*

### Courses for Graduate/Undergraduate Credit

**IB 561. International Economics and Business (3).** Cross-listed as ECON 672. A survey of the economic foundations of international trade and investment. Studies international trade, theory and policy (the international economy), then explores the operations of the multinational firm within that environment. *Course includes diversity content.* Prerequisites: ECON 201, 202, junior standing, advanced standing.

**IB 600. International Management (3).** Overview of international business including strategy and organizational behavior. Equips students to manage effectively in an increasingly diverse global marketplace. Covers international strategy formulation, cross-border alliances, control and coordination systems in multinational organizations, social responsibility and ethics, culture and communication in global management, international negotiations, and management of global human resources. *Course includes diversity content.* Prerequisites: MGMT 360, IB 333, advanced standing, junior standing.

**IB 601. International Marketing (3).** Cross-listed as MKT 601. Problems and procedures of marketing in foreign countries. Includes the effects of foreign cultures and marketing systems on the design of marketing programs. *Course includes diversity content.* Prerequisites: MKT 300 with a minimum grade of *C*+ (2.300), junior standing, advanced standing.

**IB 602. Legal Environment of International Business (3).** Cross-listed as BLAW 602. Analysis of legal and regulatory issues affecting import-export transactions, licensing and technology transfer, and international sales of services. Prerequisites: IB 333, junior standing, advanced standing.

**IB 625. International Financial Management (3).** Cross-listed as ECON 674 and FIN 625. Studies the international financial and monetary system, emphasizing currency markets. Also examines market instruments and techniques, including synthetic and derivative securities and their application to management of currency risk in international trade and finance. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**IB 690. Special Topics in International Business (3).** Covers emerging topics within the field of international business. Prerequisites: completion of or concurrent enrollment in all required IB courses, junior standing, advanced standing.

### Courses for Graduate Students Only

**IB 836. International Business and Competitiveness (3).** An introduction to international business administration with particular attention to the development of multinational business strategies in light of the diverse economic, political, social and cultural dimensions of the environments that exist in both developed and developing areas of the world.

**IB 890. Seminar in Special Topics (1–3).** Repeatable with departmental consent.

**IB 891. Directed Studies in IB (1–6).** Prerequisite: departmental consent.

**IB 892. Internship in IB (1–3).** Prerequisite: departmental consent.

# Management (MGMT)

*Department of Management*

### Courses for Graduate/Undergraduate Credit

**MGMT 661. Coaching, Developing and Mentoring (3).** Managers and leaders of all kinds are judged not on what they do but upon how well their subordinates perform. Course develops positive, supportive management skills for helping individuals and groups achieve their potential. Covers the importance of identifying and hiring superior performers, orienting them to the group, coaching and developing subordinates to their fullest, maintaining motivation at high levels, and merging individuals into a cohesive group. Prerequisites: MGMT 360, junior standing, advanced standing.

**MGMT 662. Managing in Diverse Organizations (3).** Modern organizations face the challenge of managing employees with diverse backgrounds and talents to provide products and services to diverse customers. Course examines workforce diversity from the perspective of maximizing its benefits to group and organizational effectiveness, including developing skills to facilitate the constructive resolution of conflict, encouraging cooperation and teamwork, and enhancing identification with the work unit. Course includes diversity content. Prerequisites: MGMT 360, junior standing, advanced standing.

**MGMT 680. Making Effective Decisions (3).** Studies the theories of decision making with attention to the factors of rational decision making and application of quantitative methods, cognitive and motivational influences, intuition, political influences, ethics, and the process of negotiation and decision making in groups along with decision implementation and learning from past decisions. Prerequisites: MGMT 360, junior standing, advanced standing.

**MGMT 681. Strategic Management (3).** An analysis of business problems from a strategic management perspective. A capstone course which integrates the functional areas of business, including management, marketing, finance, accounting and production. Discusses both domestic and international policy issues, large and small firms, and various sources of competitive advantage. Prerequisites: DS 350, FIN 340, MKT 300, MGMT 360, senior standing, advanced standing.

**MGMT 690. Seminar in Selected Topics (1–5).** Repeatable with departmental consent. Prerequisites: junior standing, advanced standing.

**MGMT 750. Workshop in Management (1–4).** Prerequisite: junior standing.

### Courses for Graduate Students Only

**MGMT 803. Business Decision Making and Analysis (3).** A study of business decision making and problem solving methodologies including problem definition, research design, data gathering techniques, analytical techniques, reporting strategies and communication issues. Prerequisites: ECON 231 or equivalent, MBA 801 or equivalent.

**MGMT 862. Organizational Behavior (3).** The study of individual and group behavior as it impacts organizational effectiveness and employee well-being. Applies concepts such as motivation, personality, job attitudes, interpersonal relations, teams, organizational culture and leadership/influence to organizational settings, emphasizing integration and application of concepts. Prerequisite: MBA 801 or equivalent.

**MGMT 865. Communication (3).** Cross-listed as COMM 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. Prerequisite: MBA 801 or equivalent.

**MGMT 885. Advanced Strategic Management (3).** An analysis of business problems from a strategic perspective. Builds on prior coursework to focus on a firm's ability to develop a sustainable competitive advantage. Firms studied represent a broad range of manufacturing and service, global and domestic, entrepreneurial and mature issues. Prerequisite: to be taken during last semester of student's program, or departmental consent.

**MGMT 890. Seminar in Special Topics (1–3).** Repeatable with departmental consent.

**MGMT 891. Directed Studies (1–5).** Prerequisite: departmental consent.

# Management Information Systems (MIS)

*Department of Finance, Real Estate & Decision Sciences*

### Courses for Graduate/Undergraduate Credit

**MIS 600. Database Management Systems (3).** Introduces various methodologies for conceptual data modeling including entity-relationship data modeling and object-oriented database design. Covers relational database management systems, the SQL standard and data administration issues. Students obtain hands-on development with SQL servers in a client/server environment in a required database programming project. Covers electronic commerce transaction processing, data warehousing, data mining and distributed database management. Prerequisites: BADM 160 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**MIS 605. Systems Analysis and Design (3).** Introduces various methodologies for systems analysis, design and implementation. Examines application development in the context of the overall MIS master planning effort; examines techniques related to business process re-engineering. Uses a real-life project as the vehicle to put into practice tools and techniques related to interviewing, cost/benefit analysis, computer-aided software engineering, software project management and system documentation. Prerequisites: MIS 600 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**MIS 610. Dynamic Web Programming (3).** Uses ASP.NET as the programming tool to teach Web application development. Includes HTML forms, server objects, and SQL-based data sources for developing interactive and dynamic Web applications within a server-based scripting environment. Covers advanced topics such as ADO and implementing security in Web environments. Prerequisites: MIS 310, 600 each with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**MIS 611. Topics in Computer Networking (3).** Selected data communications and networking topics are examined in greater detail and depth. Students study the design, configuration, implementation, maintenance, management, troubleshooting and evaluation of selected networking technologies and software. Time is devoted to both concepts and hands-on exercises. Prerequisites: MIS 325 with a *C*+ (2.300) or higher, junior standing, advanced standing.

**MIS 615. Advanced Business Application Development (3).** Presents advanced concepts and techniques for business problem solving by developing software applications using a contemporary business programming language. Special emphasis is placed on object-oriented programming approach. Topics include developing classes, using a multi-tiered approach toward application development, establishing database connection, working with data tables, and database processing. Prerequisites: MIS 310 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**MIS 690. Seminar in Selected Topics (1–3).** Repeatable for credit with departmental consent. Prerequisites: senior standing, departmental consent, advanced standing.

**MIS 696. Management of the IS Function (3).** Addresses the issues of managing the information systems (IS) function. Includes the role of IS as a corporate entity, developing a strategic plan for IT investments, organizing the IS department, IS personnel management, IS project management, the role of IS as a user-support entity, auditing the IS function and emerging issues in managing the IS department. Prerequisites: MIS 605 (or concurrent enrollment), junior standing, advanced standing.

**MIS 750. Business Intelligence and Analytics (3).** Introduces design and implementation of business intelligence systems for tactical, managerial and strategic level decision making. Addresses how organizational data and analytics support business performance management. Prepares managers for developing and implementing digital performance dashboards to monitor business processes and make informed decisions.

### Courses for Graduate Students Only

**MIS 874. Management Information Systems (3).** Explores the link between business strategy and information systems strategy. Addresses the organizational implications of investing in information systems and prepares managers with an understanding of the potential of information systems for value creation, while recognizing the uncertainties associated with it. Provides the necessary know-how to managers in using information systems for creating sustainable competitive advantage.

**MIS 884. Database Planning and Management (3).** Prepares students to deal with issues in planning and managing organization-wide integrated databases. Emphasizes logical database design and relational database implementation. Includes SQL, assuring database integrity, database conversion, database administration and data management.

**MIS 890. Seminar in Special Topics (1–3).** Repeatable for credit with departmental consent.

**MIS 891. Directed Study (1–3).** Individual study of various aspects and issues in information technology. Repeatable for credit with departmental consent.

# Marketing (MKT)

*Department of Marketing*

### Courses for Graduate/Undergraduate Credit

**MKT 601. International Marketing (3).** Cross-listed as IB 601. Problems and procedures of marketing in foreign countries. Includes the effects of foreign cultures and marketing systems on the design of marketing programs. *Course includes diversity content.* Prerequisites: MKT 300 with a minimum grade of *C*+ (2.300) or better, and MKT 405.

**MKT 607. Promotion Management (3).** An analysis of all issues involved with the promotion of an organization and its products or services. Students develop coordinated marketing strategies in the areas of advertising, personal sales, public relations and special promotional activities such as direct marketing, interactive media and sales promotions. Prerequisites: MKT 300 with a minimum grade of *C*+ (2.300), MKT 405.

**MKT 608. Selling and Sales Force Management (3).** Cross-listed as ENTR 608. An analysis of current behavioral concepts of personal selling and the problems and policies involved in managing a sales force. Prerequisites: MKT 300 with a grade of *C*+ (2.300) or better, MKT 405.

**MKT 609. Marketing Programs (3).** Studies all the aspects of the marketing mix that are integrated to make an effective and coordinated marketing program. Prerequisites: MKT 300 with a grade of *C*+ (2.300) or better, 6 additional hours of marketing, junior standing, advanced standing.

**MKT 690. Seminar in Selected Topics (1–5).** Repeatable with instructor's consent. Prerequisites: junior standing, advanced standing.

**MKT 706. Seminar in New Product & Technology Development (3).** Cross-listed as ENTR 706. Provides a form to the function of idea commercialization. Examines the product development practices of successful, innovative companies and focuses on how customer needs can be translated into product concept testing, product launch strategies, postlaunch product evaluation, and managing innovative teams. Students apply learning through developing and testing a product idea that solves a customer problem.

**MKT 750. Workshop in Marketing (1–4).** Prerequisite: junior standing.

### Courses for Graduate Students Only

**MKT 801. Marketing Management (3).** Develops an understanding of the difference between a sales/marketing department and a marketing orientation. Emphasizes the integral role of a marketing orientation throughout the modern organization. Prerequisite: MBA 801.

**MKT 803. Marketing Analysis (3).** An application of the scientific method to the design and implementation of research procedures that support the need for management decision making, planning and strategy development in the marketplace. Prerequisite: MBA 801 or equivalent.

**MKT 890. Seminar in Special Topics (1–3).** Repeatable with instructor's consent.

**MKT 891. Directed Studies (1–5).** Prerequisite: departmental consent.

# Master of Business Administration (MBA)

*Graduate Studies in Business*

### Courses for Graduate Students Only

**MBA 781. Cooperative Education (1).** Provides the graduate student with a field placement which integrates theory with a planned and supervised professional experience. Programs must be formulated in consultation with appropriate graduate faculty. May be repeated for credit up to 3 hours. May not be used to fulfill degree requirements. Graded *Cr/NCr*.

**MBA 800. Fundamentals of Finance and Financial Analysis (3).** Provides students whose undergraduate degrees were in disciplines other than business the background accounting and finance fundamentals required for the MBA program. Topics covered include the design and use of financial statements including the balance sheet, income statement and statement of cash flows, analyzing companies using financial ratios, time value of money theory and calculations, investment decision rules, securities valuation, and fundamentals of capital budgeting. Prerequisites: graduate standing and permission of the MBA director.

**MBA 801. MBA Basics: Management & Marketing (3).** Highlights foundation knowledge from the disciplines of management and marketing integrated with a strong component of communication skills. Primarily, provides students with a knowledge base in management and marketing from which to build in their MBA coursework. Secondarily, builds oral and written communication skills necessary for success in the MBA curriculum and beyond. Prerequisites: graduate standing and permission of the MBA director.

# Real Estate (RE)

*Department of Finance, Real Estate & Decision Sciences*

### Courses for Graduate/Undergraduate Credit

**RE 611. Real Estate Finance (3).** Cross-listed as FIN 611. Covers the institutions and instruments used to finance residential and commercial properties, and provides essential knowledge and skills for students who are interested in careers as commercial bankers, mortgage bankers or analysts or investors in mortgage-related securities. Topics include fixed-rate and alternative mortgage instruments, financial analysis and decision making, residential mortgage underwriting, mortgage market regulations, primary and secondary mortgage market structure and institutions, and mortgage-backed securities. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**RE 614. Real Estate Appraisal (3).** Provides in-depth coverage of the methods used to estimate the value of residential and commercial properties. Students learn about the sales-comparison, cost and income-capitalization approaches for appraising real estate. (*Note*: non Barton School students do not need special permission to enroll in this course.) Prerequisite: junior standing. RE 310 recommended for students with a declared emphasis in real estate.

**RE 618. Real Estate Investment Analysis (3).** Cross-listed as FIN 618. Covers the tools and techniques used to evaluate the financial profitability of real estate investments, as well as real estate decisions affecting businesses. Students learn about discounted cash flow analysis of real estate, the relative advantages of different ownership structures, tax treatment of real estate investments and the effects of leverage; in addition, topics such as lease-versus-own analysis, sale-leasebacks and other corporate real estate issues are discussed. Prerequisites: FIN 340 with a grade of *C*+ (2.300) or better, junior standing, advanced standing.

**RE 619. Urban Land Development (3).** A hands-on course focusing on the challenges and opportunities associated with real estate development projects. Class time is devoted to analyses of actual development projects, with numerous guest lecturers and field trips. Topics covered include market and feasibility analysis, site selection, development financing, ownership structures and marketing strategies. (*Note*: non Barton School students do not need special permission to enroll in this course.) Prerequisites: junior standing and RE 310, or admission into either the Master of Public Administration or Master of Business Administration program; students with a declared emphasis in real estate are *strongly* recommended to take as many other real estate classes as possible before taking RE 619.

**RE 690. Seminar in Selected Topics (1–5).** Repeatable with departmental consent. Prerequisites: junior standing, advanced standing.

**RE 750. Workshop in Real Estate (1–4).** Prerequisite: junior standing.

### Courses for Graduate Students Only

**RE 890. Seminar in Special Topics (1–3).** Repeatable with departmental consent.

**RE 891. Directed Studies (1–5).** Prerequisite: departmental consent.

# College of Education

**Shirley Lefever, *dean***
**104 Corbin Ed. Center • (316) WSU-3300**
**wichita.edu/education**
**Clay Stoldt,** *associate dean*
**Ashlie Jack,** *assistant dean/accreditation officer*

## Departments:

**Counseling, Educational Leadership, Educational and School Psychology,** (316) 978-3325—Jody Fiorini, *department head*
**Curriculum and Instruction,** (316) 978-3322—Kathryn Busch, *interim department head*
**Human Performance Studies,** (316) 978-3340—Michael Rogers, *chairperson*
**Sport Management,** (316) 978-5445—Mark Vermillion, *chairperson*

### Graduate Degree Programs

The College of Education offers programs leading to the Master of Arts in Teaching (MAT), Master of Education (MEd) in counseling, educational leadership, educational psychology, exercise science, learning and instructional design, sport management, and special education, the Specialist in Education (EdS) in school psychology, and the Doctor of Education (EdD) in educational leadership.

### Admission Requirements

Specific admission requirements for each degree specialization are described in each department's section of the Graduate Catalog. Applicants for admission should review admission criteria well in advance of intended enrollment dates to allow sufficient time for the admission process to be completed. Several programs require submission of scores from examinations (e.g., Graduate Record Examination), as well as transcripts and letters of reference.

Minimum admission requirements for full standing include a bachelor's degree from a regionally accredited institution and a grade point average of at least 2.750 based upon the last 60 credit hours of coursework (including any post-bachelor's graduate work). The student should have no more than 9 credit hours of background deficiencies in the major field of graduate study desired. For most College of Education degree programs, admission requirements exceed these minimums.

### Graduate Level Licensure

Graduate offerings include courses which help students meet requirements for state licensure as principals, district school administrators, school counselors, professional counselors, early childhood teachers, English as a second language/bilingual education teachers, special education teachers, reading specialists, and school psychologists.

### Initial Teacher Licensure

Both undergraduates and degree/nondegree graduate students may pursue initial licensure as a teacher (PreK–12 schools) through Wichita State University. Interested individuals should contact the Office of Education Support Services in the College of Education, (316) 978-3300, or visit wichita.edu/education/programs to inquire about teacher education as a graduate student.

### Professional Development

Other courses are available to support the continued academic and professional development of educators. Graduate offerings also are available to support careers in sport management and exercise science.

### Certificates Offered

Certificates offered by the College of Education include: child/play therapy, engineering education, educational technology, functional aging, higher education leadership, interdisciplinary STEM education, and literacy.

### Financial Assistance

Some financial assistance to support graduate study is available, including federal traineeships, assistantships, and Wichita State University fellowships. Full-standing status is required to receive financial assistance.

Applications for graduate program admission must be submitted by departmental deadlines to be eligible for student loans and scholarships.

## Counseling, Educational Leadership, Educational and School Psychology (CLES)

**Graduate Faculty**

*Professors:* W.C. Joseph Mau, Jean A. Patterson, Marlene Schommer-Aikins
*Associate Professors:* Jodi Fiorini (department head), Nancy A. McKellar
*Assistant Professors:* Joel Abaya, Susan Bray, Eric Freeman, Jason Herron, Beata Latavietz, Jiaqi Li, Susan Unruh
*Senior Fellows:* Craig Elliot, Patrick Terry

### Degrees and Areas of Specialization

The department of counseling, educational leadership, educational and school psychology offers programs leading to the Master of Education (MEd) in counseling, educational psychology, and educational leadership, a Specialist in Education (EdS) in school psychology, and a doctorate (EdD) in educational leadership. The department offers postmaster's work for students pursuing the licensure program in professional counseling, district leadership and school psychology. There is also a postgraduate certificate program in child/play therapy, and graduate certificates in engineering education, and higher education leadership.

### Master of Education Requirements

The Master of Education (MEd) in counseling and in educational psychology may be earned under a thesis or nonthesis option.

***Counseling:*** The nonthesis option in counseling requires 46 credit hours of coursework and a written comprehensive examination. The thesis

option in counseling requires 54 credit hours of coursework plus an oral examination over the thesis. For state licensure recommendation in professional school counseling, 46 credit hours are required under the nonthesis plan and 54 credit hours are required under the thesis plan.

***Educational psychology.*** The MEd in educational psychology may be earned under a thesis or nonthesis option. The nonthesis option requires 36 credit hours of coursework and a written comprehensive examination. The thesis option requires 32 credit hours of coursework plus an oral examination over the thesis.

Candidates for the nonthesis MEd in both educational psychology and in counseling are required to pass a written comprehensive examination in their major area. Within the first three weeks of the semester in which students take the exam, an Application for Comprehensive Examination should be filed with the department office. Applications will not be accepted if submitted less than two weeks prior to the scheduled examination.

***Educational leadership.*** The Master of Education (MEd) in educational leadership program has two different emphases, inquiry and urban. The inquiry emphasis is designed to prepare future principals in a broad array of educational settings with all coursework taught by faculty and practicing school district leaders. The urban emphasis is designed to prepare future principals to focus on leading an urban school with students from a vast array of ethnic and socio-economic status backgrounds.

The Master of Education (MEd) in educational leadership is a 33-credit-hour nonthesis program. Students pursuing licensure as building leaders must complete this program in its entirety. A comprehensive written examination is required. In addition to program completion, passing the state of Kansas required Praxis II Test (test code 6011) is a requirement for state licensure.

#### *Admission Requirements*

***Counseling.*** In addition to the general requirements, students seeking admission to the counseling program are required to have a 3.000 grade point average based upon the last 60 credit hours of coursework (including any postbachelor's graduate work). They must also submit: (1) names, addresses and telephone numbers of three people to serve as professional references; (2) a statement of professional goals; (3) a resume; and (4) evidence of completion of 9 credit hours of undergraduate psychology, plus 6 additional undergraduate hours in the social sciences.

Admission to the MEd program in *counseling* does not require a teaching license.*

Students who are licensed teachers and whose career goal is *school counseling* must:

1. Complete the MEd in counseling at the 46-credit-hour nonthesis level, or the 54-credit-hour thesis level;
2. Pass the Praxis II exam;
3. Have a professional teacher's license;* and
4. After the first three requirements listed above are completed, students may apply for a conditional license.

For students whose career goal is *counseling outside of schools*, priority is given to applicants wanting to work with children and adolescents. Students wanting to work outside of schools are strongly encouraged to pursue licensure as a clinical professional counselor.

*Application deadlines:* For summer and fall semesters: May 1. For spring semester: November 1. All applications must be complete. Candidates who apply are considered in the order in which their applications are completed until all openings are filled.

*Students without a professional teaching license must complete 6 additional hours of field experience classes in two consecutive semesters under the Parallel Pathways or Direct Entry option. They must complete items 1, 2 and 4 from the preceding list. These students must also take a year-long postdegree internship.

***Educational Psychology.*** To be considered for admission to the MEd in educational psychology, students must provide their grade point average (GPA) for the most recent 60 credit hours of undergraduate coursework; Graduate Record Examination (GRE) scores (verbal and quantitative); GRE writing assessment score; a resume; names, addresses and phone numbers of three people to provide letters of reference; a statement of professional goals; and a statement of research interests.

Students who are accepted into the educational psychology program will typically earn the following Graduate Record Exam (GRE) scores: Verbal GRE score of 145 or higher, Quantitative GRE score of 145 or higher, and Analytical Writing GRE score of 3.5 or higher. In addition, typically these students earn a *B* average (3.000) or higher GPA in the last 60 hours of their undergraduate coursework.

Applications for admission to the MEd in educational psychology program are reviewed throughout the year as they become completed. Candidates who apply are considered in the order in which their applications are completed until all openings are filled.

***Educational Leadership.*** Applicants must have a minimum 3.000 grade point average in their last two years (60 hours) of college coursework from accredited institutions. In addition, applicants must have validated strengths on the multiple indicators listed below.

1. Official transcripts of all college-level work completed, and indication of a degree conferral;
2. Three Reference Report Forms from supervisors and/or professional peers. At least one must be from a supervisor attesting to the applicant's potential as a building administrator;
3. Evidence of licensure for a role in the public/private schools and at least one year of accredited experience;
4. A resume or curriculum vita of educational and professional experience;
5. A brief statement of professional goals related to completion of the master's degree and/or certification as a school administrator; and
6. A letter signed by a building principal indicating he or she is willing to serve as the student's mentor and will allow the student to fulfill the practicum requirements of the program.

*Note*: Requirement six above normally precludes the admission of international students from this program because applicants are usually employed by a Kansas K–12 public or private school district before being admitted.

### Specialist in Education Requirements

The Specialist in Education (EdS) in school psychology requires 39 credit hours of coursework beyond the MEd. The degree is awarded upon completion of coursework and practicums. For full licensure in school psychology, students must apply for a professional school license, register for a 4-credit-hour postspecialist internship, and complete the full-time, one-year internship in a public school.

Applications for admission to the EdS in school psychology are reviewed when they become complete throughout the year. Candidates who apply are considered in the order in which their applications are completed until all openings are filled.

#### *Admission Requirements*

Students who have completed a master's degree in educational psychology, counseling or a directly related area may apply for admission. Students must provide graduate degree transcripts; undergraduate grade point average for the last 60 credit hours; Graduate Record Examination scores (verbal and quantitative); Graduate Record Examination analytical writing assessment score (unless applicant already completed a master's thesis); a resume; names, addresses and phone numbers of three people to provide letters of reference; a statement of professional goals; and a statement of research interests. Undergraduate grade point average (GPA) and Graduate Record Examination (GRE) scores will be evaluated using the following index:

$$\text{GPA} + \frac{(\text{GRE Verbal} + \text{Quantitative subtests})}{400}$$

Ordinarily, applicant's scores on this index will equal or exceed 5.5. The GPA and GRE index of 5.5 could be achieved by a student who attained combined verbal and quantitative scores on the GRE of 1,000 and a *B* average (3.000) over the last 60 credit hours of undergraduate coursework. New GRE scores as of December 2011 will be accepted and considered for admission, but no scale values are currently available.

Following admission to the EdS program, each student will meet with a faculty advisor to determine whether prerequisite requirements have been met or how remaining prerequisites can best be met. All students must complete the introductory professional issues course at WSU,

and all students must have either completed a thesis as part of their master's program or prepare a thesis equivalent as part of the EdS program. A thesis equivalent differs from a thesis only in procedures for enrollment and in form of recognition. Faculty will apply all thesis criteria for advisement, proposal review, human subjects review and final oral examination.

## Doctor of Education Requirements

Completion of the EdD in educational leadership requirements includes core courses, a minimum of 15 dissertation hours, comprehensive examinations, and an approved dissertation.

The five-member dissertation committee will include at least three university professors holding GF-1 or GF-2 graduate faculty status (the chair must hold GF-2 graduate faculty status), one member must hold GF-3 graduate faculty status, and an outside department university professor who also holds GF-1 or GF-2 graduate faculty status who will serve as the graduate dean's representative. See "Graduate Faculty" on page 12 for graduate faculty status definitions.

### *Admission Requirements*

Applicants must have a minimum grade point average of 3.500 on a 4.000 scale for all graduate-level hours. In addition, applicants must have validated strengths on the multiple indicators listed as follows:

1. Official transcripts of all college-level work completed, and indication of a degree conferral;
2. Three years of professional experience in a P–16 educational organization;
3. At least three letters of recommendation from supervisors and/or professional peers that attest to the applicant's potential for success as an educational leader;
4. A current resume or curriculum vita of educational and professional experience;
5. A brief, one-page statement of professional goals related to the completion of the doctoral degree in educational leadership; and
6. A sample of academic writing (such as a published article or paper written for a graduate-level course).

## State Licensure Programs With Degree

The department of counseling, educational leadership, educational and school psychology provides degree programs and coursework that lead to state of Kansas school licenses as:

Building Leader
School Counselor
School Psychologist

## District Leadership State License Program

Students wishing to complete the District Level Licensure program *must* be admitted to at least nondegree Category A status in educational leadership. Current or past graduate students of WSU should contact the Graduate School office at (316) 978-3095 to determine if they will need to apply for admission to that status. Applicants who are graduates from other universities will need to submit a Graduate School application for nondegree A status in educational leadership, as well as the appropriate application fee, official transcripts from the university where the applicant received the master's degree, sent directly to the Graduate School office, is also a requirement for admission.

Applicants must have validated strengths on the following multiple indicators:

1. Official transcript from a regionally accredited university where the applicant received a master's degree in educational building leadership;
2. Minimum GPA of 3.250 for graduate coursework leading to the master's degree;
3. Resume that indicates three years of employment/experience in an accredited school district;
4. Professional goal statement: A 500 word paper that discusses the applicant's leadership, professional, and nonprofessional leadership experiences. The applicant must be specific detailing the goals and outcomes of his/her leadership experience. The professional goal statement will be analyzed for evidence of leadership ability and writing skill; and
5. At least three letters of recommendation from people who have supervised the applicant in either an employment or community service capacity, and who can comment on the applicant's intellectual ability, creativity, initiative, sensitivity to others and leadership potential.

### *Academic Requirements*

The district-level program requires 21 credit hours of coursework. Previous coursework will be considered to help reduce the number of credits required to complete the program. Each student must successfully complete the following courses:

| | | |
|---|---|---|
| EL 884 | Leadership in Vision, Collaboration and Planning | 3 |
| EL 953 | Financial Support of Ed. | 3 |
| EL 956 | Human Services Leadership | 3 |
| EL 963 | Policy and Politics in Educational Leadership | 3 |
| EL 964 | Administration and Supervision of Special Ed. | 3 |
| EL 992 | Superintendency/Internship | 6 |

Candidates may start the program in the summer, fall or spring and can take the entire program in one year or spread over two years. The first option involves taking seminars while also serving a superintendency internship.

EL 884 and EL 956 are eight-week courses offered during the fall semester.

EL 963 and EL 964 are eight-week courses offered during the spring semester.

EL 953 is offered in the first summer session.

EL 992 is offered during the fall and spring semesters.

### *Endorsement Requirements*

Upon the completion of all district level coursework, candidates are required to complete and pass the School Superintendent Assessment (SSA) which is based on the 2008 ISLLC standards. After successfully completing the SSA, the candidate may apply for licensure to the Kansas State Department of Education. Completing an application for licensure is the last requirement of district level program. The license application can be found at ksde.org. This website provides access to the KSDE User Registration form. Questions regarding licensure can be directed to the Wichita State Licensure Office (316) 978-3300.

## Graduate Certificates

### *Child/Play Therapy Certificate*

The counseling program in the department of counseling, educational leadership, educational and school psychology offers a postmaster's certificate program in child/play therapy. The certificate program curriculum is designed to meet training standards for play therapists established by the Association of Play Therapy. This certificate program is not eligible for Title IV (federal financial aid) unless the certificate is awarded as part of a degree program. The certificate program comprises the following courses:

| | | |
|---|---|---|
| CESP 841 | Fundamentals of Play Therapy | 3 |
| CESP 842 | Play Therapy with Young Children | 3 |
| CESP 843 | Child Psychopathology in Play Therapy | 3 |
| CESP 844 | Advanced Techniques in Child and Play Therapy | 3 |
| CESP 865 | Practicum in Play Therapy* | 3 |

*The practicum requires students to conduct 100 hours of play therapy while receiving weekly supervision from an experienced play therapist.

*Admission Requirements*

1. Evidence of having completed a master's degree in counseling, social work or a closely related field;
2. Cumulative graduate GPA: 3.250 in required courses for the prerequisite graduate degree;
3. Resume: The resume should include evidence of experience working in a professional counseling role;
4. Goal Statement: The goal statement must indicate an intention to work with young children as part of a future professional role; and
5. References: Two professional references.

***Completion Requirements.*** A cumulative graduate GPA of 3.000 for all courses comprising the certificate program is required. No grades below a *C* (2.000) are allowed in certificate program courses.

Completion process:

1. Students must notify the program area, in writing, of intent to complete the certificate.
2. In the semester the certificate requirements are met students must:
   a. With graduate advisor, prepare and submit to the Graduate School a plan of study for the certificate.

b. Submit to the Graduate School an application for the certificate along with a $15 filing fee.

Deadlines are no later than the 20th day of fall or spring semester, or the 10th day of a summer term.

### *Graduate Certificate in Engineering Education*

The College of Education, in conjunction with the College of Engineering, offers the graduate certificate in engineering education. The graduate certificate in engineering education is designed to (1) provide engineering graduate students with knowledge of contemporary learning theories that can be applied to university level instruction; (2) provide engineering graduate students with knowledge and skills in classroom testing and program evaluation; (3) provide engineering graduate students with knowledge of pedagogical skills that can be applied to university level instruction; (4) provide engineering graduate students with the skills to apply knowledge of learning theory, pedagogical theory and measurement theory in an authentic university setting. This certificate program provides joint mentorship from College of Education and College of Engineering faculty members. Students who plan to apply for university teaching positions after graduation need to be competitive in a market that demands good teaching as well as good research. The engineering education certificate will give WSU graduates a competitive edge. The following courses are required for completion of this certificate:

| | |
|---|---|
| CESP 820 | Learning Theory and Instruction – 3 hours (spring) |
| CESP 811 | Principles of Measurement and Program Evaluation – 3 hours (spring) |
| CI 816 | Advanced Methods: Developing Critical and Creative Thought – 3 hours (spring) |
| CI 816A | Internship: Developing Critical and Creative Thought – 3 hours (fall) |

***Admission Requirements.*** Students seeking this graduate certificate program must be Wichita State University engineering graduate students in good standing either in a degree bound program or in nondegree, Category A status. Students should contact the Graduate School to determine if they need to apply for admission to this status, or need to reactivate their enrollment file. Students who have not completed graduate coursework at Wichita State University will need to apply for admission to degree status or nondegree, Category A status in an appropriate area of engineering, by submitting an application and application fee to the Graduate School. Two official transcripts from all schools attended must be sent directly to the Graduate School from the institution issuing the transcript, or must be submitted to the Graduate School office in envelopes sealed by the issuing institution, if issued to student.

***Completion Requirements.*** A cumulative graduate GPA of 3.000 for all courses comprising the certificate program is required. No grades below a *C* (2.000) are allowed in certificate program courses.

Completion process:

1. Students must notify the program area, in writing, of intent to complete the certificate.
2. In the semester the certificate requirements are met students must:
   a. With graduate advisor, prepare and submit to the Graduate School a plan of study for the certificate.
   b. Submit to the Graduate School an application for the certificate along with a $15 filing fee.

Deadlines are no later than the 20th day of fall or spring semester, or the 10th day of a summer term.

### *Graduate Certificate in Higher Education Leadership*

This 15-hour graduate certificate program is designed to prepare current and prospective college or university staff members for entry to mid-level positions as administrators in two- and four-year colleges and universities; policy makers and student affairs professionals in higher education; and to provide selected coursework/degrees for individuals currently in the field. Graduates of the program are prepared to function effectively in a variety of leadership positions at two- and four-year institutions of higher education. In addition, this program enables working professionals in higher education to increase their skills, knowledge and abilities to compete for professional positions of increasing responsibility and scope. This graduate certificate can be earned in conjunction with an existing master's degree program or taken for postmaster's degree credit. Students who complete the graduate certificate for postmaster's credit are eligible to apply for the EdD in Educational Leadership.

This certificate program is not eligible for Title IV (federal financial aid) funding unless the certificate is awarded as part of a degree program. Certificate programs which are not eligible for Title IV aid are not gainful employment programs.

Fifteen (15) hours from the following courses are required for completion of this certificate:

| | |
|---|---|
| CLES 871 | Foundations of Higher Education, 3 hrs. (fall) |
| CLES 872 | Finance and Human Resources in Colleges and Univ., 3 hrs. (spring) |
| CLES 873 | College Student Development and the Campus Environment, 3 hrs. (fall) |
| CLES 874 | Legal and Ethical Issues in Higher Education, 3 hrs. (summer) |
| CLES 875 | Practicum in Higher Education Leadership, 3 hrs. (fall and spring) |
| CESP 811 | Principles of Measurement and Program Evaluation, 3 hrs. (spring) |
| SMGT 801 | Management in Sport, 3 hrs. (fall and spring) |

*Admission Requirements*

1. Students seeking admission having already completed a master's degree must have a GPA of 3.200 or higher, students currently enrolled in a master's degree program must have a GPA of at least 3.200 based on the last 30 hours of graduate coursework;
2. Three letters of recommendation;
3. Letter of intent indicating reasons for pursuing certificate; and
4. Resume, to include evidence of two years of professional experience in education or a related field.

## Counseling, Educational and School Psychology (CESP)

**Courses for Graduate/Undergraduate Credit**

**CESP 701. Introduction to Educational Research (3).** An introduction to research in education. Includes (1) a survey of current educational research, (2) the nature of research methodology, (3) the preparation of research reports, and (4) criticism of current research.

**CESP 704. Introduction to Educational Statistics (3).** Introduction to statistics, including measures of central tendency, measures of variability, correlation, chi square, t-test, correlated t-test, one-way, two-way analysis of variance and simple regression.

**CESP 728. Theories of Human Development (3).** Describes what developmental theories are, what they do, where they come from, how they work and how they are used to explain human nature. Uses theoretical assumptions and related research to systematically evaluate developmental theories in terms of their scientific worthiness and their ability to address characteristics of human development. Focuses on those theories which helped shape the way we currently view human development as well as significant new perspectives which may shape the way we view it in the future. Prerequisites: CESP 334, PSY 325 or equivalent, and CLES 801 or equivalent, or instructor's consent.

**CESP 729. Theories of Early Childhood Development (3).** Describes what developmental theories are, what they do, where they come from, how they work and how they are used to explain human nature. Uses theoretical assumptions and related research to systematically evaluate developmental theories in terms of their scientific worthiness and their ability to address characteristics of early childhood development. Focuses on those theories which helped shape the way we currently view early childhood development as well as significant new perspectives which may shape the way we view it in the future. Intended to cover birth through elementary school years of development. Prerequisite: CESP 701 or CLES 801, or equivalent, or instructor's consent.

**CESP 750. Workshops in Education (1–6).**

**CESP 752. Special Studies in Education (1–3).** For students with personnel and guidance interests. May emphasize different preselected areas during a semester. Repeatable with advisor's consent. Prerequisite: instructor's consent.

**CESP 781. Cooperative Education (1–3).** Work-related placement that integrates theory with a planned and supervised professional experience. With advisor approval, a maximum of 4 credit hours may count

to meet degree requirements. May be repeatable for credit with a maximum of 4 hours counting toward a graduate degree. Graded *Cr/NCr*.

### Courses for Graduate Students Only

**CESP 802. Introduction to Counseling Techniques (1).** A laboratory approach to an examination of the counselor's role in the counseling process. Helps the prospective counselor develop basic interviewing skills as a foundation for more advanced techniques used in the counseling process. *S/U* grade only. Prerequisite: counseling major or departmental consent.

**CESP 803. Counseling Theory (3).** A study of selected theories of counseling. Prerequisite: admission to counseling or school psychology program or instructor's consent.

**CESP 804. Foundations of Counseling (3).** Introduction to the counseling profession, which operates in a variety of settings. Examines basic concepts in counseling, and function of the helper in various professional work settings. Focus is on the demands and strains of the helping professions and their effects on the helper. In addition, the course is designed to provide students with an overview of theory, practice, methods, basic principles and concepts, and to help students develop a professional identity in the counseling field. Prerequisite: admission to counseling program or instructor's consent.

**CESP 808. School Psychology Professional Issues (3).** Examines roles and functions of school psychologists within the context of the historical foundations of the profession. Uses lecture, discussions, observations in schools, and presentations by field-based school psychologists to acquaint students with the kinds of problems with which school psychologists typically work, the methods they employ to deal with problems, social systems in which these endeavors occur, and professional issues that shape and characterize the profession.

**CESP 811. Principles of Measurement and Program Evaluation (3).** Covers the transdisciplinary field of program evaluation including history and current trends, alternative program evaluation models, program evaluation standards, program evaluation procedures, data collection instrument development and interpretation, data analysis, and reporting of evaluation results. Prerequisites: CESP 704 and CLES 801, or equivalent.

**CESP 815. Career Development (3).** For master's-level students interested in assisting students and adults in career development and related concerns. Covers (1) career development of individuals across life span, (2) sources and organization of information, (3) assessment designs and career intervention techniques, and (4) career decision-making/planning processes. Includes hands-on experience with a variety of assessment methods and intervention techniques and theory-based career decision-making strategies for career interventions. Prerequisites: CESP 803 or 804 or instructor's consent.

**CESP 820. Learning Theory and Instruction (3).** Applications of some major learning theories and learning principles. Prerequisites: CESP 728 and CLES 801 or departmental consent.

**CESP 821. Multicultural Issues in Counseling (3).** 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 803 or 804, CLES 801, or instructor's consent.

**CESP 822. Assessment in Counseling (3).** Survey and study of standardized tests and their application in counseling, emphasizing their selection, use and interpretation. Studies the basic concepts pertaining to the interpretation of psychological tests and inventories, including basic measurement theory and the factors involved in the selection of tests. Prerequisites: CESP 704 and CLES 801; CESP 803 or 804.

**CESP 823. Experimental Design in Educational Research (3).** Focuses on the use of inferential statistics for various experimental designs. Parametric topics covered include *t*-test, one-way and factorial analysis of variance and covariance (with and without repeated measures), post-hoc comparisons, and simple and multiple regression. Also covers selected nonparametric statistics. Develops all statistics through practical application with computer programs. Prerequisite: CESP 704 or instructor's consent.

**CESP 824. Techniques of Counseling (3).** Examines and practices techniques of counseling through simulated counseling situations and extensive examination of counseling case studies. Prerequisites: CESP 728, 802, 803 (or concurrent enrollment), 804, 821, 822 or 811, 835, and counseling major or departmental consent. Prerequisites for school psychology students: CESP 728, 803, 822 or 811, 835, and departmental consent.

**CESP 825. Group Counseling Techniques (3).** Cross-listed as PSY 973. 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.

**CESP 827. Field Experiences for Non Education School Counseling Students (3).** Structured field experiences in school settings for students without an education background who want to be eligible for licensure as a PreK–12 school counselor. To meet KSDE requirements, students must enroll in the class for two separate semesters. Repeatable for up to 6 hours of credit. Prerequisites: CLES 801, CESP 704, 728, 803, 804. Must be enrolled in CESP 845 during one of the semesters.

**CESP 831. Social Psychology of Educational and Helping Professions (3).** A critical study of an individual's thoughts, feelings and behaviors, based on the influences of, and the impact and interactions with, social settings and the individual's culture. Theory, research and practice in relation to social, developmental, psychological and educational issues and problems are discussed throughout the course. Furthermore, this is examined in the context of how it may impact the helping relationship. Students study the relationship between social settings and the psychological functioning of children, adolescents and adults. Students also study the role of educational and psychological professionals within the cultural, academic and organizational operations of education. Prerequisites: CLES 801 (previously taught as CESP 701) or equivalent, CESP 728 or equivalent, or instructor's consent.

**CESP 834. Biological Principles and Psychological Functioning for School Psychologists (3).** Biological bases of behavior and implications for assessment and intervention within school settings are major topics. Neuropsychological assessment and intervention, sensory and motor functioning, and psychopharmacological treatments relevant to children's functioning in school comprise a major component. Specially designed for school psychologists. Prerequisite: graduate standing in the CESP department (enrolled in a degree program or nondegree A status in CESP), or instructor's consent.

**CESP 835. Psychopathology and the DSM (3).** Introduction to psychopathology for graduate students preparing for careers in school psychology, counseling and related professions. Mental disorders occurring in children as well as adults are studied. The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) is used as the diagnostic system for understanding psychopathology. Assessment procedures, prevention programs and treatment/intervention approaches are considered for the mental disorders studied. Prerequisites: CESP 728 and 840 (school psychology students only), or departmental permission.

**CESP 838. Counseling Families in Crisis (3).** Teaches basic family processes and how they impact the growth and development of children and adolescents. Covers the family life cycle, healthy and maladaptive family functioning including appropriate and inappropriate parenting practices, the unique challenges faced by single parent and blended families, the impact of substance use on families, the impact of traumatic experiences on families, basic family assessment, and basic family therapy techniques. In addition, acquaints students with the etiological factors, potential indicators, consequences, reporting strategies, and treatment strategies associated with child abuse and neglect. Prerequisite: graduate standing.

**CESP 840. Psychology and Education of Exceptional Children (3).** Study of the conceptual and theoretical formulations, empirical evidence and research concerning behavioral characteristics of exceptional children.

**CESP 841. Fundamentals of Play Therapy (3).** Covers the historical development of play therapy as a treatment procedure, through current trends and practices of major disciplines in the field. Primary emphasis is on the development of fundamental skills and practices of major disciplines in the field, and strategies necessary to conduct successful play sessions. The effectiveness of play therapy with various diagnostic populations is discussed. Prerequisite: master's degree in counseling or related field or program consent.

**CESP 842. Play Therapy with Young Children (3).** Examines the use of play therapy with young children. Emphasizes the developmental concepts and diagnostic approaches and issues of young children and their caregivers. Therapy strategies covered include treatment of regulation problems, filial therapy, floor time, interaction guidance, infant/parent relationship training and other strategies. Prerequisite: master's degree in counseling or related field or program consent.

**CESP 843. Child Psychopathology in Play Therapy (3).** Examines common childhood diagnoses that present for treatment. Topics include: Reactive Attachment Disorder, Oppositional Defiant Disorder, Conduct Disorder, Separation Disorder, Post-Traumatic Stress Disorder, as well as other common DSM IV diagnoses. The class discusses symptoms and the child's clinical presentation. Appropriate treatments, including the use of play therapy and other therapy activities is also covered. Prerequisites: master's degree in counseling or related field, CESP 841 or equivalent course; or program consent.

**CESP 844. Advanced Techniques in Child and Play Therapy (3).** An advanced skills class, building on the fundamental and requisite skills learned in an introductory course in play therapy. Emphasizes enhanced understanding and use of the nature and construction of therapeutic responses in the play therapy process. Explores the use of play therapy with varied therapeutic

approaches and special populations. Prerequisites: master's degree in counseling or related field, CESP 841 or equivalent course; or program consent.

**CESP 845. Professional School Counseling (3).** The role of school counselors in providing counseling, guidance and consultation services to students, staff and parents in PreK–12 settings is covered. Prerequisites: Admission to the counseling degree program, CESP 803, 804 or departmental consent.

**CESP 847. Addiction Counseling (3).** Provides counselors and other human service workers with an overview of the addictive process. Theories of addiction counseling and application of these theories comprise a significant part of this course, particularly with how they apply to work with individuals, couples, families and groups. Co-occurring disorders, such as process addictions and mental illnesses, are also addressed. Students develop conceptual knowledge, practical skills and self-awareness concerning the etiology of addiction, addiction assessment strategies, wellness strategies for facilitating optimal development and preventing clinician burn-out, and diagnosis and treatment planning. *Course includes diversity content.* Prerequisite: graduate standing.

**CESP 848. Crisis Counseling (3).** Introduces students to crisis intervention theory, development and applications. Provides an overview of crisis theories, assessment procedures, techniques and counseling processes used with adolescents and adults in school and community settings. Prerequisites: CLES 801, CESP 803, 804, or instructor's consent.

**CESP 852. Special Studies (1–4).** Covers specific topics identified by the department in consultation with institutions or groups of graduate students. Course procedures vary according to topic. Repeatable. Prerequisite: instructor's or departmental consent.

**CESP 853. Law, Ethics and Multicultural Issues for School Psychologists (3).** For school psychology students and practicing school psychologists. Covers issues of legislation, litigation, professional ethics and cultural diversity that impact the practice of school psychology. Prerequisite: admission to the school psychology program or instructor's consent.

**CESP 854. Evidence-Based Academic Assessment and Intervention (3).** Explores various applications of measures of cognitive processing and academic achievement in reading, writing and mathematics. Examines the classification systems of learning differences, their neurological bases, the administration and interpretation of selected processing and achievement measures, and critical issues related to provision of evidence-based interventions and services. Includes case simulation and practice activities. Prerequisites: CESP 704, 811 or 822, 820.

**CESP 855. Individual Intelligence Assessment (3).** 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 or 811, CESP 854, instructor's consent.

**CESP 856. Counseling Practicum (3).** Supervised practice in counseling. Supervised counseling practicum experiences that total a minimum of 100 clock hours over a full academic term with at least 40 clock hours of direct service with actual clients that contributes to the development of counseling skills. Repeatable for credit. Prerequisites: CESP 824 within the last 12 months, CESP 815 (or concurrent enrollment), 825, 845 (only for students pursuing a school counseling license), 857 (or concurrent enrollment), practicum coordinator's consent, and counseling major, or departmental consent. Prerequisites for school psychology students: CESP 824 within the last 12 months and departmental consent.

**CESP 857. Professional and Ethical Issues (3).** Covers major ethical, legal and professional issues involved in professional counseling, education and psychology. Students engage in dialog throughout the course and work in peer consultation teams to identify and resolve ethical dilemmas and adopt sound ethical and professional practices. Prerequisites: CESP 803, 821, 822, or instructor's consent.

**CESP 858. Diagnostic Testing (3).** An in-depth examination of the assessment process. Studies the theory and uses of individual assessment techniques for evaluating the learning difficulties of preschool and school-aged children. Emphasizes planning the assessment, interpreting and integrating assessment data, proposing relevant interventions, and communicating assessment findings to others. Prerequisites: CESP 854, 855, and instructor's consent.

**CESP 859. School-Based Interventions (3).** Focuses on planning, implementing, monitoring and evaluating interventions in the school setting with students who are experiencing academic and/or behavioral problems. Prerequisite: CESP 811 or 822, or departmental consent.

**CESP 860. Seminar in Research Problems (1).** Development and presentation of research proposals. Required of students enrolled in thesis programs.

**CESP 862. Presentation of Research (1–2).** A project submitted in thesis manuscript form. Repeatable for a maximum of 2 hours of credit. Prerequisite: CESP 860.

**CESP 865. Practicum in Play Therapy (3).** Students conduct and observe a series of play therapy sessions with children. Individual and group supervision is provided. Each student participates in analysis and discussion of therapy intervention strategies, completing session critiques and therapy plans. Prerequisites: master's degree in counseling or related field, CESP 841 or equivalent course, or program consent.

**CESP 875–876. Master's Thesis (2–2).** Prerequisite: CESP 860.

**CESP 890. Special Problems in Education (1–3).** Directed reading and research under the supervision of a graduate instructor. Prerequisite: departmental consent.

**CESP 914. Consultation Techniques (3).** Intensive study of the literature in counseling, school psychology, social psychology and administration that provides a basis for consultation techniques in the interpersonal context of school and work settings. Prerequisites: graduate standing and departmental consent.

**CESP 934. Personality Assessment (3).** Focuses on theory and interpretation of instruments representing three major approaches to personality assessment: projective techniques, behavioral techniques, and personality inventories. Includes alternative personality assessment approaches and reviews of personality theory and psychopathology. Includes supervised experience. Prerequisites: CESP 811 or 822, 855 (school psychology students only), postmaster's standing or last 6 hours of master's program and instructor's consent.

**CESP 946. Practicum in School Psychology (3 or 6).** Supervised practice in providing school psychological services to children in school, clinical or community agency settings. Requires at least 300 hours applied experience per 3 hours of credit. Repeatable for a maximum of 6 hours. Prerequisite: departmental consent.

**CESP 947. Internship in Counseling (2).** The internship is a placement appropriate to the intern's career objectives in a position within an agency, institution or school. The student and university supervisor develop goals and objectives that enhance the student's level of professional functioning. Repeatable up to 6 hours of credit.

**CESP 949. Clinical Mental Health Counseling Internship (3).** A minimum of 600 clock hours of supervised counseling experiences, including 240 hours of direct service with clients. Clinical setting must be approved and appropriate to the student's emphasis. The semester prior to enrollment, the student must complete the internship application process. Repeatable for credit. Graded *S/U*. Prerequisites: include all counseling core courses and completion of CESP 856.

**CESP 977. Internship in School Psychology (2).** Supervised experience as a school psychologist in a school or agency setting. Requires at least 600 hours of applied experience. Repeatable for a maximum of 4 hours. Prerequisites: CESP 946 and departmental consent.

## Counseling, Educational Leadership, Educational And School Psychology (CLES)

### Courses for Graduate Students Only

**CLES 801. Introduction to Educational Research (3).** Includes (1) the nature of research methodologies, (2) the preparation of research reports, (3) critical reading of research, and (4) ethics and integrity in conducting and reporting research. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Prerequisite: graduate standing.

**CLES 871. Foundations of Higher Education (3).** Explores the basic structures, history and purposes of higher education. In addition to addressing the issues that students identify, the course explores the development of the different systems of higher education, the different missions and goals of colleges and universities, the multiple sectors of higher education, and the roles and responsibilities of different stakeholders. Special attention is paid to the historical development of different institutional types and the experiences and expectations of different institutional and system members.

**CLES 872. Finance and Human Resources in Colleges and Universities (3).** Provides a basic overview of administrative functions related to funding, allocation and management of human and fiscal resources in higher education. Current practices, issues and challenges related to finance and human resource management in college and university settings are explored. Emphasis is placed on identifying meaning and implications of practices, and applying learning to practical situations as found in the field.

**CLES 873. College Student Development and the Campus Environment (3).** Explores the history, meaning and implications of student development theories. Emphasizes typologies, person-environment, psychosocial and cognitive theories, and the diversity of student populations served by student affairs. Special focus is on the application of theory and how it may provide a springboard for practice and further discovery.

**CLES 874. Legal and Ethical Issues in Higher Education (3).** Introduces students to the historical and contemporary legal issues affecting higher education in the United States. Designed to touch upon the multiple perspectives and various legal aspects of higher education, as well as to introduce a wide range of current issues. Intended for students in graduate programs emphasizing higher education as well as graduate students throughout the university interested in an introduction to the legal issues that have had an impact on the field of higher education.

**CLES 875. Practicum in Higher Education Leadership (3).** Designed to provide the student with an opportunity for observation and participation in a wide range of higher education leadership professional activities in an approved college setting, and as a means of integrating didactic experiences and information with actual experience under the supervision of qualified practitioners. Prerequisites: any two of CLES 871, 872, 873 or 874.

## Educational Leadership (EL)

### Courses for Graduate/Undergraduate Credit

**EL 750. Experienced Administrator's Workshop (1–6).** Offers a variety of administrative topics.

### Courses for Graduate Students Only

**EL 803. Introduction to Educational Leadership, Team-Based Collaboration, and Inquiry Process (3).** Participants engage in self-assessment and readiness for becoming a school administrator. Includes discussing and learning issues and techniques for measurement in the cognitive, affective and psychomotor domains. Also reviews the basics of educational research, the nature of research methodologies, and methods for the preparation of research reports. Prerequisite: admission to the MEd in educational leadership or instructor's consent.

**EL 813. Introduction to Educational Leadership (3).** Explores systems thinking in schools, leadership and interpersonal skills in the context of budgeting processes, crisis and safety planning, and other building-level educational issues. Examines theoretical concepts related to financial planning and teacher evaluation programs. Reviews knowledge necessary to plan and organize teams, projects, and the resources necessary to carry out day-to-day functional activities of school. Engages in simulated exercises to acquire interpersonal skills desirable for group collaboration and communication and leading change process. Conducts action research in school settings. Prerequisite: EL 803.

**EL 814. Instructional Leadership in a Systems Thinking Environment (3).** Focuses on curriculum, instruction, assessment and professional development through a framework of systems and organizational theory. Students examine theoretical concepts related to curriculum philosophies and developmental processes, review recent programs and proposals as well as curriculum development at the building and school system levels. Prerequisite: EL 813.

**EL 815. Building-Level Leadership Practicum I (3).** Spend time in schools identifying how major theories of administration apply to specific problems in the school and how the school interacts with the district and the community. Practice day-to-day activities of an educational leader in a systems-thinking, building-level setting. Focus on building collaboration skills and development of interpersonal skills. Prerequisite: EL 803. Corequisite: EL 813 (inquiry-based emphasis) or 814 (urban-based emphasis).

**EL 823. Changing the Culture in an Environment of Collaboration and Partnership (3).** Examines theoretical concepts of building relationships through effective interpersonal skills. Includes development of interpersonal skills that lead to success in collaborating and supervising staff and development of community relations to enhance support of schools. Explores change theory and its application in transforming the educational process and culture of a school. Engages in simulated exercises to acquire interpersonal skills desirable for group collaboration and communication and leading change process. Conducts action research in school settings. Prerequisites: EL 803, 813, 815.

**EL 824. Leadership for Managing the Urban Organization (3).** Focuses on critical areas of management in urban schools, including facilities, governance structures, budget, school safety and technology leadership. Students examine the operational procedures that support an effective learning environment in the school. Prerequisites: EL 825, and 823 or 831.

**EL 825. Building-Level Leadership Practicum II (3).** Spend time in schools identifying how major theories of administration apply to specific problems in the school and how the school interacts with the district and the community. Practice day-to-day activities of an educational leader in a systems-thinking, building-level setting. Practicum experiences encompass more advanced leadership activities than practiced during EL 815. Focus on change process, conflict resolution, staff supervision and building community partnerships. Prerequisites: EL 813 or 814, 815. Corequisite: EL 823 or 831.

**EL 831. Diversity and Social Justice (3).** Examines the role of school leadership in an increasingly complex and diverse society. Students investigate diversity in its various forms including race, ethnicity, language, gender, socioeconomic status, disability and religious beliefs. Students analyze inequities within societal, institutional and personal frameworks and engage in problem solving toward socially equitable educational practices and inclusive learning communities. Prerequisite: EL 825.

**EL 833. Seminar: School Law and Personnel Management (3).** Examines concepts related to staffing issues, including selection and recruitment, certification, orientation, staff development, evaluation, transfer and dismissal, and retirement. Covers general concepts of law, interpretations of statutes and court decisions affecting education, and the legal responsibilities of school personnel and professional negotiations. Prerequisites: admission to the MEd in educational leadership or instructor's consent, EL 813, 825.

**EL 834. Leading and Managing Personnel and Target Student Populations in an Urban District (3).** Focuses on school personnel management and school law related to specific student groups that populate an urban district. The legal aspects of schooling, particularly those faced by a building administrator are the major focus. Licensure, recruitment, selection, orientation, evaluation, staff development and compensation are addressed. Prerequisites: EL 823, 824.

**EL 835. Building-Level Leadership Practicum III (3).** Spend time in schools identifying how major theories of administration apply to specific problems in the school and how the school interacts with the district and the community. Practice day-to-day activities of an educational leader in a systems-thinking, building-level setting. Focus on application of concepts related to selection, recruitment, certification, orientation, staff development, evaluation, transfer, dismissal and retirement. Apply general legal concepts and statutes to various situations and personal/professional liability. Practicum experiences encompass advanced leadership activities. Third semester practicum includes broad and in-depth leadership activities. Prerequisites: EL 823, 825.

**EL 843. Seminar: Curriculum and Learning Theory (3).** Examines theoretical concepts related to curriculum philosophies and developmental processes. Examines recent programs and proposals as well as curriculum development at the building and school system levels. Reviews techniques of program evaluation and major learning theories and principles. Prerequisites: EL 813, 823, 835, admission to the MEd in educational leadership, or instructor's consent.

**EL 845. Building-Level Leadership Practicum IV (3).** Spend time in schools identifying how major theories of administration apply to specific problems in the school and how the school interacts with the district and the community. Practice day-to-day activities of an educational leader in a systems-thinking, building-level setting. Apply the concepts of curriculum theories and major learning theories and principles as they relate to academic and behavioral aspects of the classroom. Fourth semester practicum culminates in proficiency of building-level leadership experiences. Prerequisite: EL 835. Corequisite: EL 843 (inquiry-based emphasis), or 823 (urban-based emphasis).

**EL 852. Special Studies in Educational Administration and Supervision (1–3).** Group studies in new materials, new research or innovations in advanced educational administration and supervision areas for practicing administrators or advanced students. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

**EL 884. Leadership in Vision, Collaboration and Planning (3).** Candidates study multiple visioning and collaboration efforts for developing long-range, strategic planning in preparing for the future of preK through graduation learning environments. The evaluation of existing educational facilities is an important element and includes an overview of operations for such facilities. Prerequisite: master's degree or instructor's consent.

**EL 953. Financial Support of Education (3).** Focuses on the financial support of education at local, state and national levels. Emphasizes methods of taxation, budget preparation and efficient expenditures.

**EL 956. Human Services Leadership (3).** Designed for those students preparing to become district-level school administrators in general, and school superintendents in particular. Focuses on the selection, retention, development and evaluation of the panoply of personnel that comprise a typical school district. Particular emphasis is placed on hiring practices, staff development, conflict resolution and contract management. Prerequisite: admission into the district-level certification program.

**EL 963. Policy and Politics in Educational Leadership (3).** Investigates the relationship between society and school as it relates to the political process. Students examine the interaction and influence of federal, state and local policies and politics on educational decision making and how the implementation of laws and policies occurs at the district level. Students examine the pressures applied by diverse stakeholder and interest groups that have differential access to power that result in conflicts over educational processes. Students analyze systems of power and control as they relate to the various statuses afforded different groups in U.S. society.

**EL 964. Administration & Supervision of Special Education (3).** Provides district-level administrators with understanding of federal and state laws that apply to students with exceptionalities, and information related to the legal, instructional and administrative aspects of special education. Covers the mobilization of community resources to support quality education for all children. Addresses practical ethical dimensions of district-level leadership by providing a framework for reflection and deliberation. Explores the various ecological contexts of the family, school and community. Prerequisite: admission to district-level program.

**EL 968. Technology Orientation (1).** Provides new doctoral candidates with an orientation on the application of a variety of modern communication technologies and software packages to successful completion of the doctoral program in educational leadership. Prerequisite: admission to the EdD program.

**EL 969. Introduction to Educational Research and Academic Writing (3).** Introduces students to ethical standards of educational research, the various research traditions and methodologies employed in the conduct of educational research. Students learn to conduct a literature review using both library and online search tools, to discriminate among the types of published works available, to critically read research and related literature, to develop an understanding of academic writing conventions and expectations, and develop facility with APA 6 style. Partially fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Prerequisite: admission to the EdD program in EL.

**EL 970. Theoretical Research Perspectives and Applications for Educational Leadership (3).** Examines the relationship between theory and practice in educational leadership. Participants consider various theoretical frameworks for empirical studies, program designs and organizational implementation efforts, and take initial steps toward an integration of those frameworks. Prerequisite: admission to the EdD program in EL.

**EL 971. Contemporary Policy and Organizational Theories in Education (3).** Focuses on contemporary theories of policy and organization, and their application to P–16 educational organizations. Major theories studied include organizational culture, organizational learning, and organizational sensemaking. Critical, feminist and postmodern policy and organizational theoretical perspectives are also examined. Prerequisites: admission to the EdD program, EL 970, 981, concurrent enrollment in EL 982.

**EL 972. Leadership Theories Seminar (3).** Facilitates in-depth investigations of leadership theories and their application to research and practice. Prerequisites: admission to the EdD program, EL 970, 971, concurrent enrollment in EL 986.

**EL 981. Introduction to Field-Based Research I (5).** Provides doctoral students with an introduction to field-based inquiry/problem-solving strategies; begins the development of field-based problems/issues, and provides practice in field research design, implementation and reporting. Prerequisite: admission to the EdD program in EL.

**EL 982. Introduction to Field-Based Research II (5).** Continues EL 981 and provides opportunities for more sophisticated and complex field-based studies. Prerequisite: admission to the EdD program in EL.

**EL 983. Research Proposal Development (3).** Focuses on developing the individual dissertation research proposal, particularly conceptualizing the research problem and research questions, expanding the literature review, and identifying potential research designs. Prerequisites: admission to the EdD program or instructor's consent, EL 981, 982.

**EL 984. Theoretical Frameworks for Organizational Analysis (3).** Introduces doctoral students to the theoretical frameworks and constructs that have an effect on educational organizations. Students study appreciative inquiry, action research and social capital. Students learn to apply these frameworks and constructs to forthcoming field studies as well as consideration as a lens for viewing the dissertation. Prerequisites: EL 970, 971, 981, 982. Corequisite: EL 983.

**EL 986. Advanced Field-Based Research I (5).** Provides advanced doctoral students with opportunities to increase their knowledge and experience with field-based research. Prerequisites: admission to the EdD program, EL 981, 982, 983, concurrent enrollment in EL 972.

**EL 987. Advanced Field-Based Research II (3).** Provides advanced doctoral students with opportunities to increase their knowledge and experience with field-based research. Prerequisites: admission to EdD program, EL 983, 986.

**EL 989. Research Design (3).** Students develop research design techniques appropriate for use in educational leadership doctoral dissertation proposals. Prerequisites: EL 981, 982, 983, 986.

**EL 990. Special Problems in Administration (1–4).** Directed problems in research for specialist and doctoral degree students under supervision of a graduate instructor. Prerequisite: instructor's consent.

**EL 992. Superintendency/Internship (3+3).** Two-semester course designed for candidates/interns who are completing program coursework to obtain licensure as district-level school leaders. A research based analysis for a long-term change project is designed by each student based on their projected leadership interest. Requirements focus on role expectations of district-level leaders and include field experiences designed to emphasize knowledge and performance skills and functions of the respective standards in leadership practices and procedures. Capstone course for the program. Prerequisite: instructor's consent.

**EL 999. Dissertation Research (2–6).** Provides students with dissertation proposal and dissertation advisement and may be taken for 2–6 credits per semester for a maximum of 24 credits. Up to 15 credits may be counted toward program completion. Graded *S/U*. Prerequisites: admission to EdD program in educational leadership, required coursework, and successful completion of comprehensive examinations.

# Curriculum & Instruction (CI)

**Graduate Faculty**

*Professors*: Shirley Lefever (dean), Jeri A. Carroll

*Associate Professors*: Mara Alagic (graduate coordinator for MEd in L&ID), Daniel Bergman, Katherine Cramer, Janice Ewing (graduate coordinator for MAT programs), Fuchang Liu, Johnnie Thompson, Anh Tran

*Assistant Professors:* Michelle Adler, Jaewhan Byun, Brenna Haines, Ashlie Jack (assistant dean), Soon Chun Lee, Gayla Lohfink, Aaron Rife, Donna Sayman, Jennifer Stone

*Senior Fellow:* Jim Granada

## Degrees and Areas of Specialization

The department of curriculum and instruction offers courses of study leading to the Master of Education (MEd) in learning and instructional design, and the MEd in special education (high incidence, early childhood unified, low incidence and gifted). A Master of Arts in Teaching (MAT) is offered for students seeking an initial license through an alternative licensure program. For those already holding a teaching certificate or license, C&I offers endorsements in reading, ESOL, library media and special education areas (high incidence, low incidence and gifted). For those licensed in elementary education, an early childhood unified endorsement is also available.

Graduate certificates are offered in educational technology, interdisciplinary STEM education, and literacy.

## Admission Requirements

In addition to the Graduate School admission requirements, students seeking the MEd in learning and instructional design must meet both of the following criteria:

1. Show potential to do graduate work by meeting one or more of the following:
   a. Graduate from the WSU teacher education program with a minimum GPA of 2.750 in the last 60 credit hours; *or*
   b. Graduate from an NCATE accredited program with a 3.000 or better GPA in the last 60 credit hours; *or*
   c. GPA in last 60 hours of at least 2.750 and GRE scores of at least 152 in Verbal and 153 in Quantitative; *or*
   d. Provide alternative evidence that documents academic aptitude.
2. Provide evidence of involvement in teaching, training and/or program design, or recommendation by the graduate program committee.

The special education degree with an emphasis in high incidence, low incidence and gifted is available for individuals certified at the elementary and/or secondary level (K–9, 7–12, or K–12) or licensed to teach children (early childhood through late childhood, late childhood through early adolescence, or early adolescence through late adolescence and adulthood). The special education degree with an emphasis in early childhood unified is also available for individuals who are certified to teach young children (birth to age 8). Admission requirements include:

1. GPA of 3.000 or higher in the last 60 hours; or GPA of at least 2.750 and official GRE scores of at least 152 in Verbal and 153 in Quantitative.
2. Full admission to WSU Graduate School.
3. Current teaching certificate/license (or eligible for a certificate/license).

Applications are evaluated when received for the MEd in special education. Only a limited number of students are accepted into this program each year.

In addition to the above requirements, students in the MAT transition to teaching track must have an undergraduate degree in a content licensure field (i.e., biology, chemistry, mathematics, etc.) and meet eligibility requirements for a Kansas State Department of Education (KSDE) restricted license. This practice-to-theory model requires students to have a signed teaching contract from an accredited school district to be eligible for a restricted license and to participate in coursework.

Students in the MAT ECU residency track must have an undergraduate degree in a related field and be employed with one of the Wichita State University partnership agencies. Applicants to the MAT ECU residency and MAT middle/secondary resident programs must pass a criminal background check that they obtain at their own expense. Information regarding the approved background check service provider is available from Education Support Services.

## Master of Education Requirements

***The Master of Education in learning and instructional design*** is a 36 credit hour program. The program is offered for students who meet the admission requirements and are seeking a graduate level degree in curriculum and instruction. The core curriculum consists of 21 credit hours of work in curriculum and instruction, 3 credit hours of thesis or nonthesis work and 12 credit hours of electives.

*Required Courses* ..... *(21 hrs.)*

| | | |
|---|---|---|
| CI 794 | Diversity and Culture in a Global Society | 3 |
| CI 795 | Change, Creativity & Innovation | 3 |
| CI 880 | Learning Theory & Curriculum Design | 3 |
| CI 881 | Instructional Theory | 3 |
| CI 884 | Inquiry into Instructional Practice: Part 1 | 3 |
| CI 885 | Inquiry into Instructional Practice: Part 2 | 3 |
| CI 893 | Instructional Leadership: Professional and Collaboration | 3 |

*Thesis or Nonthesis Option Requirements* ..... *(3 hrs.)*

| | | |
|---|---|---|
| CI 862 | Evidence-Based Inquiry: Capstone Project Proposal | 1 |
| CI 863 | Evidence-Based Inquiry: Capstone Project | 1 |
| *or* | | |
| CI 875 | Master's Thesis | 1 |
| CI 876 | Master's Thesis | 1 |

*Electives* ..... *(12 hrs.)*

Electives based on personal professional interest and approved by the advisor.

***The Master of Education in special education*** may be earned under a thesis or nonthesis option. Each option requires 33–35 credit hours (gifted and early childhood unified—33 hours; high incidence and low incidence—35 credit hours) of coursework, practical experience, and the culminating experience (i.e., thesis or nonthesis).

For students pursuing the MEd in special education, there are specific required courses based on the student's chosen emphasis area, as described below. In addition, all students must complete the research component.

*Required Courses—Early Childhood Unified*

| | | |
|---|---|---|
| CI 603 | Foundations of Early Childhood Unified | 2 |
| CI 614 | ECU Assessment and Methods: Infants, Toddlers & Families | 3 |
| CI 617 | ECU Assessment and Methods: Preschool | 3 |
| CI 703 | Assessment and Methods: K–3 | 3 |
| CI 796 | Family and Professional Collaboration | 3 |
| *Practicum* | | *10 hrs.* |
| CI 847KG | Practicum/Field Experience in ECU: K–3 | 3–4 |
| CI 847IT | Practicum/Field Experience in ECU: Infant/Toddler | 3–4 |
| CI 847P | Practicum/Field Experience in ECU: Preschool | 3–4 |
| CI 851 | Special Education Research | 2 |

*Required Courses—Gifted*

| | | |
|---|---|---|
| CI 719 | Foundations of Special Ed. | 1 |
| CI 722 | Characteristics: Gifted Learning Needs | 2 |
| CI 737 | Methods/Assessment: Gifted | 3 |
| CI 749G | Practicum: Gifted | 3 |
| CI 796 | Family and Professional Collaboration | 3 |
| CI 814 | Advanced Methods: Gifted | 2 |
| CI 814A | Internship/Practicum: Advanced Methods Gifted | 1 |
| CI 816 | Advanced Methods: Developing Critical & Creative Thought | 2 |
| CI 816A | Internship: Developing Critical & Creative Thought | 1 |
| CI 818 | Positive Behavior Supports for Students with Exceptionalities | 3 |
| CI 818A | Internship/Practicum: Positive Behavior Supports | 1 |
| CI 822 | Principles of Nondiscriminatory Assessment for Students with Exceptionalities | 2 |
| CI 851 | Special Education Research | 2 |

*Required Courses—High Incidence*

| | | |
|---|---|---|
| CI 719 | Foundations of Special Ed. | 1 |
| CI 720 | Characteristics: High-Incidence/ Low-Incidence Learning Needs | 2 |
| CI 724 | Intro. to Teaching Strategies for Students with Mild/Moderate Disabilities | 3 |
| CI 749A | Practicum: High-incidence Learners | 3 |
| CI 796 | Family and Professional Collaboration | 3 |
| CI 812 | Transition Across the Life Span | 2 |
| CI 815 | Adv. Teaching Strategies for Students with Mild/Moderate Disabilities | 2 |
| CI 815A | Internship/Practicum: Advanced Teaching Strategies for Students with Mild/Moderate Disabilities | 1 |
| CI 817 | Language to Literacy: Meeting Needs of Students with Disabilities | 2 |
| CI 817A | Internship/Practicum: Language to Literacy | 1 |
| CI 818 | Positive Behavior Supports for Students with Exceptionalities | 3 |
| CI 818A | Internship/Practicum: Positive Behavior Supports | 1 |
| CI 822 | Principles of Nondiscriminatory Assessment for Students with Exceptionalities | 2 |
| CI 851 | Special Education Research | 2 |

*Required Courses—Low Incidence*

| | | |
|---|---|---|
| CI 719 | Foundations of Special Ed. | 1 |
| CI 720 | Characteristics: High-Incidence/ Low-Incidence Learning Needs | 2 |
| CI 742 | Intro. to Teaching Strategies for Students with Severe/ Multiple Disabilities | 3 |
| CI 749F | Practicum: Low-incidence Learners | 3 |
| CI 796 | Family and Professional Collaboration | 3 |
| CI 812 | Transition Across the Life Span | 2 |
| CI 818 | Positive Behavior Supports for Students with Exceptionalities | 3 |
| CI 818A | Internship/Practicum: Positive Behavior Supports | 1 |
| CI 819 | Nonsymbolic & Symbolic Communication | 2 |
| CI 819A | Internship/Practicum: Communication | 1 |
| CI 820 | Adv. Teaching Strategies for Students with Severe and Multiple Disabilities | 2 |
| CI 820A | Internship/Practicum: Low Incidence Learning Needs | 1 |
| CI 822 | Principles of Nondiscriminatory Assessment for Students with Exceptionalities | 2 |
| CI 851 | Special Education Research | 2 |

*Research Component—All Emphases*

| | | |
|---|---|---|
| CESP 704 | Introduction to Educational Statistics | 3 |
| *or* | | |
| CI 717 | Qualitative Inquiry in Ed. | 3 |
| *or* | | |
| CLES 801 | Introduction to Educational Research | 3 |
| *and* | | |
| CI 862 | Evidence-Based Inquiry: Capstone Project Proposal | 1–2 |
| CI 863 | Evidence-Based Inquiry: Capstone Project | 1–2 |

*or*

| | | |
|---|---|---|
| CI 875 | Master's Thesis | 1–2 |
| CI 876 | Master's Thesis | 1–2 |

Candidates may elect to complete only an endorsement in an emphasis area in the special education program (gifted—26 credit hours, early childhood unified—24 credit hours; high incidence and low incidence—28 credit hours).

## Master of Arts Requirements

The Master of Arts in Teaching (MAT) program theory to practice model offers three tracks - the Transition to Teaching (T2T) track, the Early Childhood Unified Residency (ECU-R) track, and the Middle Level/Secondary Residency (ML/S) track.

### Master of Arts in Teaching (MAT) Transition to Teaching Track

The Master of Arts in Teaching (MAT) transition to teaching track is a 36-credit-hour program. The program is offered for students seeking an initial license through an alternative licensure program. The core curriculum consists of 21 hours of child/adolescent development and pedagogy, 11 hours of research and reflection and 4 hours of internship with university supervisors provided. Within the 11 hours of research, students are required to complete either an action research portfolio or a master's thesis.

*Required Courses*

| | | |
|---|---|---|
| CESP 728 | Theories of Human Dev. | 3 |
| CI 615 | Learning & Reading Strategies | 2 |
| CI 701 | Foundations of Education | 2 |
| CI 702 | Intro. to Exceptional Children | 3 |
| CI 711 | Multicultural Education | 3 |
| CI 743 | Transition to Teaching or Residency Internship I | 1 |
| CI 744 | Transition to Teaching or Residency Internship II | 1 |
| CI 748 | Transition to Teaching or Residency Internship III | 1 |
| CI 749 | Transition to Teaching or Residency Internship IV | 1 |
| CI 760A | Creating an Effective Classroom | 2 |
| CI 761A | Instructional Planning & Technology | 2 |
| CI 769 | Instructional Strategies, Technology Integration and Assessment | 2 |
| CI 845 | Curriculum Models & Practices | 2 |
| CI 848 | Analysis and Reflection | 2 |
| CI 849 | Practices & Trends in Action Research | 2 |
| CLES 801 | Intro. to Educational Research | 3 |

*Capstone Courses*

| | | |
|---|---|---|
| CI 860 | Seminar in Research Problems | 2 |
| CI 862 | Evidence-Based Inquiry: Capstone Project Proposal | 1 |
| CI 863 | Evidence-Based Inquiry: Capstone Project | 1 |

*or*

| | | |
|---|---|---|
| CI 875 | Master's Thesis | 1 |
| CI 876 | Master's Thesis | 1 |

### Master of Arts in Teaching (MAT) Early Childhood Unified Residency

Master of Arts in Teaching (MAT) early childhood unified residency (ECU-R) track is offered for students seeking initial KSDE license in early childhood unified: birth–third grade. The graduate level initial licensure program consists of 36 credit hours. The core curriculum consists of 21 hours of child development and pedagogy, 11 hours of research and reflection and 4 hours of internship with university supervisors provided. Within the 11 hours of research, students are required to complete either an action research portfolio or a master's thesis.

*Required Courses*

| | | |
|---|---|---|
| CESP 729 | Theories of Early Childhood Development | 3 |
| CI 603 | Foundations of Early Childhood Unified | 2 |
| CI 614 | ECU Assess. & Methods: Infants, Toddlers & Families | 3 |
| CI 617 | ECU Assess. & Methods: Preschool | 3 |
| CI 701 | Foundations of Education | 2 |
| CI 704 | Assess. & Methods: K–1 | 3 |
| CI 711 | Multicultural Education | 3 |
| CI 733 | Assess. & Methods: Grades 2–3 | 4 |
| CI 743 | Transition to Teaching or Residency Internship I | 1 |
| CI 744 | Transition to Teaching or Residency Internship II | 1 |
| CI 748 | Transition to Teaching or Residency Internship III | 1 |
| CI 749 | Transition to Teaching or Residency Internship IV | 1 |
| CI 849 | Practices & Trends in Action Research | 2 |
| CLES 801 | Intro. to Educational Research | 3 |

*Capstone Courses*

| | | |
|---|---|---|
| CI 860 | Seminar in Research Problems | 2 |
| CI 862 | Evidence-Based Inquiry: Capstone Project Proposal | 1 |
| CI 863 | Evidence-Based Inquiry: Capstone Project | 1 |

*or*

| | | |
|---|---|---|
| CI 875 | Master's Thesis | 1 |
| CI 876 | Master's Thesis | 1 |

### Master of Arts in Teaching (MAT) Middle Level/Secondary Residency

The Master of Arts in Teaching (MAT) middle level/secondary residency track is offered for students seeking initial licensure in middle level (grades 5–8) and secondary (grades 6–12) education. The graduate level initial licensure program consists of 36 credit hours. The core curriculum for the middle level/secondary residency consists of 22 hours of child/adolescent development and pedagogy, 10 hours of research and reflection, and 4 hours of internship with university supervisors provided. Within the 10 hours of research, students may choose either the thesis or nonthesis research option.

*Required Courses*

| | | |
|---|---|---|
| CESP 728 | Theories of Human Dev. | 3 |
| CI 615 | Learning & Reading Strategies | 2 |
| CI 654_ | Instructional Methods in Middle Level/Secondary Education | 1 |
| CI 701 | Foundations of Education | 2 |
| CI 702 | Intro. to Exceptional Children | 3 |
| CI 711 | Multicultural Education | 3 |
| CI 743* | Transition to Teaching or Residency Internship I | 1 |
| CI 744* | Transition to Teaching or Residency Internship II | 1 |
| CI 748* | Transition to Teaching or Residency Internship III | 1 |
| CI 749 | Transition to Teaching or Residency Internship IV | 1 |
| CI 760A | Creating an Effective Classroom | 2 |
| CI 761A | Instructional Planning & Technology | 2 |
| CI 769 | Instructional Strategies, Technology Integration and Assessment | 2 |
| CI 845 | Curriculum Models & Practices | 2 |
| CI 848 | Analysis and Reflection | 2 |
| CI 849 | Practices & Trends in Action Research | 2 |
| CLES 801 | Intro. to Educational Research | 3 |

*Capstone Courses*

| | | |
|---|---|---|
| CI 860 | Seminar in Research Problems | 2 |
| CI 862 | Evidence-Based Inquiry: Capstone Project Proposal | 1 |
| CI 863 | Evidence-Based Inquiry: Capstone Project | 1 |

*or*

| | | |
|---|---|---|
| CI 875 | Master's Thesis | 1 |
| CI 876 | Master's Thesis | 1 |

*Students may opt to compete CI 781 Cooperative Education with approval from advisor.

#### *Graduate Certificate in Educational Technology*

This program offers information and communication technology training to educators who wish to advance their knowledge of information technology in education, integrate technology into classroom instruction, and use technology for communication and professional productivity. While providing documentation that educators have achieved some expertise in the information and communication technology area, it can assist those seeking such positions as technology coordinator in a school. The 15 hours of courses or workshops cover basic skills, integrating information and communication technology skills, and subject matter-specific topics to address the changing needs of educators.

#### *Graduate Certificate in Interdisciplinary STEM Education*

The interdisciplinary STEM education graduate certificate is designed for STEM professionals, educators and graduate students interested in designing and/or teaching an interdisciplinary STEM curriculum. Students in the program build interdisciplinary academic skills in context with an emphasis on real world problem

solving, critical thinking and career readiness. The curriculum is developed in a way that facilitates key features to effective interdisciplinary STEM curriculum preparation, induction and implementation including models and characteristics that guarantee quality curricula. The certificate comprises 18 credit hours in the following way; (1) entry course, 3 hrs.; (2) selected STEM courses for an individualized pathway, 12 hrs.; and (3) exit/capstone course 3 hrs.

### *Graduate Certificate in Literacy*

This program provides graduate level studies in literacy for educators who wish to (1) advance their knowledge and skills of teaching literacy in the classroom, and (2) integrate literacy into all content areas. It provides advanced study for teachers and educators seeking lead positions in buildings where literacy is a focus for federal legislation and state accreditation.

To meet the varied needs of elementary and secondary teachers, two strands are provided: (1) early childhood/elementary, and (2) middle level/secondary. In each strand, students must take 15 hours of coursework: 9 hours of required coursework and 6 hours of electives. No more than 5 hours can be included that are graded *S/U*.

**Courses for Graduate/Undergraduate Credit**

**CI 501. Professional Writing for Educators (1–3).** Helps students learn the writing skills, techniques and typical procedures required for developing manuscripts for possible publication in the field of education. Addresses manuscripts for a variety of publication outlets.

**CI 503. Mathematics for High School Teachers (3).** Capstone course in secondary mathematics education designed to prepare secondary mathematics education majors for a career in high school teaching by examining secondary school mathematics from an advanced, mathematical point of view. Topics covered are rooted in core secondary curriculum including number and operations, algebra, geometry, functions and statistics. Students draw connections between ideas taught separately in different mathematics courses as they explore familiar high school level mathematics problems. Open to education majors only. *Course includes diversity content.* Prerequisites: MATH 321, 344, 415, 511, 513, 531, 615, 621, STAT 460 (with a grade point of 2.000 or better, or instructor's consent).

**CI 505. Science, Technology and Society (1).** Investigates the relationships between science and technology, and the effects of both on our past and present society/culture.

**CI 519. Mathematical Investigations (3).** Based on the NCTM principles and standards for school mathematics focusing on process standards: problem solving, reasoning and proof, communication, connections and multiple representations. Students gain an active understanding of problem posing and problem solving in mathematics, as well as a familiarity with heuristics of problem solving. Course integrates appropriate educational technology tools and instructional strategies for students with special needs including English Language Learners (ELL). Prerequisite: MATH 501 with a grade of 2.000 or better, or instructor's consent.

**CI 541. Desktop Publishing I (3).** Desktop publishers control the entire publishing process, from creation and typesetting to printing and distribution, with desktop equipment. Word processing on the personal computer and laser printing are the two technological achievements that make possible a desktop publishing revolution. Stresses type design, harmony, legibility, copy fitting and layout fundamentals.

**CI 542. Desktop Publishing II (3).** An intermediate-level course which enhances, enriches and develops further skills and techniques used in desktop publishing. Students select software packages in which they need additional depth toward master-level. Prerequisite: CI 541.

**CI 603. Foundations of Early Childhood Unified (2).** An introduction to working with young children (including those developing normally, those at risk due to environmental and biological issues, and those with special needs), their families, and professionals in community schools, agencies and programs. Emphasizes professional development, positive dispositions, early childhood learning environments and early childhood professional standards. Examines the ECU professions, characteristics of good teaching, the nature of teacher education and basic historical and philosophical foundations of ECU education. Prerequisite: CI 270.

**CI 614. ECU Assessment and Methods: Infants, Toddlers and Families (3).** Provides knowledge, skills and dispositions for candidates regarding developmental principles, evaluation/assessment, and the development of services, supports and accommodations for infants/toddlers (birth through age 2) and their families. Includes competencies within both the early childhood and early childhood special education fields. Prerequisite: CI 603. Corequisite: CI 614I (undergraduates only).

**CI 614I. ECU Pre Student Teaching: Infants, Toddlers and Families (2).** Candidates participate in pre student teaching opportunities located in natural settings (e.g., within homes and the community) that include young children from birth through age 2 and their families. Candidates work with a cooperating teacher, other professionals and a university supervisor to plan, implement and assess services and supports for young children and their families. Prerequisite: CI 603. Corequisite: CI 614 (undergraduates only).

**CI 615. Learning and Reading Strategies (2–3).** Students are provided with an understanding of the development of learning and reading strategies and explore instructional approaches for guiding secondary students in those strategies and their use in content areas.

**CI 616. Literature for Adolescents (3).** Students expand their knowledge of strategies for helping culturally, developmentally and linguistically diverse students comprehend and construct meaning from texts using appropriate education technology and face-to-face instructional techniques. Includes extensive reading of classic and contemporary young adult literature in all genres. Prerequisite: acceptance into teacher education. Currently and previously certified teachers meet prerequisites.

**CI 617. ECU Assessment & Methods: Preschool (3).** Provides knowledge, skills and dispositions for teacher candidates regarding development and learning at the preschool level (ages 3–5). Candidates learn to link theory and evidence-based practices to the preparation of the learning environment, the curriculum and instructional methods that are appropriate for all children. Includes methods of screening and evaluation, adaptations and accommodations, and interventions to meet individual child needs, including those with exceptionalities. Prerequisite: CI 603. Corequisite: CI 617P (undergraduates).

**CI 617P. ECU Pre Student Teaching: Preschool (2).** Candidates participate in pre student teaching field-based experiences in preschool settings that include children from ages 3–5. Candidates work with cooperating teachers, other professionals and a university supervisor to plan, implement and assess services and supports for young children. Prerequisite: CI 603. Corequisite: CI 617 (undergraduates).

**CI 621. Instructional Strategies: Middle-Level Education (3).** Students examine the middle grades school as an organization that takes its design specifically from the analysis of 10–14-year-olds, their characteristics and needs. Students examine many curricular and instructional alternatives for middle grades education and learn to manage changes.

**CI 654. Instructional Methods in Middle Level/Secondary Education (1–3). E-English, J-History, M-Mathematics, S-Science.** Acquaints current or potential educators with the concepts and skills necessary to meet the needs of students in middle level and/or secondary education. Focuses on content specific pedagogy as it relates to classroom instruction, management and assessment or adaptations. Prerequisite: teaching license or admission to the Master of Arts in Teaching.

**CI 701. Foundations of Education (2).** Students survey the various foundations areas, including philosophical, historical, social and comparative. This course is prerequisite to subsequent foundations courses. Prerequisite: graduate standing.

**CI 702. Introduction to Exceptional Children (3).** A survey of the characteristics of exceptional learners, including the handicapped and the gifted. Presents service delivery models and current practices. Fulfills certification requirements for teachers and serves as an introductory course in exceptionality for special education majors, administrators and school psychologists. Prerequisite: bachelor's degree or departmental consent.

**CI 703. Assessment and Methods: K–3 (3).** Provides knowledge, skills and dispositions for candidates working with families and young children from kindergarten through grade three. Covers theory, methodology, screening, evaluation, assessment and instructional practices, including adaptations/modifications/assistive technology of general education curriculum/instruction for young children both with and without delays/diagnosed disabilities. Prerequisites: CI 603, and at least one of the following: CI 402J, 402S, or 402M; or hold an elementary teaching license.

**CI 704. Assessment and Methods: K–1 (3).** Provides knowledge, skills and dispositions for candidates working with families and young children from kindergarten through first grade. Covers theory, methodology, screening, evaluation, assessment and instructional practices, including adaptations and modifications for all young children, including English language learners and those with and without delays/diagnosed disabilities. Prerequisite: CI 603. Corequisite: CI 748.

**CI 705. Knowledge and Beliefs About Reading (3).** Helps students understand the theories of reading development, individual student differences, the nature of reading difficulties and principles of assessment. Includes the standards developed by the International Reading Association concerning knowledge and beliefs about reading as the learning outcome. Prerequisite: graduate standing.

**CI 706. Reflective Inquiry into Learning, Teaching and Schools (5).** Fosters the reflective thinking ability of teachers about the relationships among learning,

teaching and schools. Explores various frameworks of growth and development, learning theory, social and multicultural education, and philosophical foundations. Students are engaged in initial reading and investigation into individualized research topics. Prerequisites: admission to graduate school, CLES 801.

**CI 708. Current Topics in Curriculum (1–3).** Addresses a broad range of topical issues in curriculum development and implementation. A current issue is covered under this course number, an umbrella number for a variety of topics/innovations in curriculum. Repeatable.

**CI 709. Current Topics in Instruction (1–3).** Addresses a broad range of topical issues in current practices for effective instruction. A current issue is covered under this course number, an umbrella number for a variety of topics/innovations in instructional practices. Repeatable.

**CI 711. Multicultural Education (3).** Emphasizes students understanding multiple perspectives in a global society and developing multiple modality, culturally aware curriculum experiences. Provides disciplined inquiry and critical experience *to become more responsive to the human condition, cultural integrity, and cultural pluralism in society* (NCATE, 1982, p. 14). Emphasizes diversity issues in education and the development of a knowledge base to support culturally responsible pedagogy. Prerequisite: graduate standing or departmental consent.

**CI 714. Reading Instruction and Assessment (3).** Helps students create instructional environments; teaches phonemic awareness, word identification (including phonics), vocabulary-building skills, strategies for comprehension and the construction of meaning, reading and writing fluency, and study strategies; and assesses student performance and progress. Prerequisite: CI 705 or departmental consent.

**CI 716. Introduction to the School Library (2).** An introduction to the role of the library and the library teacher in the school. An overview of issues affecting libraries and library teachers is presented. Prerequisite: teacher certification/license.

**CI 717. Qualitative Inquiry in Education (3).** Through readings and guided experiences in acts of inquiry in qualitative research, students acquire the disposition of a reflective inquirer, becoming familiar with the knowledge base for qualitative inquiry. Prerequisite: instructor's consent.

**CI 719. Foundations of Special Education (1).** Addresses the basic foundations of special education across exceptionality areas. Discusses a general history of special education and its relationship to general education trends (as well as the disability movement as a whole). Covers important special education legislation and regulations, the role litigation has played in the development of the discipline, and ethical issues in the provision of special education services. The continuum of services are explored along with roles/responsibilities of special and general educators in relation to students with exceptionalities, especially within inclusive settings. Prerequisite: acceptance into teacher education or completion of a teacher licensure program in general education. Corequisite: CI 720 or 722.

**CI 720. Characteristics: High-Incidence/Low-Incidence Learning Needs (2).** Explains the cognitive, communicative, social/emotional, sensory and physical characteristics of students with mild to severe disabilities and how these characteristics influence planning and instruction. Examines roles of students, professionals and families in meeting student needs. Discusses current developments in the field of special education that pertain to working with students with high and low-incidence learning needs. Prerequisites: CI 311, 320, and acceptance into teacher education or completion of an undergraduate teacher education licensure program. Corequisite: CI 719.

**CI 722. Characteristics: Gifted Learning Needs (2).** Introduces the field of gifted education. Explores theories of intelligence, identification, characteristics and learning needs, special populations, curriculum differentialization and underachievement. Prerequisites: CI 311, 320, acceptance into teacher education or completion of a licensure program in general education. Corequisite: CI 719.

**CI 724. Introduction to Teaching Strategies for Students With Mild/Moderate Disabilities (3).** Examines introductory assessments, curriculum and instruction related to students with mild and moderate learning needs. Includes competencies for (a) developing individual educational plans, (b) assessment for culturally responsive models of instructional planning, (c) planning and delivering research-validated individualized instruction, (d) monitoring and basing instructional decisions on performance data, (e) managing safe and conductive learning environments, and (f) strategies for working with students with adaptive learning needs in general and special education environments. Prerequisites: CI 719, 720 or instructor's consent.

**CI 725. Improvement of Instruction in Science (3).** Assists teachers in improving the way they teach science and the way their students learn science. Includes instructional strategies, curriculum, research and technology. Prerequisite: CI 402S or 454S.

**CI 726. Information Technologies in the School Library I (2).** Introduces a wide range of computer applications, including word processing, database, spreadsheet and presentation software to create and manage information in the library. Covers the use of the Internet, options for filtering Internet content, Internet user policies and basic Web page design. Includes basic computer and software troubleshooting, installation and removal of software, and computer security issues. Prerequisite: Windows 95 or equivalent skills, CI 716.

**CI 727. Technology in the School Library II (2).** An introduction to a wide range of technologies and equipment in the school library. Covers selection and purchase as well as basic maintenance and repair of equipment. Includes the basis of local area network design. Students learn the basics of media production and strategies for teaching media production to students. Students also look at the future of technology in school libraries. Prerequisite: CI 726.

**CI 728. Cataloging (2).** An introduction to cataloging materials for the school library. Includes cataloging print and nonprint materials in US MARC format, assigning Dewey Decimal classification numbers, assigning Library of Congress subject headings; sources for cataloging records, and the importance of authority control in the library.

**CI 729. Reference Materials & Collection Development (2).** Provides students with skills in evaluating and selecting library materials. Presents methods of evaluating and using indexes, bibliographies, encyclopedias, dictionaries and other print and electronic media, including the Internet.

**CI 730. Curriculum in the School Library (2).** Comprehensively designed to give students knowledge about the role of the school library in the curriculum development process. Addresses how the school library teacher collaboratively develops and integrates information literacy and content area standards into library and classroom activities. Prerequisite: CI 716.

**CI 731. The Reflective and Inquiring Educator (6).** Builds a foundation for reflective thinking about (a) the role of the educational practitioner; (b) educational issues in curriculum, instruction and change theory; and (c) principles and application of teacher-based action research. Prerequisite: admission to MEd in curriculum and instruction.

**CI 732. Library Management and Design (2).** An introduction to a wide range of technologies and equipment in the school library. Covers selection and purchase as well as basic maintenance and repair of equipment. Includes the basis of local area network design. Students learn the basics of media production and strategies for teaching media production to students. Students also look at the future of technology in school libraries. Prerequisites: CI 716, 726, 728, 730.

**CI 733. Assessment and Methods: Grades 2–3 (4).** Provides knowledge, skills and dispositions for candidates working with families and young children in second and third grade. Covers theory, methodology, screening, evaluation, assessment and instructional practices, including adaptations and modifications for all young children, including English language learners and those with and without delays/diagnosed disabilities. Prerequisites: CI 603, 704. Corequisite: CI 749.

**CI 734. Literature-Based Reading Programs (3).** Students examine specific methods for developing a literature program with children (preschool–elementary years) emphasizing extending literature and media through the reading environment, language arts, the arts and creative expression. Prerequisites: CI 705, graduate standing.

**CI 736. Organizing a Reading Program (3).** Helps students communicate information about reading to various groups, develop literacy curricula, participate in or lead professional development programs, participate in or conduct research, collaborate or supervise other literacy practitioners, communicate assessment results, and engage in professional activities. Prerequisites: CI 705, 714.

**CI 737. Methods/Assessment: Gifted (3).** Explores a variety of assessment instruments, both teacher-made and standardized, to determine a gifted student's cognitive functioning level and educational needs. Examines strategies and techniques for planning qualitatively differentiated curriculum to meet the academic needs of the gifted learner. Prerequisites: CI 719, 722 or instructor's consent.

**CI 742. Introduction to Teaching Strategies for Students With Severe/Multiple Disabilities (3).** Examines introductory assessments, curriculum and instruction related to students with severe and multiple disabilities. Includes competencies for (a) developing individual educational plans, (b) assessment for culturally responsive models of instructional planning, (c) planning and delivering research-validated individualized instruction, (d) monitoring and basing instructional decisions on performance data, (e) managing safe and conductive learning environments, and (f) strategies for working with students with moderate to severe needs in general and special education environments. Prerequisites: CI 719, 720.

**CI 743. Transition to Teaching or Residency Internship I (1).** In the transition to teaching or residency licensure program, this internship replaces the required student teaching assignment for the purposes of licensure.

Students in the transition to teaching program teach half time or more with a restricted license. Students in the residency program teach at least 20 hours per week under the supervision of a classroom teacher. *Transition to Teaching and Middle Level Secondary prerequisites:* CI 760A, employment by a school district or agency partnership and completion of program requirements for restricted teacher licensure or residency. Corequisite: CI 761A. *ECU Residency prerequisite*: admission to the program.

**CI 744. Transition to Teaching or Residency Internship II (1).** In the transition to teaching or residency licensure program, this internship replaces the required student teaching assignment for the purposes of licensure. Students in the transition to teaching program teach half time or more with a restricted license. Students in the residency program teach at least 20 hours per week under the supervision of a classroom teacher. *Transition to Teaching and MLS Residency prerequisites:* CI 743, 761A, employment by a school district or agency partnership and completion of coursework for restricted teacher licensure or MLS residency. Corequisite: CI 769. *ECU Residency prerequisites*: CI 603, 743. Corequisite: CI 614.

**CI 746. Alternative Certification Internship III and IV (1).** Continuation of CI 743 and 744. Prerequisites: employment by a school district, CI 743, 744, and admission to MEd in CI.

**CI 747L. Practicum: ESL/Bilingual Education (K–12 or adult) (3).** Provides full-time participation in an ESL class supervised by a master teacher and a university professor. Focuses on the application of teaching methods for ESL/bilingual learners, the appropriate use of formal and informal assessment procedures, the development of cross-cultural teaching strategies, and the integration of language with content-area instruction. Prerequisites: CI 321 or 711, CI 774, 775, 776, 777.

**CI 748. Transition to Teaching or Residency Internship III (1).** In the transition to teaching or residency licensure program, this internship replaces the required student teaching assignment for the purposes of licensure. Students in the transition to teaching program teach half time or more with a restricted license. Students in the residency program teach at least 20 hours per week under the supervision of a classroom teacher. *Transition to Teaching and MLS Residency prerequisites:* CI 744, 769, employment by a school district or agency partnership and completion of coursework for restricted teacher licensure or residency. Corequisite: CI 848. *ECU Residency prerequisites*: CI 617, 744. Corequisite: CI 704.

**CI 749. Transition to Teaching or Residency Internship IV (1).** In the transition to teaching (T2T) or residency (ECU or middle level secondary) licensure programs, this internship fulfills the required student teaching assignment for the purposes of licensure. Students in the transition to teaching program teach half time or more with a restricted license. Students in the residency (ECU or middle level secondary) programs are full-time interns for the entire semester under the supervision of a classroom teacher. *Transition to Teaching prerequisites:* CI 748, employment by a school district and completion of coursework for provisional teacher certification. Corequisite: CI 849. *Middle level secondary residency prerequisite:* CI 748. Corequisite: CI 849. *ECU Residency prerequisites*: CI 703, 748. Corequisite: CI 733.

**CI 749A. Practicum: High-incidence Learners (3).** Provides prospective special education teachers with participation in a class for children or adolescents with high-incidence learning needs being served in special education programs. Supervision is provided by a fully-qualified special education teacher and a university faculty member. Emphasizes (a) research-validated teaching methods for students with high-incidence learning needs, including planning individual education programs and standards-based education; (b) use of formal-informal psychoeducational assessment devices, curriculum strategies, positive behavior support, behavior management and evaluation of student performance; and (c) reflective analysis of personal performance and its impact on student learning. Prerequisites: CI 719, 720, 724, and practicum placement approval.

**CI 749F. Practicum: Low-Incidence Learners (3).** Provides supervised practical experience in a program setting that serves students who have low-incidence disabilities. Candidates work with a cooperating teacher to plan, implement and assess instruction aligned with state and/or district standards for students with low-incidence disabilities. Prerequisites: CI 719, 720, 742, practicum placement approval.

**CI 749G. Practicum: Gifted (3).** Provides prospective special education teachers with participation in an educational setting for children and adolescents with needs for gifted curriculum served in special education programs. Supervision is provided by a fully-qualified gifted education teacher and a university faculty member. Emphasis is placed upon research-validated teaching methods for students with gifted curriculum needs. Prerequisites: CI 719, 722, 737, practicum placement approval.

**CI 750. Workshops in Education (1–4).**

**CI 751, 752, 753, 754 or 755. Special Studies in Education (1–3).** For elementary and secondary school teachers. Repeatable with advisor's consent. Prerequisite: teacher certification or departmental consent.

**CI 756. Introduction to the National Board Certification Process (2).** Participants study the five core propositions of the National Board for Professional Teaching Standards: (1) teachers are committed to students and their learning; (2) teachers know the subjects they teach and how to teach those subjects to students; (3) teachers are responsible for managing and monitoring student learning; (4) teachers think systematically about their practice and learn from experience; (5) teachers are members of learning communities. Participants are introduced to the standards for their certificate area, should they choose to pursue national board certification, analyze small group and whole class videos, and complete a self-assessment to determine personal strengths and weaknesses and the degree to which they are prepared to pursue national board certification.

**CI 757. School Library Media Internship I (2).** The first of a two-semester internship required by the state of Kansas to qualify for endorsement as a professional licensed library media specialist. Provides the candidate with experience as a library media specialist. Candidates are expected to provide evidence for meeting all licensure standards required of library media specialists. Prerequisites: Kansas conditional endorsement as a library media specialist, master's degree, Kansas five-year teaching license.

**CI 760A. Creating an Effective Classroom (2).** Part of the core for a Master of Arts in Teaching. Participants conduct an initial examination of instructional methods, educational trends and effective practices for classroom management. Participants in the Alternative Certification program will have secured (or have been cleared to secure) a position as a para-educator in an accredited school system. Prerequisite: admission to the Transition to Teaching program or Middle Level Secondary Residency program.

**CI 761A. Instructional Planning and Technology (2).** Intended as part of the core for a Master of Arts in Teaching. Addresses issues in instructional planning including: identifying appropriate learner goals, aligning goals with accepted standards, models of instruction, integrating technology into instruction, adapting instruction to meet individual student needs, including English language learners, and differentiated instruction. Concurrent enrollment in CI 743, Transition to Teaching or Residency Internship I, or Cooperative Education is required. Prerequisites: students in this course will have secured a teaching contract or para-educator position in an accredited school system, will have met the prerequisites for admission to the Transition to Teaching or Middle Level Secondary Residency program at WSU and will have completed the summer induction course. Corequisite: CI 743.

**CI 764. Interdisciplinary STEM Education: Entry Course (3).** Helps students learn methods of instruction in integrated STEM, using the lens of STEM content knowledge and modeling, inquiry and design practices. A set of methodologies that students can effectively adapt to a variety of situations beyond their specific disciplines are introduced. Students learn how to identify, develop, deliver and evaluate STEM instructional activities with models of project-based learning. Course includes a comprehensive overview of the theories of and instructional strategies for integrated STEM education. Students have various opportunities to evaluate curricula developed for integrated STEM education, as well as procedures for developing a new STEM curriculum. Class comprises a combination of lecture, experiential exercises, discussion, in-class presentations, videos, individual assignments and team assignments.

**CI 766. NBPTS: Professional Portfolio Development (3).** Taken during the fall semester of the year in which a teacher is a candidate for National Board Certification. Candidates design and present units and evaluate student work that could be used for their portfolio. As part of the process, candidates identify and analyze relevant student work samples and make videotapes of themselves engaged in both whole group and small group instruction. Emphasis is placed on two areas: (a) helping candidates organize themselves so that they increase their chances of success at earning first-time certification, and (b) learning to engage in the critical self-analysis necessary to produce clear, consistent and convincing evidence that their work is accomplished. Emphasis is placed on professional writing. Prerequisite: CI 756.

**CI 767. NBPTS: The Assessment Process (3).** Taken during the spring semester of the year in which a teacher is a candidate for National Board Certification. Candidates complete and submit their portfolios to the national board for assessment. Candidates also prepare for the assessment center tests. Prerequisite: CI 766.

**CI 768. National Board Certification: Facilitating Accomplished Practice (3).** Capstone course. Candidates prepare a portfolio of at least two teaching units for the courses they teach that are fully integrated with the standards of the national board. Portfolio units may be added to an electronic professional library of the College of Education. Candidates identify key topics for staff development in consultation with school leadership that support the CIP of their respective schools and develop workshop or in-service sessions for colleagues. Emphasizes the development of instructional leadership skills to achieve these goals. Candidates may, at the discretion of the university advisor, teach a university sponsored workshop or course in lieu of developing

a school district sponsored professional development session. Professional collaboration and life-long learning are emphasized. Prerequisites: CI 760A and 767.

**CI 769. Instructional Strategies, Technology Integration and Assessment (2).** Intended as part of the core for a Master of Arts in Teaching (Transition to Teaching and/or Middle/Secondary Residency Programs). Allows the student to explore a variety of instructional strategies, technologies and assessment techniques while learning how to adapt these strategies and techniques to meet the individual needs of the students. Prerequisites: CI 743, 761A, 768, and continued employment by a school district. Corequisite: CI 744.

**CI 771. Technology in the Classroom (2).** Introduces classroom teachers to new technologies and their use in the classroom. Uses field trips and speakers to expose teachers to leaders in specific technology. Includes telecommunications, multimedia applications, integrated media and new hardware and operating systems. Prerequisite: instructor's consent.

**CI 772. Integrating Technology into the Curriculum (3).** Covers skills and strategies needed for classroom teachers to use computers and computer-related technology to meet curricular goals and professional standards. Includes professional standards, classroom management, choosing appropriate software, assessment, teaching strategies and activities, and professional resources. A project-based course; educators develop materials and strategies to assist in integrating available technology into the curriculum.

**CI 774. Teaching English as a Second Language (3).** Examines current objectives for teaching English as a second language and a variety of methods and specialized techniques for obtaining these objectives. Students develop knowledge of criteria for evaluating curricula, teaching materials and professional literature related to teaching English as a second language and bilingual education. Students examine methods of selecting and adapting curricular ways to enhance the curriculum through developing activation plans for involving parent and community resources in the ESL/BE curriculum. Designed to meet the standards required for ESL/BE endorsement or certification in TESOL.

**CI 775. Applied Linguistics: ESL/Bilingual Teacher(s) (3).** Examines a broad picture of human language: what it is, what it is used for and how it works. Enables students to recognize uninformed statements about language, to examine personal beliefs and attitudes about language, and to learn to use basic tools to analyze language in particular as it relates to teaching English as a second language. Provides an introduction to most of the sub-fields of linguistics (e.g., phonetics, morphology, semantics, syntax, etc.).

**CI 776. Second Language Acquisition (3).** Surveys nativist, environmentalist and interactionist theories of second-language acquisition. Covers a broad introduction to the scope of second-language acquisition and bilingualism by reviewing substantive research findings as well as causes for differential success among second-language learners. Includes discussions over readings, collaborative activities and presentations involving application of theory to teaching practice.

**CI 777. ESL Assessment (3).** Examines legal, theoretical and practical considerations in the ESL/BE students. Explores a variety of established principles of language assessment, procedures for identification of language-minority students and applications for these procedures and techniques. Covers level placement, monitoring of language development and exit criteria for language programs. Introduces the desirable qualities of tests: validity, reliability, practicality and beneficial backwash.

**CI 778. TESOL Content Test Preparation (3).** Provides teacher candidates preparation for the licensure exam through summaries of ESOL topics in (a) linguist theories, (b) examination of student language production, (c) research-based teaching strategies, (d) assessment procedures and techniques, (e) cultural and professional matters, and (f) test-taking strategies. Prerequisite: senior standing for undergraduate students.

**CI 780C. Technology and the Classroom: Young Children (2).** Teaches effective use of a variety of hardware, software and peripherals in early childhood classroom settings (ages 3–9, grades PreK–3). Prerequisite: entrance into teacher education, a valid teaching certification or instructor's consent.

**CI 780L. Technology in the Classroom: Language Arts (2).** Enables classroom teachers to use computers and related technology in the language arts curriculum. Appropriate software is evaluated and used in planning for instruction.

**CI 780M. Technology in the Classroom: Mathematics (2).** Focuses on the integration of information and communication technology in mathematics. Explores mathematics-related software and online resources, instructional strategies and assessment techniques. Strongly focuses on the use of technology to meet the subject matter and technology and curriculum standards. Emphasizes building a community of reflective learners. Prerequisite: entrance into teacher education, valid teacher certificate/license, or instructor's consent.

**CI 780S. Technology in the Classroom: Science (2).** Assists teachers of science in integrating the use of technology appropriate for their classrooms. Explores software and online resources, instructional strategies and assessment techniques. Strongly focuses on the use of technology for communication and student assistance to meet the science and technology curriculum standards. Emphasizes building a community of reflective learners. Prerequisite: entrance into teacher education, valid teacher certificate/license or instructor's consent.

**CI 781. Cooperative Education (1–4).** Provides the candidate a work-related placement that integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic program. Graded *Cr/NCr*. CI graduate candidates are limited to any combination of 6 hours of pass/fail, *S/U,* and *Cr/NCr* credit toward the degree program.

**CI 782. Internet in the Classroom (3).** Project-based course requires students to identify Internet resources that best meet classroom curricular goals and plan instruction using those resources. Assumes all enrolled students have basic computing skills prior to enrolling in this class and access to a computer connected to the Internet.

**CI 783. Special Projects in Internet (1).** Students explore and expand their knowledge of the Internet. They complete a special project designed to use knowledge and experiences developed in CI 782. Students and instructor establish goals and activities appropriate for graduate-level study and applicable in an educational setting. Prerequisite: CI 782 or instructor's consent.

**CI 790. Special Problems in Education (1–4).** Directed reading, activity or research under supervision of a graduate instructor. Prerequisite: departmental consent.

**CI 794. Diversity and Culture in a Global Society (3).** Equips students to become multi-instructional leaders who practice cultural and social justice. Provides students with the necessary concepts of diversity to scaffold a paradigm shift from cultural awareness to cultural diplomacy. Enables students to become successful global citizens in the globalized world. Prerequisite: graduate standing or departmental consent.

**CI 795. Change, Creativity and Innovation (3).** Focuses on key theories and elements related to organizational change, the creative process and innovation. Students develop an understanding of creative thinking processes to explore how those processes can impact change and lead to innovation. Prerequisite: graduate standing or departmental consent.

**CI 796. Family and Professional Collaboration (3).** Assists the special educator in developing the skills to collaborate and consult with parents/family members, general educators, support personnel, paraprofessionals/teaching assistants, and community agencies to facilitate the needs of children with exceptionalities.

### Courses for Graduate Students Only

**CI 804. Classroom Research in Curriculum and Instruction (6).** Guides students in formulating questions and using appropriate research principles to collect, analyze, interpret and report data to evaluate the effectiveness of educational policies and/or practices. Sustained exploration of topics from CI 731 expected. Prerequisite: CI 731.

**CI 812. Transition Across the Life Span (2).** Examines aspects of transition programming for individuals with exceptionalities across their life span. Addresses transitions from (a) early childhood special education settings to the school environment, (b) elementary to middle school, (c) middle school to high school, (d) one special education setting to another (e.g., self-contained classroom to resource room or general education classroom), and (e) high school to postsecondary settings and independent functioning. Discusses roles of individuals with exceptional learning needs, parents, educators and community personnel. Prerequisite: CI 749A, 749F, or 749G.

**CI 814. Advanced Methods: Gifted (2).** Develops strategies and techniques, including technology, for planning qualitatively-differentiated curriculum to meet the unique academic needs of the gifted learner. Prerequisite: CI 749G. Corequisite: CI 814A.

**CI 814A. Internship/Practicum: Advanced Methods Gifted (1).** Provides a supervised opportunity for students to implement and evaluate differentiated curriculum for gifted learners. Prerequisite: CI 749G. Corequisite: CI 814.

**CI 815. Advanced Teaching Strategies for Students with Mild/Moderate Disabilities (2).** Develops strategies and techniques related to the diverse individual needs of learners identified with mild/moderate disabilities including ensuring access to the general education curriculum, environments and extracurricular activities through adaptations, modifications and use of technology. Corequisite: CI 815A.

**CI 815A. Internship/Practicum: Advanced Teaching Strategies for Students with Mild/Moderate Disabilities (1).** Provides a supervised opportunity for students to implement and evaluate learning experiences and curricula that develop the cognitive potential of learners with adaptive learning needs and their accessibility to the general education curriculum. Prerequisite: CI 749A. Corequisite: CI 815.

**CI 816. Advanced Methods: Developing Critical and Creative Thought (2 or 3).** *Curriculum and instruction*

*students (2).* Students use understanding of cognitive and creative development to construct learning experiences that challenge the cognitive and creative potential of gifted learners. Prerequisite: CI 749G. Corequisite: CI 816A. *Graduate certificate in engineering students (3).* Graduate students in engineering use understanding of cognitive and creative development to construct learning experiences that challenge the cognitive and creative potential of university students. Prerequisites: CESP 811, 820.

**CI 816A. Internship: Developing Critical and Creative Thought (1 or 3).** *Curriculum and instruction students (1).* Provides a supervised opportunity for students to implement and evaluate curricula that challenge the cognitive and creative potential of gifted learners. Prerequisite: CI 749G. Corequisite: CI 816. *Graduate certificate in engineering students (3).* Provides engineering students a supervised opportunity to implement and evaluate curricula that challenge the cognitive and creative potential of engineering students within a university-level engineering class. Prerequisite: CI 816.

**CI 817. Language to Literacy: Meeting Needs of Students with Disabilities (2).** Provides content relevant to language development and disorders that impacts the educational achievement of students with special education classifications. This includes oral and written communication, emergent literacy and reading. Candidates learn how to apply educational interventions that are effective in meeting the language and literacy needs of all students including strategies for exceptional students from English for Speakers of Other Languages (ESOL) backgrounds. Specifically, candidates learn appropriate instructional strategies for teaching oral language, reading and written expression. An emphasis on the principles of information processing as they apply to effective instructional procedures is stressed. Prerequisite: CI 749A. Corequisite: CI 817A.

**CI 817A. Internship/Practicum: Language to Literacy (1).** Provides a supervised opportunity for students to evaluate and implement learning experiences, including application of educational interventions that are effective in meeting the language and literacy needs of students. In addition, candidates implement educational interventions that are effective in meeting the language and literacy needs of students as well as implementing appropriate strategies for teaching oral language, reading and written expression. Prerequisite: CI 749A. Corequisite: CI 817.

**CI 818. Positive Behavior Supports for Students With Exceptionalities (3).** Develops knowledge and skills for conducting a functional behavior assessment along with a positive behavior support plan needed by classroom teachers to affect academic and social-emotional outcomes. Addresses connections of challenging behaviors to aspects of the learner's (a) environments, (b) cultural diversity, (c) developmental and academic skills, and (d) physiological needs along with an awareness of disability harassment, bullying and the social emotional needs of the exceptional child. Prerequisite: 749A. Corequisite: CI 818A.

**CI 818A. Internship/Practicum: Positive Behavior Supports (1).** Provides a supervised opportunity for candidates to evaluate and implement positive behavioral supports for students with challenging behaviors, including functional assessment of problem behavior, design and implementation of behavior plans, and provision of ongoing positive behavior supports. Prerequisite: one of the following courses—high-incidence learners, CI 749A; low-incidence learners, CI 749F; gifted, CI 749G; and full admission to the special education program. Corequisite: CI 818.

**CI 819. Nonsymbolic & Symbolic Communication (2).** Develops strategies and techniques for assessing, designing and delivering instruction in order to meet the unique communication needs of learners with severe and multiple disabilities. Prerequisite: CI 749F. Corequisite: CI 819A.

**CI 819A. Internship/Practicum: Communication (1).** Provides a supervised opportunity for candidates to evaluate and implement nonverbal and verbal communication strategies for students with functional learning needs. Prerequisite: CI 749F. Corequisite: CI 819.

**CI 820. Advanced Teaching Strategies for Students with Severe and Multiple Disabilities (2).** Develops strategies and techniques, including assistive technology, related to curriculum, instruction and planning of the learning environment within the functional curriculum. Imparts knowledge, skills and dispositions needed to meet the diverse cognitive, physical, social and emotional needs of students with severe and multiple disabilities. Prerequisites: CI 742, 749F, full admission into the special education—low-incidence learners program. Corequisite: CI 820A.

**CI 820A. Internship/Practicum: Low-incidence Learning Needs (1).** Provides a supervised opportunity for candidates to evaluate and implement learning experiences, including curriculum planning, environmental arrangements, instructional delivery, and use of assistive technology, that develops cognitive, physical, social and emotional needs of students with severe and multiple disabilities. Prerequisites: CI 742, 749F, full admission into the special education—low-incidence learners program. Corequisite: CI 820.

**CI 821. Classroom Reading Practicum (3).** Students participate in a practicum experience, delivering developmental and corrective reading instruction in a classroom setting. Prerequisite: CI 705.

**CI 822. Principles of Nondiscriminatory Assessment for Students With Exceptionalities (2).** Applies standardized and informal evaluation techniques including critical evaluation of standardized tests, their appropriateness for special populations (including school-age individuals with exceptionalities and reading disabilities as well as young children and culturally and linguistically diverse learners), and alternative methods of assessment and intervention techniques based on diagnostic profiles. Historical, racial, gender and social disproportionalities issues within special education are also addressed. Prerequisite: CI 749A, 749F or 749G.

**CI 824. Reading Internship I (2).** The first of a two-semester internship required by the state of Kansas to qualify for endorsement as a professionally licensed reading specialist. The intern has a university supervisor and an employing school district-appointed mentor who is a licensed reading specialist. A minimum of two visits from both the university supervisor and mentor as well as additional communications occur. Provides the candidate with experience as a reading specialist. Candidates are expected to provide evidence of meeting all licensure standards. Prerequisites: CI 736, Kansas conditional endorsement as a reading specialist.

**CI 825. Reading Internship II (2).** The second of a two-semester internship required by the state of Kansas to qualify for endorsement as a professionally licensed reading specialist. The intern has a university supervisor and an employing school district-appointed mentor who is a licensed reading specialist. A minimum of two visits from both the university supervisor and mentor as well as additional communications occur. Provides the candidate with experience as a reading specialist. Candidates are expected to provide evidence of meeting all licensure standards. Prerequisite: CI 824.

**CI 837. Collaborating and Refining Problem Solving Skills (4).** This integrated class guides students in implementing school and classroom improvement practices that have documented success. Emphasizes collaboration skills in the identification, selection and development of approved school and professional development projects. Prerequisite: CI 804.

**CI 843. Leadership and Sustained Professional Growth (4).** Emphasizes commitment to and application of professional leadership in curriculum and instruction and/or school improvement. Sustained exploration of topics from CI 731, 804, 837 expected. Prerequisite: CI 837.

**CI 845. Curriculum Models and Practices (2).** Examines theories, development processes, evaluation procedures and current practices in curriculum. Emphasizes multiple conceptual frameworks for thinking about curriculum and reflective inquiry into the implications of those frameworks in today's classrooms and schools. Prerequisite: admission to MAT program.

**CI 847A. Practicum/Field Experience: ECU (1–10).** Provides supervised field experiences for candidates to evaluate and implement learning experiences, including curriculum planning, environmental arrangements, instructional delivery, and use of assistive technology that links to increased development in all domains. Experiences are assigned at three levels, infant-toddler, preschool and K–3. Prerequisites: CI 614, 617 and/or 703, and full admission into the special education/early childhood unified program.

**CI 847B. Practicum: School Libraries (2).** Students pursue a professional experience in a school library media center under the cooperative supervision of an experienced practitioner in the field and a university supervisor. Prerequisite: CI 732.

**CI 847KG. Practicum/Field Experience in ECU: K–3 (3–4).** Candidates participate in practicum teaching opportunities located in a K–3 setting that includes young children both with and without special needs. Candidates work with a cooperating/mentor teacher(s), other professionals, and university supervisor to plan, implement, and assess services and supports for young children at this level. Pre- or corequisite: CI 703.

**CI 847IT. Practicum/Field Experience in ECU: Infant/Toddler (3–4).** Candidates participate in practicum teaching opportunities located in an infant/toddler setting that includes young children both with and without special needs. Candidates work with a cooperating/mentor teacher(s), other professionals, and university supervisor to plan, implement, and assess services and supports for young children at this level. *Course includes diversity content.* Pre- or corequisite: CI 614.

**CI 847P. Practicum/Field Experience in ECU: Preschool (3–4).** Candidates participate in practicum teaching opportunities located in a preschool setting that includes young children both with and without special needs. Candidates work with a cooperating/mentor teacher(s), other professionals, and university supervisor to plan, implement, and assess services and supports for young children at this level. *Course includes diversity content.* Pre- or corequisite: CI 617.

**CI 848. Analysis and Reflection (2).** In the transition to teaching or residency licensure program, this course introduces techniques for analyzing impact on student

learning and effective reflection as well as requiring students to apply these techniques to specific learning environments. *Transition to teaching and Middle Level Secondary prerequisites*: CI 744, 769, and continued employment by a school district. Corequisite: CI 748.

**CI 849. Practices and Trends in Action Research (2).** In the transition to teaching or residency licensure program, this course introduces techniques of action research and requires students to apply these techniques to specific learning environments. *Transition to teaching and MLS Residency prerequisites:* CI 748, 848, and continued employment by a school district. Corequisite: CI 749 or 781. *ECU Residency prerequisite:* CI 603. Corequisite: CLES 801.

**CI 851. Special Education Research (2).** Students learn research methodologies from the field of special education. Students develop research questions, review relevant literature, and develop skills to conduct ethical research that leads to improvement in their educational practices. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Prerequisite: CI 749A, 749F or 749G.

**CI 853. Improvement of Instruction in Language Arts (3).** Students examine recent developments in the teaching of language arts in elementary and/or middle school grades: problems, concerns, methods, materials and research related to listening and to oral, written and visual communication including "school" writing and creative writing. Students select particular concepts and related skills for special attention.

**CI 855. Models and Practices of Curriculum and Instruction (6).** Examines theories behind, the development of, current practices and trends in, and evaluation and assessment procedures pertaining to curriculum and instruction. Emphasizes multiple conceptual frameworks for thinking about curriculum and instruction, and reflective inquiry into the implications of those frameworks in today's classrooms. Prerequisite: CI 706.

**CI 860. Seminar in Research Problems (1–3).** Helps MA in teaching graduate students formulate an acceptable agenda for the development of a professional action research project or portfolio to satisfy the application requirements for the master's in teaching program. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Prerequisite: CLES 801.

**CI 862. Evidence-Based Inquiry: Capstone Project Proposal (1–2).** Students develop a research-based inquiry proposal as a process for increasing skills as evidence-based practitioners. A formal proposal is written to research evidence-based practices or other important knowledge bases relevant to learning and instruction. Prerequisite: CI 851 or 860 or 885 or instructor's consent.

**CI 863. Evidence-Based Inquiry: Capstone Project (1–2).** Students complete and present a research-based inquiry report as a process for increasing skills as evidence-based practitioners. This formal report is presented to a preidentified audience describing the results of an inquiry into a knowledge basis relevant to the fields of learning and instruction. Prerequisite: CI 862.

**CI 867. Interdisciplinary STEM Education: Exit Course (3).** Cultivates students' STEM content knowledge and pedagogical skills for implementing integrated STEM teaching by providing practical experiences in formal and informal STEM settings. Experiential and application-based course which allows students to demonstrate their ability to develop integrated STEM curriculum. Prerequisites: CI 764 and 3—4 courses of individualized pathway STEM courses listed in the certificate program catalog.

**CI 868. School Library Media Internship II (2).** The second of a two-semester internship required by the state of Kansas to qualify for endorsement as a professionally licensed library media specialist. Provides the candidate with experience as a library media specialist. Candidates are expected to provide evidence for meeting all licensure standards required of library media specialists. Prerequisite: CI 757.

**CI 875. Master's Thesis (1–2).** Students complete the research proposal accepted by their thesis committee. Students work closely with their advisor and committee. Students receive credit for this course when their thesis has been completed and defended. Prerequisite: CI 860 or 885.

**CI 876. Master's Thesis (1–2).** Students complete and orally defend their thesis. Students work closely with their advisor and committee. Students needing an additional semester to satisfy these requirements should enroll in one hour of CI 876. Students receive credit for courses(s) when their thesis has been completed and defended. Prerequisites: CI 875, 884, 885 or instructor's consent.

**CI 880. Learning Theory and Curriculum Design (3).** Focuses on cognitive science relative to how people learn and how instruction is designed to facilitate and optimize learning. Students explore several different theoretical perspectives on learning, cognition and cognitive development. Using current learning theories and a range of tools, students come to understand effective curriculum design for a variety of settings. Prerequisite: graduate standing or departmental consent.

**CI 881. Instructional Theory (3).** Fosters the art of teaching and provides students with knowledge and skills to bring instructional theory into practice in order to optimize learning in a variety of professional trainings as well as in multiple sociocultural and educational learning settings. Prerequisite: graduate standing or departmental consent.

**CI 884. Inquiry Into Instructional Practice: Part 1 (3).** Introduces students to the procedures commonly used in research and data analysis. Conceptual, procedural and analysis issues from a wide variety of areas are covered, ranging from formal research techniques to approaches used by researchers involved in investigations in real-life settings. Includes critical analysis of selected published research in the student's professional area. Prerequisite: graduate standing or departmental consent.

**CI 885. Inquiry Into Instructional Practice: Part 2 (3).** Provides students with the skills necessary to conduct research relevant to their professional practice. Includes elements of quantitative as well as qualitative data analysis. Students critically analyze data-based decision making and the potential implications of instructional practice. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Prerequisite: CI 884.

**CI 893. Instructional Leadership: Professionalism and Collaboration (3).** Focuses on the role of the instructional leader to facilitate the implementation and sustainability of change necessary to support individual and organizational learning. Candidates acquire the skills necessary to facilitate, nurture and maintain partnerships. Prerequisites: CI 880, 884, 885.

**CI 894. Advanced Topics in Early Childhood Special Education (1–4).** Students participate in topical seminars in early intervention offered periodically to facilitate opportunities for the in-depth study of critical issues or topical research in the field of early childhood and/or early childhood special education. Repeatable for credit. Prerequisites: CI 603 and at least one methods class: CI 614, 617 or 703.

# Human Performance Studies (HPS)

**Graduate Faculty**
*Professor:* Michael Rogers (chairperson)
*Associate Professor:* Jeremy Patterson

## Degrees and Areas of Specialization

The department of human performance studies offers courses of study leading to the Master of Education (MEd) in exercise science. Academic training is provided for students who wish to prepare for careers in physical education, exercise science/wellness.

## Admission Requirements

Admission to the master's degree program in exercise science requires students to have completed an undergraduate degree from a regionally accredited institution and have a grade point average of at least 2.750 (4.000 system) in the last 60 credit hours of coursework including any postbachelor's graduate work in accordance with university graduate policy.

Students applying to the program must complete the following prerequisite courses. Students who have 9 hour or less of prerequisites remaining may be granted admission on a full standing basis, but must complete all remaining prerequisites within one year of admission.

- CHEM 110 (3) Preparatory Chemistry (or equivalent)
- HPS 229 (3) Applied Human Anatomy (or equivalent)
- HPS 313 (3) Exercise and Sport Nutrition (or equivalent)
- HPS 328 (3) Kinesiology and Biomechanics (or equivalent)
- HPS 490 (3) Physiology of Exercise (or equivalent)

## Master of Education Requirements

The Master of Education (MEd) in exercise science program offers a 34-hour thesis option, a 36-hour nonthesis with internship option, and a 36-hour nonthesis without internship option. The thesis option requires an oral examination on the research; the nonthesis with internship and

nonthesis without internship options require a written comprehensive examination.

All program students are required to take HPS 860, Research Methods in the Profession, preferably in their first year in the program, to satisfy the professional and scholarly integrity training requirement.

*Core Courses*

| | | |
|---|---|---|
| HPS 800 | Recent Lit. in the Profession | 3 |
| HPS 815 | Fitness Assessment/Exercise Recommendations | 3 |
| HPS 830 | Adv. Physiology & Anatomy of Exercise | 3 |
| HPS 860 | Research Methods in the Profession | 3 |

*Specialty Courses*

| | | |
|---|---|---|
| HPS 510 | Coaching Principles | 3 |
| HPS 541 | Strength Training and Conditioning | 3 |
| HPS 715 | Body Composition and Weight Management | 3 |
| HPS 732 | Pathophysiology of CVD | 3 |
| HPS 740 | Endocrinology and Metabolism of Exercise | 3 |
| HPS 750 | Workshop in Education | 1–3 |
| HPS 762 | Statistical Concepts in Human Performance Studies | 3 |
| HPS 780 | Physical Dimensions of Aging | 3 |
| HPS 781 | Cooperative Education Field Study | 3 |
| HPS 790 | Applied Exercise Physiology | 3 |
| HPS 795 | Physiology of Athletic Performance | 3 |
| HPS 797 | Exercise in Health and Disease | 3 |
| HPS 890 | Special Topics | 1–4 |
| HPS 895 | Applied Research | 1–4 |

*Thesis Option* ..... *(34 hrs.)*
Must complete
Four required course courses ..... 12 hrs.
Four specialty courses ..... 12 hrs.
Two elective courses* ..... 6 hrs.
HPS 875 Thesis Research ..... 2 hrs.
HPS 876 Thesis ..... 2 hrs.
Requires oral defense of thesis.

*Nonthesis Option with Internship* ..... *(36 hrs.)*
Must complete
Four required course courses ..... 12 hrs.
Four specialty courses ..... 12 hrs.
including HPS 890 Special Topics
Two elective courses* ..... 6 hrs.
HPS 857 Internship in Exercise Science/Wellness ..... 6 hrs.
Requires written comprehensive exam

*Nonthesis Option without Internship* ..... *(36 hrs.)*
Must complete
Four required course courses ..... 12 hrs.
Six specialty courses ..... 18 hrs.
Two elective courses* ..... 6 hrs.
Requires written comprehensive exam

*Elective courses may be additional specialty courses or selected from another department with advisor's approval.

## Graduate Certificates

Students seeking a graduate certificate must be admitted to the Graduate School in a degree program or in nondegree, Category A status. All Graduate School policies relative to admissions apply. Students must maintain a grade point average of 3.000 or better.

### *Graduate Certificate in Functional Aging*

This certificate provides knowledge and training for those working in the field of aging. It will help them assist older adults to retain sufficient levels of functional ability and to understand the physiologic changes that occur with aging and how these changes impact of the quality of life for older adults.

Students must receive approval to enter this certificate program from their graduate advisor and the certificate in functional aging faculty committee. To initiate the application process, candidates must provide a completed application form and a one-page statement to the certificate in functional aging faculty committee explaining the student's purpose and interest in obtaining the certificate in functional aging, as well as his or her career plans.

The program consists of 12 hours of coursework selected from the following list. Students may not take more than 6 hours from a single department.

| *Courses* | | *hrs.* |
|---|---|---|
| CSD 517 | Communication in Aging | 3 |
| CSD 812 | Aphasia | 2 |
| AGE 715 | Adult Development & Aging | 3 |
| AGE 798 | Interprofessional Perspectives on Aging | 3 |
| HPS 780 | Physical Dimensions of Aging | 3 |
| HPS 895 | Applied Research | 3 |
| PSY 905 | Cognitive/Learning Foundations of Behavior | 3 |
| PSY 921 | Seminar in Human Factors | 3 |
| PSY 925 | Seminar in Perception | 3 |

### Courses for Graduate/Undergraduate Credit

**HPS 510. Coaching Principles (3).** Provides the skills and knowledge necessary for individuals to successfully coach and officiate both elementary and secondary school interscholastic and intramural athletics. Instruction for coaching and officiating techniques, coaching progression, skill analysis and skill development is provided. Management techniques for interscholastic and intramural athletics are included. A variety of coaching strategies as well as discipline and motivation techniques are discussed. Prerequisite: completion of Core I of teacher education program if undergraduate standing, graduate standing at WSU, or instructor's consent.

**HPS 541. Strength Training and Conditioning (3).** Helps prepare students for the National Strength and Conditioning Association (NSCA) Certification Commission's Certified Strength and Conditioning Specialist (CSCS) examination and/or the NSCA-Certified Personal Trainer certification examination. Anatomy, biochemistry, biomechanics, endocrinology, nutrition, exercise physiology, psychology and the other sciences that relate to the principles of designing safe and effective training programs are covered. Prerequisite: junior classification or graduate student status.

**HPS 590. Independent Study (1–3).** Prerequisite: departmental consent.

**HPS 715. Body Composition and Weight Management (3).** A comprehensive coverage of the theoretical and scientific aspects of body composition assessment and current strategies for effective weight management. The limitations and usefulness of reference and field methods for assessing body composition in research, clinical and health/fitness settings are addressed. The overall intent of this course is not only to provide classroom-based theory regarding body composition assessment, but also hands-on experience and training in applying the different assessment techniques.

**HPS 732. Pathophysiology of Cardiovascular Disease (3).** Introduces the pathophysiology of multiple cardiovascular conditions and the developing industry of cardiac rehabilitation. Introduces assessment techniques in electrocardiography (ECG) to assist in the diagnosis of cardiovascular disease. Includes an introduction to ECG leads, rate and rhythm, ECG complexes and intervals, conduction disturbances, arrhythmia, ECG identification of myocardial infarction location and drug effects on an ECG. Prerequisite: HPS 490.

**HPS 740. Endocrinology and Metabolism of Exercise (3).** Provides students an in-depth examination of the energy metabolism during exercise and the role of the endocrine system in regulating acute and chronic metabolic responses to exercise. Special endocrine issues related to exercise physiology are discussed.

**HPS 750. Workshop in Education (1–3).**

**HPS 762. Statistical Concepts in Human Performance Studies (3).** Covers descriptive statistics, elementary probability, distributional properties, one- and two-population mean and variance comparisons, ANOVA, linear regression and correlations. In addition, more advanced principles in parametric and nonparametric statistics are emphasized. Prerequisite: junior classification or graduate student status.

**HPS 780. Physical Dimensions of Aging (3).** Cross-listed as AGE 780. Covers the complex physiological changes that accompany advancing age and how exercise affects the aging process. Includes an appreciation for how functional consequences affect mental and social dimensions of life. Emphasizes factors associated with the preparation, implementation and evaluation of research projects involving elderly populations.

**HPS 781. Cooperative Education Field Study (1–3).** Provides the graduate student with a field placement which integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic program. Individualized programs must be formulated in consultation with appropriate graduate faculty. The plan of study for a graduate degreebound student must be filed before approval of enrollment for cooperative education graduate credit. May be repeated for credit. A maximum of 3 hours (for nonthesis option) or 6 hours (for thesis option) may count toward the graduate degree. Graded *Cr/NCr*.

**HPS 790. Applied Exercise Physiology (3).** Focuses on the applied aspect of exercise physiology. Includes the areas of environmental influences on performance; optimizing performance through training, nutrition and ergogenic aids; training and performance of the adolescent athlete and the differences in performance and training between genders. Prerequisite: HPS 490 or 830.

**HPS 795. Physiology of Athletic Performance (3).** Explores the physiological responses involved with various athletic performances, including sports requiring

endurance, speed and power. Includes such areas of physiological study as metabolic energy systems, cardiovascular and skeletal muscle adaptation, muscle fiber type differentiation and responses to extreme environmental conditions. Discovers parameters for performance and establishes guidelines for training at high levels of performance.

**HPS 797. Exercise in Health and Disease (3).** Introduction to the physiology of disease and the effects of short- and long-term exercise on specific conditions. Understanding the guidelines for exercise testing and prescription in high risk populations. Prerequisite: HPS 490.

### Courses for Graduate Students Only

**HPS 800. Recent Literature in the Profession (3).** Survey and critical analysis of research and other pertinent materials in the field.

**HPS 815. Fitness Assessment/Exercise Recommendations (3).** Introduces techniques appropriate for screening, health appraisal and fitness assessment as required for prescribing exercise programs for individuals without disease or with controlled disease. Requires out-of-class laboratory experiences. Prerequisites: HPS 490 or equivalent and graduate standing.

**HPS 830. Advanced Physiology and Anatomy of Exercise (3).** In-depth study of the physiological and anatomical basis of exercise and training. Includes respiratory dynamics, cardiovascular function, energy metabolism, regulation during rest, steady state and exhaustive physical activity, identification of joint movements, and the recognition of muscles and nerves that are involved in movement. Emphasizes immediate and long-term adaptation to exercise and training. Prerequisite: HPS 490.

**HPS 857. Internship in Exercise Science/Wellness (6).** Internship in selected area of specialization within the exercise science program. Students spend the equivalent of full-time employment in an appropriate agency for one full semester. Prerequisite: departmental consent.

**HPS 860. Research Methods in the Profession (3).** Examination of research methodology as related to topics in health, PE, sports studies and exercise science/wellness. Includes review and critical evaluation of the literature, research design and statistical processes, methodology, data collection techniques, computer-based analysis of data and thesis/report writing. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Students design and complete a mini research project.

**HPS 875. Thesis Research (1–2).** Development of a research problem and proposal with the direction of a graduate faculty member. Repeatable, but total credit hours counted toward degree requirements must not exceed 2. Prerequisites: admission to graduate school in good standing, HPS 860, departmental consent.

**HPS 876. Thesis (1–2).** Repeatable, but total credit hours counted toward degree requirements must not exceed 2. Students must be enrolled in this course during the semester in which all requirements for the thesis are met. Prerequisites: HPS 875 and consent of the student's committee chair.

**HPS 890. Special Topics (1–4).** Directed reading and research under supervision of a graduate instructor. Prerequisite: departmental consent.

**HPS 895. Applied Research (1–4).** Provides opportunity for the student to develop, in collaboration with a departmental faculty member, objectives and protocol for independent work.

# Sport Management (SMGT)

**Graduate Faculty**

*Professor:* Clay Stoldt (associate dean)
*Associate Professor:* Mark Vermillion (chairperson)
*Assistant Professors:* Jeff Noble, Wonyoung Kim (graduate coordinator)

## Degrees and Areas of Specialization

The department of sport management offers courses of study leading to the Master of Education (MEd) in sport management.

## Admission Requirements

Admission to the master's degree program in sport management is considered for students who have completed an earned undergraduate degree from a regionally accredited institution with a grade point average of 2.750 (4.000 system) for the last 60 hours of coursework, in accordance with WSU graduate policy. Candidate evaluations are based on one of two options: (1) GPA for the last 60 hours of coursework and faculty evaluation based on letter of application, resume, and three reference reports; *or* (2) GPA for the last 60 hours of coursework, cumulative score for the verbal and quantitative sections of the Graduate Record Exam, and faculty evaluation based on letter of application, resume and three reference reports. The program limits admissions to 30 students per year with a minimum score of 70 (out of 100 possible) based on the above admission criteria options.

## Master of Education Requirements

The MEd program in sport management program requires 36 credit hours—30 hours of coursework and a 6-hour internship. In addition, the program requires that all students pass a final written examination covering all required coursework during their final semester prior to graduation.

*Required Courses.....30 hrs.*

| | | |
|---|---|---|
| SMGT 800 | Analytics & Decision Making in Sport | 3 |
| SMGT 801 | Management in Sport | 3 |
| SMGT 802 | Ethics in Sport | 3 |
| SMGT 803 | Sport Marketing | 3 |
| SMGT 809 | Sport Management Technology | 3 |
| SMGT 811 | Sport in Society | 3 |
| SMGT 822 | Communication in Sport | 3 |
| SMGT 835 | Legal Issues in the Profession I | 3 |
| SMGT 847 | Internship | 6 |

*Elective Courses.....hrs.*

Students may choose from the following classes or consider other options in consultation with their assigned advisor.

| | | |
|---|---|---|
| SMGT 511 | Selling in the Sport Industry | 3 |
| SMGT 520 | Tournament and Event Mgmt. | 3 |
| SMGT 525 | Sport Facility Management | 3 |
| SMGT 540 | Consumer Behavior in Sport | 3 |
| SMGT 545 | Sport Governance & Policy | 3 |
| SMGT 711 | Structuring & Scheduling Sports Tournaments | 3 |
| SMGT 777 | Legal Issues in the Profession II | 3 |
| SMGT 781 | Cooperative Education | max. 3 |
| SMGT 818 | Psychology of Sport | 3 |
| SMGT 890 | Special Topics | 3 |

### Courses for Graduate/Undergraduate Credit

**SMGT 511. Selling in the Sport Industry (3).** Examines both the theory and the practical application of sales and promotions in the sports industry. Students learn a process for sales and use that process in a real-life sales exercise. Students are introduced to methods of sales management. The class conducts sales projects for local sports organizations for practical experience and application of theory.

**SMGT 520. Sport Tournament and Event Management (3).** Examines the processes, methods and practices involved in sport event management, including sport tournaments, sports team events and individual sporting events. Students completing this class should feel prepared to initiate and execute a sport event on their own. Prerequisite: SMGT 112 or graduate standing.

**SMGT 525. Sport Facility Management (3).** Focuses on various aspects of facility management, such as mission development, funding and budget, site selection/planning/design, floor surfaces, risk management, equipment purchase and maintenance, and personnel management. Prerequisite: SMGT 112 or graduate standing.

**SMGT 540. Consumer Behavior in Sport (3).** Integrates the knowledge base of sport and business as it applies in the practical setting. Prerequisites: 2.500 GPA, junior, senior or graduate standing.

**SMGT 545. Sport Governance and Policy (3).** Discusses the fundamental aspects of management and administration within any sport-related organization. Students are exposed to key industry concepts such as strategic management, ethics and event planning activities, in addition to governance and policy related topics such as scholastic, intercollegiate and amateur sport.

**SMGT 590. Independent Study (1–3).** Prerequisite: departmental consent.

**SMGT 711. Structuring and Scheduling Sports Tournaments (3).** The structural design, scheduling processes, and mathematics of sport tournaments, elimination, placement and round robin formats.

**SMGT 750. Workshop in Education (1–3).**

**SMGT 777. Legal Issues in the Profession II (3).** Provides students with the knowledge, understanding and application of how the following legal issues influence the sport industry. Specific content includes: agency law, collective bargaining, labor and antitrust law, criminal law, intellectual property rights, product liability and sport governance. In addition to the above content knowledge and application, case studies and class discussions focus on the enhancement of problem-solving skills and prudent managerial decision making.

**SMGT 781. Cooperative Education Field Study (1–3).** Provides the graduate student with a field placement which integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic program. Individualized programs must be formulated in consultation with appropriate graduate faculty. The plan of study for a graduate degreebound student must be filed before

approval of enrollment for cooperative education graduate credit. May be repeated for credit. A maximum of 3 hours (for nonthesis option) or 6 hours (for thesis option) may count toward the graduate degree. Graded *Cr/NCr*.

### Courses for Graduate Students Only

**SMGT 800. Analytics and Decision Making in Sport (3).** Highlights various data applications in sport management as professional tools to make informed decisions. Topics include understanding how to collect, interpret, represent and disseminate data in an organizational setting, and to better understand how data informs decision-making processes within sport.

**SMGT 801. Management in Sport (3).** Initial introduction into the administration of sport in public schools, institutions of higher education, and commercial and professional sport organizations. Learn about the various components of sports administration by reading appropriate materials and entering into dialogue with practicing administrators.

**SMGT 802. Ethics in Sport (3).** Designed to give students an understanding of the various issues and concepts relating to ethical decision making in sport management settings. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership.

**SMGT 803. Sport Marketing (3).** Focuses on the application of marketing principles in a sport-related setting. Addresses such content areas as corporate sponsorships, ticket sales, broadcast agreements, promotional events, and direct marketing in the sport entertainment, sport participation and sporting goods sectors of the industry.

**SMGT 809. Sport Management Technology (3).** Students gain a greater appreciation for applications of current technology in the area of sport management including but not limited to: the fundamentals of computers and their use, the application of commercial software to the sport management setting, and ethical issues sport managers face in using computers to conduct research and work with various social media platforms in sport settings.

**SMGT 811. Sport in Society (3).** Addresses the impact of sports on American culture, with focus on competition, economics, mythology, education, religion, ethics, professional sports, sports and minorities.

**SMGT 818. Psychology of Sport (3).** An in-depth analysis of the psychology of motor learning and its implications for the teacher/coach.

**SMGT 822. Communication in Sport (3).** A sport organization's success is largely dependent on the degree to which it can effectively communicate with key constituents. Addresses a variety of communication-related topics, including public relations management, image, media relations and community relations.

**SMGT 828. Financial Management in Sport (3).** Designed to provide the prospective sport manager with an overview of the major financial issues concerning the sport industry. The concepts of resource acquisition and financial management are examined and applied to the problems faced by sport and leisure organizations today, primarily at the college and professional levels, with some attention to commercial recreational enterprises.

**SMGT 835. Legal Issues in the Profession I (3).** Provides students with the knowledge, understanding and application of how the following legal issues influence the sport industry. Specific content includes: the legal system, legal research, statutory law, risk management, tort law (negligence and intentional torts), contracts, alternative dispute resolution, and employment-related issues within the sport industry. In addition to the above content knowledge and application, case studies and class discussion focus on the enhancement of problem-solving skills and prudent managerial decision making. Prerequisites: admission to the MEd in sport management program or instructor's consent.

**SMGT 847. Internship (1–12).** Internship in selected areas of specialization in sport management. Prerequisite: departmental consent.

**SMGT 890. Special Topics (1–4).** Directed reading and research under supervision of a graduate instructor. Prerequisite: departmental consent.

NOTES

# College of Engineering

**Royce Bowden, *dean***
**100 Wallace Hall • (316) WSU-3400**
**wichita.edu/engineering**
**Steven Skinner,** *associate dean, undergraduate studies, finance and administration*
**Janet Twomey,** *associate dean, graduate studies, research and faculty success*
**Andrea Holzwarth,** *scholarship coordinator*

## Departments:

**Aerospace,** (316) 978-3410—L. Scott Miller, *chairperson*; Kamran Rokhsaz, *master's graduate coordinator;* Klaus Hoffmann, *doctoral graduate coordinator*

**Electrical Engineering and Computer Science,** (316) 978-3156— John Watkins, *chairperson;* Yanwu Ding, *graduate coordinator, MSEE;* Vinod Namboodiri, *graduate coordinator, MSCS and MSCN;* Rajiv Bagai, *graduate coordinator, PhD*

**Industrial and Manufacturing,** (316) 978-3425—Krishna Krishnan, *chairperson;* M. Bayram Yildirim, *graduate coordinator*

**Mechanical,** (316) 978-3402—Muhammad M. Rahman, *chairperson*; Tiruvadi Ravigururajan, *graduate coordinator*

The College of Engineering offers graduate programs leading to a Master of Science (MS) and a Doctor of Philosophy (PhD) in aerospace engineering, electrical engineering, industrial engineering, and mechanical engineering. Areas of specialization can be found in the individual departmental sections. A Master of Science in computer science and a Master of Science in computer networking are offered through the electrical engineering and computer science department. A Master of Engineering Management (MEM) is also offered; details can be found in the industrial and manufacturing engineering department section. The graduate programs are enhanced by the presence of the industrial complex in Wichita and of the National Institute for Aviation Research on the Wichita State campus.

Certificate programs are also offered through the College of Engineering, including four certificates offered through the industrial and manufacturing engineering department, one interdisciplinary certificate in advanced composite materials, and the engineering education certificate offered jointly with the College of Education.

Only students admitted to the College of Engineering or the Graduate School will be allowed to enroll in engineering courses. The academic dean will consider petitions for exceptions to the preceding statement because of legitimate reasons for qualified nonengineering students enrolling in engineering courses.

### Professional & Scholarly Integrity Training

Graduate students in the College of Engineering must complete the following four modules provided by Collaborative Institutional Training Initiative (CITI) as part of their graduation requirements:

1. Research misconduct;
2. Responsible authorship in engineering;
3. Conflicts of interest in engineering research;
4. Ethical issues in management of data in engineering research.

It is the student's responsibility to show evidence of the completion of the above four modules at the time of filing the plan of study.

## Master of Science

### Admission Requirements

To be admitted to the MS program, students must have completed the equivalent of an undergraduate degree in an engineering or related field. Students with deficiencies in certain areas may be required to take additional courses. Master's engineering programs require a minimum GPA of 3.000/4.000 for admission to full standing, 2.750/4.000 for admission on probation, and 2.500/4.000 for admission to nondegree, Category B. All GPAs are based on the last two years or approximately 60 credit hours of coursework. These standards may be waived at the discretion of the individual department based on an applicant's other qualifications. Scores for the general test of the Graduate Record Examination (GRE) are recommended for all students applying from non-U.S. institutions.

Also consult departmental admission sections of this catalog for additional admission requirements.

### Degree Requirements

The MS degree requires the completion of a plan of study approved by the student's advisor and the department graduate coordinator, which must be filed within the first 12 credit hours of graduate coursework.

Three options are available:

1. The thesis option requires a minimum of 24 hours of coursework plus a minimum of 6 hours of thesis;

2. The directed project option requires a minimum of 30 hours of coursework plus a minimum of 3 hours of directed project; and

3. The coursework option requires a minimum of 33 hours of coursework (36 credit hours in the department of electrical engineering and computer science).

At least 60 percent of the hours in the plan of study must be 700-level or above. Additional details of the MS degree may be obtained from the department graduate coordinator.

### Examination

Before the MS degree is granted, candidates in the thesis option must pass an oral examination over the thesis. Candidates in the directed project option must give an oral presentation and submit a written report on their directed project. Candidates in the coursework option may be required to pass a written exit exam. Details of the exit exam can be obtained from the department graduate coordinator.

## Doctor of Philosophy

PhD programs are offered by four of the departments of engineering at WSU. A grade point average of at least 3.250 in all graduate level coursework is required for admission. Typical fields of specialization can be found in the individual departmental sections. These fields will be used in determining testing areas for the comprehensive examination in the major and minor fields.

### Admission Requirements

Admission to any PhD program in engineering requires that the student has completed (or nearly completed) a master's degree in engineering or physical science. In some departments, scores for the general test of the Graduate Record Examination (GRE) must be submitted. Some students may find it necessary to take prerequisite courses to be able to meet the course breadth requirements. The student is recommended to the graduate dean for admission by the department chairperson in consultation with the graduate coordinator of the department where the graduate student will be housed.

Also consult departmental admission sections of this catalog for additional admission requirements.

### Plan of Study and Advisory Committee

Within the first 12 hours of PhD coursework, the department chairperson, in consultation with the graduate coordinator and the student, recommend to the graduate dean an advisory committee for each student. The committee will be composed of a minimum of five graduate faculty, with at least four having full membership including the chairperson who also must have authorization to chair doctoral committees. A majority of the advisory committee members must be from the major department and at least one member must be outside the student's major department. The chairperson of the advisory committee should be the student's dissertation advisor. The student and advisory committee chairperson will formulate a plan of study and a tentative dissertation topic for approval by the advisory committee, the department chairperson or graduate coordinator, and the graduate dean. The plan of study will include designation of major and minor fields and all graduate-level coursework which is applicable to the degree.

***Course Breadth Requirements:*** To ensure proper breadth of coursework, the plan of study must include at least 15 hours in the student's major field and 18 hours outside the major area. The 18 hours must include a minimum of 6 hours in a minor area (defined by the advisory committee) and a minimum of 6 hours of mathematics/statistics. A plan of study normally contains 60 hours of coursework, including courses from the master's degree, and should have a minimum of 60 percent of the hours (24 dissertation hours included) beyond the master's work at the 800–900 level or equivalent.

### Comprehensive Examination

After the PhD plan of study has been approved and after sufficient coursework has been completed, the student must take the comprehensive examination given by the advisory committee. The comprehensive examination will cover the major and minor fields and any course that the advisory committee deems necessary. The student's advisory committee is responsible for ensuring that the student takes the comprehensive examination at the appropriate time. No part of the comprehensive examination may be attempted more than twice. Upon passing the comprehensive examination, a student is known as an aspirant for the PhD.

### Time Limits and Residency Requirement

From the time the student is admitted to the program, no more than six years may elapse until requirements for the degree have been completed. However, the student may petition the advisory committee for a leave of absence to pursue full time professional activities related to his or her doctoral program and long-range professional goals. At least two semesters shall be spent in residency on the WSU campus involved in full-time academic pursuits. This may include up to half-time teaching and research. Well-designed plans for obtaining dissertation research experience under the supervision of the student's advisor will be considered in lieu of the residency requirement.

### Dissertation Approval Examination (DAE)

When the PhD aspirant has completed the major portion of the coursework, the advisory committee can petition for permission to administer the DAE. The aspirant submits a written dissertation proposal to the advisory committee. After reading the proposal, the advisory committee conducts an oral examination to determine the aspirant's ability to carry out the proposed research and whether or not this research qualifies as a PhD dissertation. Any essential change in the project requires committee approval.

After passing the DAE, the student is known as a candidate for the PhD degree. Upon notification to the graduate dean of a successful DAE, the student's doctoral committee is officially acknowledged and recorded by the Graduate School. A candidate must be continuously enrolled in PhD Dissertation for a minimum of 6 hours each semester and 2 hours in the summer session until completion of the dissertation or 24 hours of PhD Dissertation have been taken. After this, 2 hours per semester are required. In any case, no less than 24 hours of enrollment for PhD Dissertation will be required. The dissertation may be performed in absentia with the approval of the advisory committee.

### Final Dissertation Examination

The student must defend the dissertation before the advisory committee. At least five months must elapse between the DAE and the final examination. The final examination will be open to the public. Invited guests or external examiners may be invited if the committee desires.

## Graduate Certificates

#### *Graduate Certificate in Advanced Composite Materials*

The College of Engineering offers a graduate certificate program in the area of advanced composite materials.

This program is designed to equip students with a knowledge of advanced composite materials including materials and processes, manufacturing, and structural analysis and design.

The array of courses is structured to provide extensive information about advanced composite material technologies, analyses associated with composite materials, and processing of composite materials. Program prerequisites: MATH 555, AE 333, and ME 250. This program requires satisfactory completion of the following courses (a total of 12 credit hours):

| *Course* | *hrs.* |
|---|---|
| IME 576 Composites Manufacturing | 3 |
| AE 753 Mechanics of Laminated Composites | 3 |
| ME 762 Polymeric Composite Materials | 3 |
| *One of the Following* | |
| AE 853 Advanced Mechanics of Laminated Composites | |
| *or* Graduate level directed studies or special topics course in a composites related area approved by the COE Advanced Composites Committee | 3 |

Students seeking this certificate must be admitted to the Graduate School in either a graduate degree program or in a nondegree, Category A status. All Graduate School policies relative to admissions apply. International students will not be issued an I-20 for pursuing a certificate program only, but they may obtain a certificate while concurrently pursuing a graduate degree.

Students pursuing a graduate certificate must submit a plan of study request to complete the certificate. Students may apply certificate coursework toward a degree program.

A cumulative grade point average of 3.000 must be maintained for all courses comprising the certificate program with no grades below *C*.

#### *Graduate Certificate in Engineering Education*

The College of Education, in conjunction with the College of Engineering, offers the graduate certificate in engineering education. The graduate certificate in engineering education is designed to (1) provide engineering graduate students with knowledge of contemporary learning theories that can be applied to university level instruction;

(2) provide engineering graduate students with knowledge and skills in classroom testing and program evaluation; (3) provide engineering graduate students with knowledge of pedagogical skills that can be applied to university level instruction; (4) provide engineering graduate students with the skills to apply knowledge of learning theory, pedagogical theory and measurement theory in an authentic university setting. This certificate program provides joint mentorship from College of Education and College of Engineering faculty members. Students who plan to apply for university teaching positions after graduation need to be competitive in a market that demands good teaching as well as good research. The engineering education certificate will give WSU graduates a competitive edge. The following courses are required for completion of this certificate:

| | |
|---|---|
| CESP 820 | Learning Theory and Instruction – 3 hours (spring) |
| CESP 811 | Principles of Measurement and Program Evaluation – 3 hours (spring) |
| CI 816 | Advanced Methods: Developing Critical and Creative Thought – 3 hours (spring) |
| CI 816A | Internship: Developing Critical and Creative Thought – 3 hours (fall) |

***Admission Requirements:*** Students seeking this graduate certificate program must be Wichita State University engineering graduate students in good standing either in a degree bound program or in nondegree, Category A status. Students should contact the Graduate School to determine if they need to apply for admission to this status, or need to reactivate their enrollment file. Students who have not completed graduate coursework at Wichita State University will need to apply for admission to degree status or nondegree, Category A status in an appropriate area of engineering, by submitting an application and application fee to the Graduate School. Two official transcripts from all schools attended must be sent directly to the Graduate School from the institution issuing the transcript, or must be submitted to the Graduate School office in envelopes sealed by the issuing institution, if issued to student.

***Completion Requirements:*** A cumulative graduate GPA of 3.000 for all courses comprising the certificate program is required. No grades below *C* (2.000) are allowed in certificate program courses. Completion process:

1. Students must notify the program area, in writing, of intent to complete the certificate.
2. In the semester the certificate requirements are met students must:
   a. With graduate advisor, prepare and submit to the Graduate School a plan of study for the certificate.
   b. Submit to the Graduate School an application for the certificate along with a $15 filing fee.

Deadlines are no later than the 20th day of fall or spring semester, or the 10th day of a summer term.

# Aerospace Engineering (AE)

Graduate Faculty

*Distinguished Professors:* Klaus A. Hoffmann, Gordon Distinguished Professor (doctoral graduate coordinator); Michael L. Papadakis, H. Russell Bomhoff Endowed Professorship in Engineering; John S. Tomblin, Associate Vice President for Research, Division of Academic Affairs and Research, Executive Director, National Institute of Aviation Research, and Bloomfield Distinguished Professor

*Professors:* L. Scott Miller (chairperson), Kamran Rokhsaz (master's graduate coordinator), Roy Y. Myose, James E. Steck, Charles Yang

*Associate Professor:* Suresh Raju

*Assistant Professors:* Animesh Chakravarthy, Atri Dutta, Linda K. Kliment, Nicholas A. Smith

The department of aerospace engineering offers programs leading to Master of Science (MS) and Doctor of Philosophy (PhD) degrees. Faculty research provides valuable educational opportunities for graduate students. Current research topics include acoustics, aeroelasticity, aerothermodynamics, aircraft dynamic loads, aircraft flight dynamics, aircraft icing, airfoil design and rotor aerodynamics, artificial neural networks, composite materials, computational fluid dynamics, computational solid mechanics, continuum damage and fracture mechanics, damage tolerance, design, experimental aerodynamics, finite element analysis, flight dynamics and control, flight mechanics, hypersonics, intelligent control, laser velocimetry, solid mechanics, structural dynamics, and theoretical and applied aerodynamics.

The department's research and instructional facilities are among the finest in the nation. They include five wind tunnels, a water tunnel, a small-aircraft prototype lab, and a structural testing laboratory. Graduate students have opportunities to use the equipment in all laboratories for their research projects. Students also may use the research facilities in the university's National Institute for Aviation Research, including a composite materials lab and a crash dynamics lab. Computer facilities for students include mainframe terminals, high performance workstations, and various personal computers.

The department's programs are enhanced by Wichita's aviation heritage and the presence of major aerospace companies in the city, including Airbus, Bombardier Aerospace, Spirit AeroSystems, and Textron Aviation (including Beechcraft and Cessna).

Graduate coursework is scheduled so that engineers employed in the local industry may conveniently pursue graduate degrees.

## Master of Science

Courses of study leading to the MS degree are available with specialization in any of the following four fields: (1) aerodynamics and fluid mechanics; (2) structures and solid mechanics; (3) flight dynamics and control; and (4) multidisciplinary analysis and design.

### *Degree Requirements*

Students must complete the following requirements:

1. One of these groups of core classes based on their chosen specialty*:
   Aerodynamics: AE 711, AE 716 and AE 812
   Structures: AE 722, AE 731 and AE 777
   Controls: AE 707, AE 714 and AE 773
   Multidisciplinary Analysis and Design (see advisor for details)
2. One graduate level course in mathematics/statistics with the approval of the department.
3. With the approval of the advisor, four other graduate level classes plus a minimum of 6 credit hours of AE 876 in the thesis option, or six other graduate level courses plus a minimum of 3 credit hours of AE 878 in the directed project option), or seven other graduate level courses plus passing an exam covering the core courses in the area of specialty.

*Other graduate-level courses may be substituted for any of these nine courses that have been taken as a part of the undergraduate program

## Doctor of Philosophy

Courses of study leading to the Doctor of Philosophy (PhD) degree are available with specializations in the same fields as listed for the MS degree.

### *Degree Requirements*

The plan of study must include 60 hours of coursework, including courses from the MS degree, and 24 hours of dissertation (AE 976). A minimum of 60 percent of hours (including dissertation hours) beyond the MS coursework must be at the 800–900 level. The student must select a major area and complete a minimum of 15 hours in the major area. The three major areas and the required courses (9 hours) in each area are:

Aerodynamics/Fluid Mechanics: AE 711, AE 716 and AE 812

Solid Mechanics/Structures: AE 722, AE 731 and AE 777

Control/Flight Mechanics: AE 707, AE 714 and AE 773

Multidisciplinary Analysis and Design (see advisor for details)

The student must also declare a minor area defined by the advisory committee. Eighteen (18) credit hours must be outside the major area which would include 6 hours in the minor. A minimum of 6 hours of mathematics/statistics is also required.

## Graduate Courses

All graduate courses must be approved in advance of enrollment by a student's graduate advisor.

### Courses for Graduate/Undergraduate Credit

**AE 502. Aerospace Propulsion I (3).** Survey of aerospace propulsion methods. Production of thrust and consumption of fuel. Rocket performance analysis; liquid chemical and solid propellant rocket engines. Jet engine cycle analysis; turbojet, ramjet, turbofan and turboprop engines. Analysis of piston engines and propellers. Prerequisites: AE 227, 373, ME 398. Corequisite: AE 524.

**AE 512. Experimental Methods in Aerospace (3). 1R; 4L.** A study of experimental methods and test planning, error analysis and propagation, model design, instrumentation and flow visualization. Uses electromechanical testing machines, subsonic and supersonic wind tunnels. Prerequisites: AE 333, 424. Corequisite: AE 524.

**AE 514. Flight Dynamics and Control (3).** Static stability and control of conventional aircraft and implications in aircraft design, six degrees of freedom, time dependent equations of motion and their linearized solutions. Consideration of stability versus maneuverability and the dynamic modes of motion of the aircraft. Prerequisite: AE 415. Corequisite: AE 424.

**AE 524. Aerodynamics II (3).** Continues the discussion of potential flow from AE 424. Introduces energy equation, fundamental concepts of high speed flow, normal and oblique shock waves, Prandtl-Meyer flow, nozzles and diffusers, linearized high speed potential flow, airfoils and wings in subsonic and supersonic flow, Navier-Stokes equation, boundary layer flow, momentum integral approximation and various laminar and turbulent flow solutions, introduction to convective heat transfer. Prerequisite: AE 424.

**AE 525. Flight Structures I (3). 2R; 2L.** Stress analysis of flight vehicle components. Prerequisite: AE 333 (no grade lower than one that generates 2.000 or more credit points per credit hour will be accepted for this course). Corequisite: MATH 555.

**AE 527. Numerical Methods in Engineering (3).** Error analysis. Includes polynomial approximations and power series, iterative solutions of equations, matrices and systems of linear equations, numerical differentiation and integration, approximate solution of differential equations by finite differences. Prerequisite: AE 227. Corequisite: MATH 555.

**AE 528. Aerospace Design I (4). 2R; 4L.** Methodology of flight vehicle design; mission objectives, regulations, and standards; use of hand and computer methods for configuration development and component sizing, ethics, and liability in design. Prerequisites: AE 502, 514, 525.

**AE 607. Flight Control Systems (3).** Classical design methods for stability and control augmentation and guidance systems specifically for aerospace vehicles, including block diagrams, root locus and frequency response. Sensors used in aerospace systems. Flying qualities and performance specifications for closed loop systems. Includes a review of the aircraft and spacecraft dynamic model derivation. Prerequisite: AE 514.

**AE 625. Flight Structures II (3). 2R; 3L.** Strength analysis and design of flight vehicle components. Introduction to energy methods and variational principles. Application of finite element method to the analysis of flight vehicle structures. Special projects in structural analysis and design. Prerequisites: AE 333, 525.

**AE 628. Aerospace Design II (4). 2R; 4L.** Preliminary design of flight vehicles, design iteration, sensitivity studies, optimization, economic considerations and introduction to project management. Prerequisite: AE 528.

**AE 660. Selected Topics (1–3).** New or special topics presented on sufficient demand. Repeatable for credit when subject material warrants. Prerequisite: instructor's consent.

**AE 690. Independent Study (1–3).** Arranged individual independent study in specialized areas of aerospace engineering under the supervision of a faculty member. Repeatable for credit. Prerequisite: consent of supervising faculty member.

**AE 702. Aerospace Propulsion II (3).** In-depth study of rocket and jet propulsion. Turbojet and rocket engine components. Effect of operating variables on turbojet cycles and rocket performance. Prerequisite: AE 502 or instructor's consent.

**AE 703. Rotor Aerodynamics (3).** Aerodynamics of rotors, including propellers, wind turbines and helicopters; momentum, blade element and potential flow analysis methods; helicopter dynamics, control and performance. Prerequisite: AE 424.

**AE 707. Modern Flight Control System Design I (3).** Modern multi-loop design methods for stability and control augmentation and guidance systems, specifically for aerospace vehicles. State variable model. Optimal state feedback gains and Riccati's equation, tracking systems, sensors and actuator, discretization of continuous dynamic systems, optimal design for digital controls, and effect of nonlinearities and trim conditions on design considerations. Prerequisites: AE 514 or 714, and AE 607 or EE 684 or ME 659.

**AE 711. Intermediate Aerodynamics (3).** Studies potential flow equations of motion, singularity solutions, principle of superposition, conformal mapping, thin airfoil theory, finite wing theory, effects of fluid inertia, three-dimensional singularities, swept wing theory, delta wing theory, introduction to panel methods and an introduction to automobile aerodynamics. Prerequisite: AE 424 or ME 521.

**AE 712. Advanced Aerodynamics Laboratory (3). 2R; 2L.** Advanced topics in wind tunnel testing, including analysis and sensitivity, modeling techniques, flexure design and calibration, control surface loads and moments, laser velocimetry, hot film anemometry, dynamic signal processing, flow measurement probes, flow visualization using smoke tunnels and water tunnel. Prerequisite: AE 512 or instructor's consent.

**AE 714. Advanced Flight Dynamics I (3).** Review of the equations of motion for aircraft. Nonlinear effects and aircraft response. Stability and control of elastic aircraft. Response to turbulence. Prerequisite: AE 514 or instructor's consent.

**AE 715. Intermediate Space Dynamics (3).** Advanced topics in orbital mechanics—vector mechanics perspective of the two-body problem; fast transfers; interplanetary missions including gravity assist maneuver and intercept problem; atmospheric entry. Prerequisite: AE 415 or instructor's consent.

**AE 716. Compressible Fluid Flow (3).** Analysis of compressible fluid flow for one- and two-dimensional cases, moving shock waves, one-dimensional flow with friction and heat addition, linearized potential equation, method of characteristics, conical shocks and subsonic similarity laws. Prerequisites: AE 424, ME 521 or equivalent.

**AE 719. Introduction to Computational Fluid Dynamics (3).** Classification of partial differential equations, numerical solution of parabolic, elliptic and hyperbolic differential equations, stability analysis, boundary conditions, scalar representation of the Navier-Stokes equations, incompressible Navier-Stokes equations. Prerequisite: AE 424 or ME 521.

**AE 722. Finite Element Analysis of Structures I (3).** Advanced treatment of the theoretical concepts and principles necessary for the application of the finite element method in the solution of differential equations in engineering. Prerequisites: AE 333, 625 or equivalent, or instructor's consent.

**AE 731. Theory of Elasticity (3).** Develops the equations of the theory of elasticity and uses them to determine stress and displacement fields in linear elastic isotropic bodies; uses Airy stress functions to obtain solutions, and introduces energy principles and variational methods. Prerequisite: instructor's consent.

**AE 733. Advanced Mechanics of Materials (3).** An extension of AE 333. Includes transformation of stress and strain in three dimensions, noncircular torsional members, curved beams, beams with unsymmetric cross sections, energy methods and the finite element method of analysis, stress concentration, theories of failure and fracture mechanics. Prerequisite: AE 333.

**AE 737. Mechanics of Damage Tolerance (3).** An introduction to the mechanics of damage tolerance emphasizing stress analysis oriented fracture mechanics. Includes stress intensity, fracture toughness, residual strength, fatigue crack growth rate, fatigue crack propagation and damage tolerance concepts. Prerequisite: AE 525 or instructor's consent.

**AE 753. Mechanics of Laminated Composites (3).** A descriptive classification of advanced composite materials and their constituents; mechanics of lamina and laminates, testing for material properties, lamina and laminate failure criteria, laminate strain allowables, structural analysis (beams and axially loaded members), design guidelines, introduction to manufacturing methods, repair and nondestructive testing. Prerequisites: AE 333, senior standing.

**AE 759. Neural Networks for System Modeling and Control (3).** Introduces specific neural network architectures used for dynamic system modeling and intelligent control. Includes theory of feed-forward, recurrent, and Hopfield networks; applications in robotics, aircraft and vehicle guidance, chemical processes and optimal control. Prerequisite: AE 607 or ME 659 or EE 684 or instructor's consent.

**AE 760. Selected Topics (1–3).** Prerequisite: instructor's consent.

**AE 773. Intermediate Dynamics (3).** An extension of AE 373. Studies the kinematics and kinetics of particles and rigid bodies for two- and three-dimensional motion. Includes an introduction to vibratory motion, dynamic stability of linear systems and Lagrange's equations. Prerequisite: AE 373.

**AE 777. Vibration Analysis (3).** A study of free, forced, damped and undamped vibrations for one and two degrees of freedom, as well as classical, numerical and energy solutions of multi-degree freedom systems. Introduces continuous systems. Prerequisites: MATH 555, AE 333, 373.

### Courses for Graduate Students Only

**AE 801. Structural Dynamics (3).** A study of the dynamic response of multiple degree of freedom systems and continuous systems subjected to external dynamic forcing functions. Classical, numerical and energy solutions. Prerequisite: AE 777.

**AE 807. Modern Flight Control Systems Design II (3).** Continuation of AE 707, emphasizing the effects of atmospheric turbulence and corrupted measurements, state estimation using the Kalman filter, output feedback design methods for flight controls, robustness requirements in the design, and extension to digital systems. Prerequisites: AE 707, 714.

**AE 811. Panel Methods in Aerodynamics (3).** An introduction to panel method theory and application for inviscid incompressible attached flows. Uses some two- and three-dimensional computer codes. Prerequisites: AE 711, MATH 757 or equivalent.

**AE 812. Aerodynamics of Viscous Fluids (3).** Viscous fluids flow theory and boundary layers. Prerequisite: AE 424 or ME 521.

**AE 813. Introduction to Aeroelasticity (3).** Studies phenomena involving interactions among aerodynamic, inertial and elastic forces. Explores the influence of these interactions on aircraft design. Includes such specific cases as divergence, control effectiveness, control reversal, flutter, buffeting, dynamic response to rapidly applied periodic forces, aeroelastic effects on load distribution, and static and dynamic stability. Prerequisite: AE 777 or MATH 757, or instructor's consent and programming proficiency.

**AE 814. Advanced Flight Dynamics II (3).** Sensitivity analyses of flight parameters, control surface sizing, handling qualities, pilot in-the-loop analysis, trajectory optimization. Prerequisite: AE 714.

**AE 817. Transonic Aerodynamics (3).** Experimental and analytical difficulties in flow and flight near Mach one; basic equations and solution methods: linearized potential equation, shock occurrence criteria on wings, Transonic Area Rule, nozzle throat design, detached shock wave computations, computational methods. Prerequisites: AE 424 or equivalent, and AE 711 or 716.

**AE 818. Hypersonic Aerodynamics (3).** Classical hypersonic theory and approximations; Newtonian flow, flight corridors and trajectories, hot gas effects, experimental difficulties, short time test facilities, computational techniques, propulsion methods, airframe-engine integration, SCRam jets. Prerequisites: AE 711, 716 or equivalent.

**AE 822. Finite Element Analysis of Structures II (3).** Formulation of the finite element equations by variational methods; the use of isoparametric and higher order elements for analyzing two- and three-dimensional problems in solid mechanics; introduction to solutions of nonlinear problems. Prerequisites: AE 722, 731.

**AE 831. Continuum Mechanics (3).** Introductory treatment of the fundamental, unifying concepts of the mechanics of continua with applications to classical solid and fluid mechanics. Prerequisite: instructor's consent.

**AE 832. Theory of Plates and Shells (3).** Small deflections of thin elastic plates, classical solutions for rectangular and circular plates, approximate solutions for plates of various shapes, introduction to the analysis of thin shells. Prerequisite: AE 731.

**AE 833. Theory of Elastic Stability (3).** Buckling of columns, frames, beams, plates and shells. Prerequisite: AE 731.

**AE 837. Advanced Mechanics of Damage Tolerance (3).** An extension of AE 737. Includes mathematical foundations of linear elastic and nonlinear fracture mechanics, computational fracture mechanics, and mechanics of distributed cracking. Prerequisites: AE 731, 737, or instructor's consent.

**AE 853. Advanced Mechanics of Laminated Composites (3).** An extension of AE 753. Includes anisotropic elasticity, classical laminate and first order shear deformation theories, FE analysis of composites, free-edge effects, failure theories, lateral deflections, elastic stability, analysis of notched laminates and sandwich structures. Prerequisites: AE 722, 731, 753, MATH 758.

**AE 860. Selected Topics (1–3).** Prerequisite: instructor's consent.

**AE 876. MS Thesis (1–6).** Graded *S/U* only.

**AE 878. MS Directed Project (1–3).** A project conducted under the supervision of an academic advisor for the directed project option. Requires a written report and an oral presentation on the project. Graded *S/U*. Prerequisite: consent of academic advisor.

**AE 890. Independent Study (1–3).** Arranged individual independent study in specialized areas of aerospace engineering under the supervision of a faculty member. Repeatable for credit. Prerequisite: consent of supervising faculty member.

**AE 911. Airfoil Design (3).** Historical development of airfoils, underlying theories and experiments, modern airfoil design philosophies and techniques, theories used in modern airfoil computation methods, application of computer programs for practical airfoil design problems including high lift and control devices. Prerequisites: AE 711, MATH 757.

**AE 913. Aerodynamics of Aeroelasticity (3).** A study of thin airfoils and finite wings in steady flow and thin airfoils oscillating in incompressible flow. Includes extension to compressible and three-dimensional airfoils and modern methods for low aspect ratio lining surfaces. Prerequisites: AE 711, 777 or instructor's consent.

**AE 919. Advanced Computational Fluid Dynamics (3).** A study of structured grid generation schemes, transformation of the governing equations of fluid motion, numerical algorithms for the solution of Euler equations, parabolized Navier-Stokes equations, and Navier-Stokes equations. Explores the fundamentals of unstructured grids and finite volume schemes. Prerequisite: AE 719.

**AE 936. Theory of Plasticity (3).** Includes criteria of yielding, plastic stress-strain relationships; stress and deformation in thick-walled shells, rotating discs and cylinders, bending and torsion of prismatic bars for ideally plastic and strain-hardening materials. Includes two-dimension and axially symmetric problems of finite deformation and variational and extremum principles. Prerequisite: AE 731.

**AE 960. Advanced Selected Topics (1–3).** Prerequisite: instructor's consent.

**AE 976. PhD Dissertation (1–16).** Repeatable for credit. Graded *S/U*. Prerequisite: admission to doctoral aspirant status.

**AE 990. Advanced Independent Studies (1–3).** Prerequisite: instructor's consent.

# Biomedical Engineering (BME)

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

### Courses for Graduate/Undergraduate Credit

*For a course to be used as a prerequisite to BME courses, it must have been passed with a grade of C or better (generating 2.000 grade points or better).*

**BME 590. Independent Study and Research (1–3).** Independent study or research directed by a faculty member affiliated with the biomedical engineering program. May be repeated for credit. A maximum of 3 credit hours may be applied toward graduation. Prerequisite: consent of supervising faculty member.

**BME 735. Biocomputational Modeling (3).** Prepares students for engineering practice by introducing 3D multiphysics modeling software. Students use COMSOL multiphysics simulation software linked with SolidWorks and MATLAB to solve engineering problems in complex 3D geometries such as the human body. Within the simulation software environment, students define the geometry, set boundary conditions, specify the physics, set material properties, mesh, simulate, and visualize their results. Topics include modeling of biofluid mechanics (e.g., stress and strain on arteries), heat and mass transfer (i.e., bioheat and drug delivery), and structural mechanics (i.e., stress and strain on bone). Computer simulation has become an essential part of science, medicine and engineering. Course gives students hands on experience to meet those demands. Prerequisites: either BME 462 or ME 521, and BME 335 or its equivalent; or instructor's consent.

**BME 738. Biomedical Imaging (3).** Prepares students with knowledge of medical imaging and gives hands on experience with ultrasound imaging, dual-energy x-ray absorptiometry (DEXA), spectral imaging, and medical image processing labs. Covers medical imaging modalities such as planar x-ray, x-ray computed tomography (CT), DEXA, magnetic resonance imaging (MRI), nuclear medicine imaging—positron emission tomography and single-photon emission computed tomography, ultrasound imaging, and spectral imaging. Students gain hands on experience with medical image processing software to import CT or MRI scans and construct 3D models of human anatomy. Introduces fundamental physical and engineering principles used in medical imaging and image processing, with a primary focus on physical principles, instrumentation methods, and image processing methods. Strengths, limitations, sensitivity and appropriate applications for each modality of imaging are also examined. Prerequisites: PHYS 314 and BME 335 or its equivalent; or instructor's consent.

**BME 742. Biosensor Development (3).** A comprehensive introduction to the basic features and components of biosensors. Discusses different ways to evaluate the physiological state of cells in culture or a whole organism using various methods such as: optical detection, impedance measurements, amperometric measurements, potentiometric measurements and physical measurements using a scanning probe microscope. Primary focus is given to optical measurements and techniques used to explore surface chemistry such as: bioconjugation of biomolecules such as proteins, biomolecule attachment to transducer surfaces, DNA mircoarrays and bead-based assays. Case studies and analysis of commercially available biosensors are covered. Students perform a project for the design, fabrication and testing of a microfluidic-based biosensor. Students leave the course with a fundamental knowledge of biosensor design and development. Prerequisites: MATH 242 and either CHEM 532 or 533 or 536; or instructor's consent.

**BME 747. Biochemical Engineering (3).** Prepares students for careers in the pharmaceutical industry as

research scientists or process engineers. Students learn about designing scaffolds for tissues, molecular design for new drugs, in vitro testing of cells and in vivo testing of whole organisms. Students are guided through the process of transgenic organism production, production of pharmaceutical agents using bioreactors and downstream processing. Topics covered include the thermodynamics and kinetics for the biosynthesis or enzymatic degradation of various biological macromolecules. Students learn the application of engineering principles to analyze, design and develop processes using biocatalysts to enhance these processes. Processes covered include those that are involved in the formation of desirable compounds and products and in the transformation, or destruction of unwanted substances. Several in-class demonstrations are performed, and students design a microbioreactor. Prerequisites: MATH 242 and either CHEM 532 or 533 or 536; or instructor's consent.

**BME 752. Applied Human Biomechanics (3).** Examines the biology, physiology, and structure of skeletal muscle, the mechanisms of skeletal muscle force generation, and the adaptations to muscle that arise from changes in muscle usage. Students learn to create biomechanical models and generate simulations of human movement based on data collected in a human biomechanics lab. Experimental design and data analysis and interpretation are emphasized. Prerequisites: BIOL 223 and BME 452 or its equivalent; or instructor's consent.

**BME 757. Clinical Biomechanics Instrumentation (3).** Students learn to collect, process, analyze and interpret motion of the human body (e.g., running, walking, jumping, lifting, etc.), muscle force, muscle activity and acceleration data using various equipment in a human biomechanics lab. The equipment and techniques used are common to multiple fields and disciplines, including physical medicine and rehabilitation, orthopedics, physical therapy, prosthetics and orthotics, wearable biosensors, sports performance and medical/sport/safety equipment design. Prerequisite: BME 452 or instructor's consent.

**BME 777. Biodegradable Materials (3).** A comprehensive overview of biodegradable materials as it relates to their applications in the biomedical and health care fields. Covers in detail different classes of biodegradable materials including biodegradable polymers, ceramics and metals. Synthesis, characterization and degradation of these materials in the biological environment are covered. Biodegradation/biocorrosion mechanisms of these materials, the complexity of the response of the biological environment, and the experimental methods for monitoring the degradation process are discussed, as well as strategies for surface modification to control the degradation. Finally specific applications are covered. Prerequisite: either BME 477 or ME 651; or instructor's consent.

**BME 779. Tissue Engineering (3).** Introduction to the strategies and fundamental bioengineering design criteria behind the development of tissue substitutes. Principles of engineering and the life sciences toward the development of biological substitutes that restore, maintain or improve tissue function are covered. Topics include stem cells, cell growth and differentiation, cell signaling, materials for scaffolding, scaffold degradation and modification, cell culture environment, cell nutrition, cryopreservation, bioreactor design, clinical applications, regulatory and ethics. Prerequisite: BME 477 or instructor's consent.

# Electrical Engineering and Computer Science (EECS)

**Graduate Faculty**

*Professors*: Ward T. Jewell, Hyuck M. Kwon, Prakash Ramanan, M. Ed Sawan (emeritus), Steven R. Skinner (associate dean for undergraduate studies, finance and administration), John M. Watkins (chairperson)

*Associate Professors:* Rajiv Bagai (graduate coordinator, PhD), Yanwu Ding (graduate coordinator, MSEE), Preethika Kumar (undergraduate coordinator), Vinod Namboodiri (graduate coordinator, MSCN and MSCS)

*Assistant Professors:* Visvakumar Aravinthan, Abu Asaduzzaman, Animesh Chakravarthy, Zheng Chen, Murtuza Jadliwala, Huzefa Kagdi, Chengzong Pang, Kaushik Sinha, Yi Song, Pu Wang

The department of electrical engineering and computer science (EECS) offers courses of study leading to the PhD in electrical engineering and computer science, and to three Master of Science (MS) degrees: computer networking, computer science, and electrical engineering.

## Master of Science Degrees

### Master of Science in Computer Networking

The Master of Science in computer networking (MSCN) degree program prepares graduate students for career-oriented jobs in the rapidly growing computer networking industry, or for gaining admission to PhD programs around the world. Its curriculum is designed to ensure that students can study theoretical foundations of computer networking as well as modern research trends in courses taught by active researchers having national and international recognition.

#### *Admission Requirements*

The program admits students with a bachelor's degree in computer science, computer engineering, electrical engineering, or an area related to information technology. Students from other areas with at least one year of university-level engineering mathematics may be admitted with an extra requirement to complete some undergraduate background deficiency courses prescribed at the time of admission.

To be considered for admission to the program, a student must have earned a GPA of at least 3.000 (or an equivalent score from another country) in the last two years of education. Students whose bachelor's degree is from an institution outside the U.S. are required to submit official scores of the GRE General Test along with the admission application.

#### *Degree Requirements*

1. Major area courses: each MSCN student must take at least 18 hours of major area courses that are listed on the EECS department's website. Courses taken from this group must include CS 736, at least one of CS 721 and CS 731, at least 12 hours of 800-level or higher courses (including thesis or project, if any), and at least 3 hours of courses with a research writing and presentation component.
2. Electives: up to 12 hours of 600-level or higher courses other than the major area courses may be taken by a student including, at most, 6 hours of courses outside the department, approved by the student's advisor.

#### *Graduating Options*

*Thesis Option*—at least 30 hours, including 6 hours of thesis, CS 892.

*Project Option*—at least 33 hours, including 3 hours of project, CS 891.

*Coursework Option*—at least 36 hours.

### Master of Science in Computer Science

The Master of Science in computer science (MSCS) degree program prepares graduate students for career-oriented jobs, or for gaining admission into PhD programs around the world. Its curriculum is designed to ensure that students can study traditional areas of computer science as well as modern research trends in courses taught by active researchers having national and international recognition.

#### *Admission Requirements*

The program admits students with a bachelor's degree in computer science, computer engineering, or a related area. Students from other areas with at least one year of university-level engineering mathematics may be admitted with an extra requirement to complete some undergraduate background deficiency courses prescribed at the time of admission.

To be considered for admission to the program, a student must have earned a GPA of at least 3.000 (or an equivalent score from another country) in the last two years of education. Students whose bachelor's degree is from an institution outside the U.S. are required to submit official scores of the GRE General Test along with the admission application.

#### *Degree Requirements*

1. Major area courses: each MSCS student must take at least 18 hours of major area courses that are listed on the EECS department's website. Courses taken from this group must include CS 721 at least 12 hours of 800-level or higher courses (including thesis or project, if any), and at least 3 hours of courses with a research writing and presentation component.
2. Electives: up to 12 hours of 600-level or higher courses other than the major area courses may be taken by a student including, at most, 6 hours of courses outside the department, approved by the student's advisor.

#### *Graduating Options*

*Thesis Option*—at least 30 hours, including 6 hours of thesis, CS 892.

*Project Option*—at least 33 hours, including 3 hours of project, CS 891.

*Coursework Option*—at least 36 hours.

### Master of Science in Electrical Engineering

The Master of Science in electrical engineering (MSEE) is a flexible degree program for students seeking an advanced professional career in electrical engineering, or gaining admission into PhD programs around the world. Students of the program have the opportunity to build a strong foundation in physical science and mathematics, while exploring key subdisciplines taught by active researchers having national and international recognition in communication and signal processing, computing systems, control systems and robotics, power and energy systems, and computer networking.

#### *Admission Requirements*

The program admits students with a bachelor's degree in electrical engineering, computer engineering, or a related area. Students from other areas with at least one year of university-level engineering mathematics may be admitted with an extra requirement to complete some undergraduate background deficiency courses prescribed at the time of admission.

To be considered for admission to the program, a student must have earned a GPA of at least 3.000 (or an equivalent score from another country) in the last two years of education. Students whose bachelor's degree is from an institution outside the U.S. are required to submit official scores of the GRE General Test along with the admission application.

#### *Degree Requirements*

Each MSEE student chooses a major and minor specialization area. Major areas in the department are communication and signal processing, computing systems, control systems and robotics, and power and energy systems. Any of these can also be chosen as a minor area. In addition, computer networking can be a minor area. Current courses in each of these areas are listed on the department's website. The number of courses taken by the student in the major and minor areas depends upon the graduating option chosen. A limited number of electives may also be taken with approval of the student's advisor.

#### *Graduating Options*

*Thesis Option*—at least 30 hours, including (a) at least 9 hours of courses from a major area, of which at least 3 hours must be numbered at 800-level or higher, (b) at least 6 hours of courses from a minor area, and (c) 6 hours of thesis, EE 876.

*Project Option*—at least 33 hours, including (a) at least 9 hours of courses from a major area, of which at least 3 hours must be numbered at 800-level or higher (b) at least 6 hours of courses from a minor area, and (c) 3 hours of project, EE 878.

*Coursework Option*—at least 36 hours, including (a) at least 12 hours of courses from a major area, of which at least 6 hours must be numbered at 800-level or higher, and at least 3 hours must be courses with a research writing and presentation component, (b) at least 6 hours of courses from a minor area, of which at least 3 hours must be numbered at 800-level or higher, and (c) at least 27 hours of courses from the MSEE major and minor course list.

## Doctor of Philosophy

The Doctor of Philosophy (PhD) in electrical engineering and computer science prepares students for conducting advanced research in several specialization areas listed below. Students of this program take courses that span the breadth of this field, as well as depth in their chosen specialization areas. Under the supervision of recognized researchers, students conduct research leading to archival publications, and prepare themselves for a research-oriented career.

#### *Admission Requirements*

In addition to the general admission requirements for all doctoral students in the College of Engineering, admission to the PhD EECS program requires the completion of a master's degree in electrical engineering, computer science, or a related field. A combined verbal and quantitative GRE score of 301 (new scale) is required. Evidence of ability to carry out independent research and present it in written English is highly desirable. Two letters of recommendation and a statement of purpose are encouraged. Each applicant is evaluated individually.

#### *Degree Requirements*

The program requires 84 hours of courses that include 24 hours of PhD dissertation describing the research preformed under the supervision of an EECS research faculty member. The remaining 60 hours may include up to 36 hours of courses transferred from the student's master's program from a regionally-accredited institution (or equivalent international institution). Master's courses transferred must be traditional courses that are nonthesis and nonproject. The 60 total hours of master's and/or PhD coursework must contain the following:

1. At least 15 hours of courses in the student's chosen major area of specialization. Current available major areas are: (a) algorithms and software systems; (b) communication and signal processing; (c) computer networking; (d) computer systems and architecture; (e) control systems; and (f) energy and power systems.
2. At least 6 hours of courses in the student's chosen minor area of specialization. A minor area may or may not be from any of the above major areas.
3. At least 6 hours of courses in mathematics or statistics.

Courses in each of the above three categories must be distinct. In addition, at least 60 percent of courses taken beyond the master's work (including 24 hours of PhD dissertation) should be at the 800-level or above. PhD students must also pass comprehensive examinations in their major and minor areas, the dissertation approval examination, and the final dissertation examination. Details of these exams are in the beginning of the College of Engineering chapter of the Graduate Catalog.

## Facilities

Modern electrical engineering laboratories contain facilities for experimental work in areas of control systems, computers and digital systems, communications, energy conversion, power electronics, power quality and computer networking.

## Computer Science (CS)

**Courses for Graduate/Undergraduate Credit**

**CS 510. Programming Language Concepts (3).** Theoretical concepts in the design and use of programming languages. Formal syntax, including Backus Normal Form (BNF), Extended Backus-Naur Form (EBNF), and syntax diagrams. Semantics, including declaration, allocation and evaluation, symbol table and runtime environment; data types and type checking, procedure activation and parameter passing, modules and abstract data types. Prerequisites: CS 300, MATH 322.

**CS 540. Operating Systems (3).** Fundamental principles of modern operating systems. CPU management including processes, threads, scheduling, synchronization, resource allocation and deadlocks. Memory management including paging and virtual memory. Storage management and file systems. Prerequisites: CS 238, 300.

**CS 560. Design and Analysis of Algorithms (3).** Design of various algorithms including several sorting algorithms. Analysis of their space and time complexities. Data structures include heaps, hash tables and binary search trees. Prerequisites: CS 300, 322; STAT 460 or IME 254.

**CS 580. Introduction to Software Engineering (3).** Introduction to the processes, methods and tools used in software development and maintenance. Topics include software development life cycle and processes, configuration management, requirements gathering, OOA/D with UML, cohesion and coupling, and unit testing. Prerequisite: CS 411.

**CS 594. Microprocessor-Based System Design (4). 3R; 2L.** Presents knowledge and skills required to design and program microprocessor-based systems. Introduces vendor-supplied special-purpose chips such as interrupt controllers and programmable input/output devices. Laboratory activities give hands-on experience. Prerequisites: CS 238, 394.

**CS 644. Advanced Unix Programming (3).** 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 in structures and pointers. Prerequisite: CS 540.

**CS 655. Information Delivery on the Internet (3).** 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.

**CS 665. Introduction to Database Systems (3).** Fundamental aspects of relational database systems, conceptual database design and entity-relationship modeling; the relational data model and its foundations, relational languages and SQL, functional dependencies and logical database design; views, constraints and triggers. Course includes a group project involving the design and implementation of a relational database and embedded SQL programming. Prerequisites: CS 300, MATH 322.

**CS 697. Selected Topics (1–3). 1–3R; 0–2L.** Selected topics of current interest. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

**CS 715. Compiler Construction (3).** First compiler course for students with a good background in programming languages and sufficient programming experience. Covers compiler design, lexical analysis, parsing techniques, symbol tables, scope analysis, type checking and conversion; run-time organization, code generation and optimization. Project-oriented course involves implementation of a full compiler for a simplified but nontrivial procedural language. Prerequisites: CS 238, 510.

**CS 720. Theoretical Foundations of Computer Science (3).** 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.

**CS 721. Advanced Algorithms and Analysis.** (3). Topics include height-balanced trees, graph algorithms, greedy algorithms, dynamic programming, hard problems and approximation algorithms. Prerequisite: CS 560.

**CS 731. Mathematical Foundations for Computer Networking (3).** Introductory class on applying various mathematical tools to the field of computer networks and related areas. Divided into three phases: phase one covers the fundamentals of probability, statistics and linear algebra required for understanding the core topics to follow. Phase two covers the core topics of optimization and queuing theory. Phase three briefly covers the advanced topics of game theory and information theory. The depth of coverage is sufficient to allow students to read and understand research papers in computer networking and related areas that use these standard techniques. Ideas are taught through intuition, mathematically correct formalization and detailed numerical examples. Prerequisite: MATH 243. Corequisite: CS 464.

**CS 736. Data Communication Networks (3).** Presents a quantitative performance evaluation of telecommunication networks and systems. Includes fundamental digital communications system review; packet communications, queuing theory, OSI, s.25 and SNA layered architectures, stop-and-wait protocol, go-back-N protocol, and high-level data link layer; network layer flow and congestion control, routing, polling and random access, local area networks (LAN); integrated services digital networks (ISDN), and broadband networks. Prerequisites: CS 300, IME 254.

**CS 737. Wireless Networking (3).** Covers topics ranging from physical layer to application layer in the wireless and mobile networking fields. Explores physical layer issues of wireless communications, wireless cellular telephony, ad-hoc networks, mobile IP and multicast, wireless LAN (IEEE 802.11), security, Bluetooth and WAP, etc. Imparts general knowledge about wireless communication technologies and ongoing research activities. Prerequisite: CS 736.

**CS 738. Embedded Systems Programming (3).** Studies the requirements and design of embedded software systems. Application of the C programming language in the implementation of embedded systems emphasizing real-time operating systems, interfacing to assembly and high-level languages, control of external devices, task control and interrupt processing. Prerequisite: CS 594.

**CS 750. Workshop in Computer Science (1–5).** Short-term courses with special focus on introducing computer science concepts. Repeatable for credit. Prerequisite: departmental consent.

**CS 764. Routing and Switching I (4). 3R; 2L.** An introductory course which studies different hardware technologies, like Ethernet and token ring. Discusses VLSM. Introduces different routing protocols. Includes hands-on experience in the CS department's routing and switching lab. Prerequisite: CS 464 or 736.

**CS 766. Information Assurance and Security (3).** Provides basic concepts in information assurance and security including encryption, digital certificates, security in networks, operating systems and databases. Topics in intrusion detection, legal and ethical issues in security administration are also discussed. Prerequisite: CS 464 or 736 or 764.

**CS 767. Foundations of Network Security (3).** Presents fundamental concepts in cryptography and network security, and discusses applications and protocols for providing confidentiality, authentication, integrity, and availability in networking services and systems. Includes review of symmetric-key cryptographic schemes such as DES and AES, public-key cryptographic schemes such as RSA and Diffie-Hellman key exchange protocol, cryptographic hash functions such as SHA, message authentication codes such as HMAX digital signature schemes such as El-Gamal and DSS, kerberos and user authentication protocols, transport layer security and TLS, IP layer security and IPSec, and wireless security principles. Prerequisite: CS 464 or 736. CS 766 is highly preferred, but not required.

**CS 771. Artificial Intelligence (3).** Introduction to some of the fundamental concepts and techniques underlying artificial intelligence. Topics covered include state spaces, heuristic search, game playing, knowledge representation, and resolution in propositional and first-order predicate logic. Prerequisites: CS 300, MATH 322.

**CS 780. Advanced Software Engineering (3).** Discusses advanced topics in software development, maintenance and evolution. Topics include software design patterns, architecture and architectural styles, frameworks, refactorings, and static and dynamic analyses. Includes a group project. Prerequisite: CS 580.

**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. Graded *Cr/NCr*. Prerequisites: departmental consent and graduate GPA of 3.000 or above.

**CS 794. Multicore Architectures and Programming (3). 3R.** Introduces state-of-the-art concepts and techniques to design and program modern computer systems. Particular attention is given to the following areas: multicore architecture, parallel programming and advanced research. Labs give hands-on experience. Prerequisites: CS 211, 394.

**CS 797. Special Topics (1–4).** New or special courses presented on sufficient demand. Repeatable for credit. Prerequisite: departmental consent.

**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*. Prerequisite: departmental consent.

### Courses for Graduate Students Only

**CS 805. Compiler Theory (3).** Theory of compilation of programming languages. Finite state machines and lexical analysis. Context-free languages and recognizers. Theory of parsing, including recursive-descent, top-down, and bottom-up parsers. Formal description of semantics and code generation. Code optimization. Compiler-compilers. Prerequisites: CS 510, 720.

**CS 810. Programming Languages: Advanced Concepts (3).** An advanced study of programming language structures and design. Data and control structures and their abstraction. Concurrent programming structures. Formal specifications of syntax and semantics, including models for establishing program correctness. Criteria for language design. Prerequisites: CS 510, 720.

**CS 834. Advanced Routing and Switching (3).** Advanced course which provides an introduction to the Border Gateway Protocol (BGP), the main Internet routing protocol, and mobile all-IP-networks. Significant research topics regarding BGP and mobile IP networks are covered. Prerequisite: CS 764.

**CS 835. Ad Hoc and Sensor Networks (3).** Teaches the basic techniques, particularly algorithms and protocols used in sensor networks. Exposes students to various sensor network applications and the fundamental issues in designing and analyzing sensor networks. Provides students with a perspective on the active research areas in wireless ad hoc and sensor networks and enhances their potential to do research in this area. Focuses mainly on data intensive sensor networks. Prerequisite: CS 560.

**CS 836. Computer Performance Analysis (3).** Teaches the basic concepts in stochastic modeling of systems for analysis and for simulation. Analytic modeling techniques include discrete- and continuous-time Markov chains, queuing theory, and queuing networks, as well as approximate methods based on these techniques. Operational analysis presents a nonstochastic, measurement-based perspective to the analysis of computer systems. Also emphasizes discrete-event simulation, a widely-used technique in many areas of performance evaluation. Performance metrics taken from stochastic simulations are phantom variables, and are subject to the same types of statistical analysis as data obtained from real systems. Prerequisite: EE 754.

**CS 837. Energy Intelligent Computing and Communications (3). 3R; 1L.** Introduces various mobile computing scenarios, explores fundamental causes of energy wastage and addresses means to be more efficient. Looks at how computing can, in general, be carried out in an energy-intelligent manner and be applied to the broader area of cyber-physical systems. Topics covered include: energy as an issue, its relevance to computing and communications, battery technology and mobile device constraints, computing and its role toward achieving broader goals of environmental sustainability. Application areas targeted include mobile

computing, cloud computing and smart grids. Course involves team-based research projects targeting these application areas. Prerequisite: CS 464 or 560.

**CS 843. Distributed Computing Systems (3).** A study of hardware and software features of online multiple computer systems emphasizing network design and telecommunication. Includes distributed databases, interprocessor communication and centralization versus distribution. Studies the use of microcomputers in representative configurations. Prerequisites: CS 540, 736.

**CS 862. Advanced Database Systems (3).** Covers recent developments and advances in database technology. 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).** 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.

**CS 864. Database Query Processing and Optimization (3).** 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. Prerequisites: CS 560, 665.

**CS 865. Principles of DBMS Implementation (3).** 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, is covered as time permits. Prerequisites: CS 560, 665.

**CS 866. XML Databases (3).** 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.

**CS 868. Database Transaction Management (3).** Topics covered 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*. Prerequisite: departmental consent.

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

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

**CS 898. Special Topics (2–3). 1–3R; 0–2L.** Topics of current interest to advanced students of computer science. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

## Electrical Engineering (EE)

### Courses for Graduate/Undergraduate Credit

**EE 577. Special Topics in Electrical and Computer Engineering (1–4).** New or special courses presented on sufficient demand. Repeatable for credit. Prerequisite: departmental consent.

**EE 586. Introduction to Communication Systems (4). 3R; 2L.** Fundamentals of communication systems; models and analysis of source, modulation, channel and demodulation in both analog and digital form. Reviews Fourier series, Fourier transform, DFT, probability and random variables. Studies in sampling, multiplexing, AM and FM analog systems, and additive shite gaussian noise channel. Additional topics such as PSK and FSK digital communication systems covered as time permits. Prerequisites: EE 383, IME 254.

**EE 588. Advanced Electric Motors (3).** Advanced electric motor applications and theory. Includes single-phase motors, adjustable speed AC drive applications and stepper motors. Prerequisite: EE 488.

**EE 595. Electrical Design Project II (2). 3L.** A continuation of EE 585. Will not count toward a graduate electrical engineering degree. Prerequisite: EE 585.

**EE 598. Electric Power Systems Analysis (3).** Analysis of electric utility power systems. Topics include analysis and modeling of power transmission lines and transformers, power flow analysis and software, and an introduction to symmetrical components. Prerequisite: EE 488.

**EE 610. Introduction to Quantum Computing (3).** Introduction to the theory and practice of quantum computing. Topics covered include the basics of quantum mechanics, Dirac notation, quantum gates and circuits, entanglement, measurement, teleportation and algorithms. Prerequisite: MATH 511.

**EE 684. Introductory Control System Concepts (3).** Cross-listed as ME 659. An introduction to system modeling and simulation, dynamic response, feedback theory, stability criteria, and compensation design. Prerequisites: (1) EE 282 and MATH 555, or (2) EE 383.

**EE 688. Power Electronics (4). 3R; 2L.** Deals with the applications of solid-state electronics for the control and conversion of electric power. Gives an overview of the role of the thyristor in power electronics application and establishes the theory, characteristics and protection of the thyristor. Presents controlled rectification, static frequency conversion by means of the DC link-converter and the cyclo converter, emphasizing frequency, and voltage control and harmonic reduction techniques. Also presents requirements of forced commutation methods as applied to AC-DC control and firing circuit requirement and methods. Introduces applications of power electronics to control AC and DC motors using new methods such as microprocessor. Prerequisites: EE 383, 488, 492.

**EE 691. Integrated Electronics (3).** A study of BJT and MOS analog and digital integrated circuits. Includes BJT, BiMOS and MOS fabrication; application specific semi-custom VLSI arrays, device performance and characteristics; and integrated circuit design and applications. Prerequisites: CS 194, EE 493.

**EE 697. Electric Power Systems Analysis II (3).** Analysis, design, modeling and simulation of high-voltage electric power transmission systems and rotating generators. Simulations include short circuit studies, economic dispatch and transient stability. Prerequisite: EE 598.

**EE 726. Digital Communication Systems I (3).** Presents the theoretical and practical aspects of digital and data communication systems. Includes the modeling and analysis of information sources as discrete processes; basic source and channel coding, multiplexing and framing, spectral and time domain considerations related to ASK, PSK, DPSK, QPSK, FSK, MSK, and other techniques appropriate for communicating digital information in both base-band and band-pass systems; intersymbol interference, effects of noise on system performance, optimum systems and general M-ary digital systems in signal-space. Prerequisites: EE 586 and 754.

**EE 732. Discrete Event Systems I (3).** Covers the fundamental concepts of modeling and analysis of discrete event systems, with an emphasis on understanding computer and communication networks. Course begins with an in-depth introduction to discrete event systems (state space, transitions, and system classification). Subsequent topics include languages and automata (untimed, timed and stochastic timed automata). A unified modeling framework centered on automata is followed towards achieving a better understanding of complex systems. Prerequisites: IME 254, MATH 511.

**EE 754. Probabilistic Methods in Systems (3).** A course in random processes designed to prepare the student for work in communications controls, computer systems information theory and signal processing. Covers basic concepts and useful analytical tools for engineering problems involving discrete and continuous-time random processes. Discusses applications to system analysis and identification, analog and digital signal processing, data compression parameter estimation, and related disciplines. Prerequisites: EE 383, IME 254.

**EE 777. Selected Topics in Electrical Engineering (1–4).** New or special courses presented on sufficient demand. Repeatable for credit. Prerequisite: departmental consent.

**EE 782. Digital Signal Processing (3).** Presents the fundamental concepts and techniques of digital signal processing. Time domain operations and techniques include difference equations and convolution summation. Covers Z-transform methods, frequency-domain analysis of discrete-time signals and systems, discrete Fourier transform, and fast Fourier transform. Emphasizes the frequency response of discrete-time systems and the relationship to analog systems. Prerequisite: EE 383.

**EE 784. Digital Control Systems (3).** Studies the effects of sampling and quantization, discrete systems analysis, sampled-data systems and Z-domain and state space design. Prerequisite: EE 684 or ME 659.

**EE 790. Independent Study in Electrical Engineering (1–3).** Arranged individual, independent study in specialized content areas in electrical engineering under the supervision of a faculty member. Repeatable for credit. Prerequisite: departmental consent.

**EE 792. Linear Systems (3).** Review of mathematics relevant to state-space concepts. Formulation of state-variable models for continuous-time and discrete-time linear systems. Concepts of controllability, observability, stabilizability and detectability. Pole placement and observer design. State transformation techniques and their use in analysis and design of linear control systems. Prerequisite: EE 684 or ME 659.

**EE 796. Electric Power Distribution (3).** Analysis, design, modeling and simulation of radial medium-voltage electric power distribution systems. Simulations include power flow and short circuit. Prerequisite: EE 598.

### Courses for Graduate Students Only

**EE 824. Cooperative Communication Systems (3).** Studies cooperative communication systems in which the users collaborate in their data transmissions. Cooperative transmission is regarded as an efficient, low cost technique to obtain the advantages of multiple antennas. Introduces fundamental cooperative protocols as well as recent advanced topics in relay communication systems. Prerequisites: EE 726, 754 or equivalent

**EE 826. Digital Communication Systems II (3).** Studies modern digital communication systems. Discusses topics such as carrier and symbol synchronization techniques, fading multipath channels, frequency-hopped spread spectrum systems, smart antenna array systems, space time codes (STC), space-time block codes (STBC), multi-input multi-output (MIMO), orthogonal frequency division multiplexing (OFDM) systems, and multi carrier code division multiple access (MC-CDMA) communication. Prerequisite: EE 726.

**EE 833. Stochastic Discrete Event Systems (3).** Covers the fundamental concepts in modeling and analysis of stochastic discrete event systems, with an emphasis on understanding computer and communication networks. Course begins with an in-depth introduction to stochastic timed automata, and their modeling and analysis techniques. Subsequent topics include Markov chains, queuing theory, controlled Markov chains, and discrete event simulation. A unified modeling framework centered on stochastic modeling is followed toward achieving a better understanding of complex systems. Prerequisite: EE 732 or departmental consent.

**EE 836. 5G Wireless Communications (3).** Covers the fundamental and advanced technologies for future fifth generation (5G) wireless communication systems. Studies the emerging wireless communication technologies such as small cells, coordinated multipoint (CoMP), massive multiple-input multiple-output (Massive-MIMO), millimeter wave (mmWave), device-to-device (D2D), etc. Combinations of these technologies may support future explosive higher data rates, lower latency, and larger coverage area. Prerequisite: EE 726.

**EE 856. Information Theory (3).** Introduction to information theory for students of communication theory, computer science, and statistics. Introduces the definitions of entropy, relative entropy, and mutual information. Discusses asymptotic equipartition property, entropy rates of a stochastic process, channel capacity, differential entropy and gaussian channel. Prerequisite: EE 754.

**EE 864. Multi-Service Over IP (4). 3R; 2L.** Advanced networking course; deals with challenges and solutions associated with sending voice, video and data (multi-service) over IP. Includes telephony signaling, call routing and dial plans, measuring voice quality, voice digitization and coding, quality of service issues, and current research. Hands-on lab allows students to design, troubleshoot and test different VOIP scenarios. Prerequisite: CS 764.

**EE 876. MS Thesis (1–6).** Repeatable for credit toward the MS thesis option up to 6 hours. Graded *S/U*. Prerequisite: prior consent of MS thesis advisor.

**EE 877. Special Topics in Electrical Engineering (3).** New or special courses are presented under this listing on sufficient demand. Repeatable for credit. Prerequisite: departmental consent.

**EE 878. MS Directed Project (1–3).** A project conducted under the supervision of an academic advisor for the directed project option. Requires a written report and an oral presentation on the project. Graded *S/U*. Prerequisite: consent of academic advisor.

**EE 885. Robust Control Systems (3).** When applying control theory to real systems, engineers are faced with uncertainties in plant models, plant disturbances, and sensor noise. Robust control theory is an optimal approach for applying feedback control theory to systems with these uncertainties. Students completing this course should be capable of analyzing a linear control system in terms of performance and robustness, designing controllers and estimators using H-infinity optimization, and reducing plant model and/or controller implementation orders. Prerequisites: EE 792; EE 684 or ME 659.

**EE 886. Error Control Coding (3).** Introduces error control codes, including Galois fields, linear block codes, cyclic codes, Hadamard codes, Golay codes, BCH codes, Reed-Solomon codes, convolutional codes, Viterbi decoding algorithm, Turbo codes, and ARQ protocols. Applies to digital 3G and 4G cellular and satellite communication systems. Prerequisite: EE 726.

**EE 893. Optimal Control (3).** Reviews mathematics relevant to optimization, including calculus of variations, dynamic programming, and other norm-based techniques. Formulates various performance measures to define optimality and robustness of control systems. Studies design methods for various classes of systems, including continuous-time, discrete-time, linear, nonlinear, deterministic and stochastic systems. Prerequisite: EE 792.

**EE 897. Operation and Control of Power Systems (3).** Acquaints electric power engineering students with power generation systems, their operation in economic mode, and their control. Introduces mathematical optimization methods and applies them to practical operating problems. Introduces methods used in modern control systems for power generation systems. Prerequisite: EE 598.

**EE 898. Electric Power Quality (3).** Measurement, analysis, modeling, simulation and mitigation of electric power quality on medium- and low-voltage distribution systems. Prerequisite: EE 697.

**EE 976. PhD Dissertation (1–16).** Repeatable for credit. Graded *S/U*. Prerequisite: admission to doctoral aspirant status.

**EE 981. Cooperative Education (1).** A work-related placement with a supervised professional experience to complement and enhance the academic program. Intended for master's-level or doctoral students in electrical engineering. Repeatable for up to 8 hours. May not be used to satisfy degree requirements. Graded *S/U*. Prerequisites: departmental consent and a graduate GPA of at least 3.000.

**EE 986. Wireless Spread-Spectrum Communication (3).** Explains what spread-spectrum communication is and why direct-sequence code-division multiple access (DS-CDMA) spread-spectrum is used for wireless communication. Studies the block diagrams of the IS-95 forward and reverse wireless communication links under multi-path mobile fading environment using analysis techniques and simulation. Analyzes pseudo-noise (PN) signal generation, the band-limited waveform shaping filter, convolutional coding, interleaver, Walsh code orthogonal modulation, Rake finger receivers, noncoherent Walsh orthogonal sub-optimal demodulation, other simultaneously supportable subscribers, and third generation CDMA. Prerequisite: EE 726.

**EE 990. Advanced Independent Study (1–3).** Arranged individual, independent study in specialized content areas in engineering under the supervision of a faculty advisor. Repeatable toward the PhD degree. Prerequisites: advanced standing and departmental consent.

# Industrial and Manufacturing Engineering (IME)

**Graduate Faculty**

*Professors*: Krishna K. Krishnan (chairperson), Viswanathan Madhavan, Don Malzahn (undergraduate coordinator), Abu Masud, Gamal Weheba, Mehmet Bayram Yildirim (graduate coordinator)

*Associate Professors:* Michael Jorgensen, Pingfeng Wang

*Assistant Professors:* Esra Buyuktahtakin, Laila Cure, Wilfredo Moscoso, Ehsan Salari

The Department of Industrial and Manufacturing Engineering (IME) at WSU is committed to instruction and research in design, analysis, and operation of manufacturing and other integrated systems of people, material, equipment and capital. The IME department prepares students to be life-long learners and global citizens with successful careers in design, research, improvement, and management of systems in manufacturing and service organizations. The graduate programs are directed toward both full-time and part-time students with a special emphasis on providing training and experience in performing independent research on topics with theoretical as well as applied interest. Students are encouraged to conduct research or take courses on topics that overlap several disciplines.

The IME department offers three graduate degree programs and four certificate programs The IME department offers Master of Engineering Management (MEM), Master of Science, and Doctor of Philosophy degree programs in industrial engineering (MSIE and PhDIE, respectively). The concentrations in the IME graduate programs are operations research, systems, production and supply chain analytics, quality and reliability, manufacturing engineering and human systems engineering.

The IME department has certificate programs in systems engineering and management, lean systems, foundations of six sigma and quality improvement, and enterprise systems and supply chain management (offered jointly with the W. Frank Barton School of Business).

## Facilities

The following facilities used in teaching and research are available for graduate students:

***Cessna Manufacturing Laboratory*** supports all courses offered in the areas of manufacturing engineering, tool design, advanced and nontraditional machining, composite machining, and computer-aided manufacturing. The lab is also used by other departments, mainly the

ME department, for its educational and research needs. The Mini Baja team makes extensive use of this lab which also supports multi-disciplinary courses and senior design projects.

***Reliability and Maintenance Engineering Laboratory*** provides students with hands-on experiences in modeling accelerated life testing and degradation testing, optimal design of testing plans, robust reliability design, system reliability optimization, condition-based maintenance and engineering risk assessment. To carry out these teaching-related activities, the lab hosts accelerated life/degradation testing equipment and several test beds for CBM.

***Human Performance and Design Laboratory*** supports teaching and research in fields related to industrial ergonomics.

***CAD/Systems Laboratory*** teaching lab supports a number of courses including engineering graphics, systems simulation and neural networks. The lab is also used on a regular basis by the ME and other departments to support a number of courses.

***Advanced Manufacturing Process Lab*** focuses on research in machining, sheet metal forming, and supports manufacturing engineering courses.

***Laboratory for Sustainable Engineered Systems*** promotes the advancement of knowledge, understanding, and education of environmentally sustainable engineered systems in health care and the environment, life cycle analysis, green manufacturing and production systems. The lab conducts research in energy efficiency, health care and the environment, life cycle analysis, green manufacturing and sustainability.

***Health Systems Engineering Laboratory*** provides resources and expertise for the design, analysis, and improvement of health care systems, and supports teaching and research in health care analytics, operations, quality and risk management, and medical decision making.

## Curriculum and Research Concentrations

The teaching and research concentrations in IME are clustered around the following six areas.

***Operations Research:*** modeling and analysis of complex systems in manufacturing and service systems, optimization theory and methods, multi-criteria decision making, stochastic systems.

***Systems:*** management of engineering enterprises, design and analysis of complex systems, decision analysis, application of intelligent systems and simulation in manufacturing, and activity–based costing.

***Production and Supply Chain Analytics:*** design and control of manufacturing systems, facilities planning, supply chain management, scheduling, analytics applications.

***Quality and Reliability:*** design of experiments, Total quality management, quality control, prognostics, risk management, data driven analysis, big data.

***Manufacturing Engineering:*** manufacturing processes, CAD/CAM/CIM systems, measurement/inspection, GD&T, forming, composites manufacturing, and free form surfaces manufacturing.

***Human Systems Engineering:*** emphases include industrial ergonomics, biomechanics, human-machine systems, occupational safety and other industrial hygiene issues, and ergonomics and human factors issues in aviation/space systems.

## Master of Science in Industrial Engineering

The Master of Science in industrial engineering (MSIE) degree enhances the skills of degreed engineers by providing advanced knowledge and skills that are needed to design, model, analyze and manage modern complex systems in order to increase the effectiveness of manufacturing and service sector organizations. Students have opportunities to enhance their knowledge on technical skills such as optimization, production planning, quality, supply chain management, simulation, analytics, reliability, ergonomics, systems engineering, manufacturing engineering, biomedical engineering, and also on nontechnical skills required for success in their careers. Recent graduates have obtained positions in manufacturing, services and consulting companies.

### Admission Requirements

In order to be admitted in the MSIE program, applicants must:

1. Possess an undergraduate degree in engineering, science, business or other related discipline;
2. Have satisfactorily completed: MATH 243, Calculus II; and IME 255, Engineering Economy;
3. Have a minimum GPA of 3.000, on a 4.000 scale, in the last 60 hours of undergraduate courses and in all graduate coursework. (Students with a lower GPA may be considered only for probationary or nondegree admission.

*In addition,*

4. Applicants whose native language is not English must submit official, acceptable scores for either the TOEFL, or the Academic Module of the IELTS examination. Please visit the Graduate School website (wichita.edu/gradschool) to check English proficiency requirements; and
5. Department prefers and strongly encourages the submission of GRE scores.

### Degree Requirements

Please note that:

- Some of the IME courses may require programming skills as a prerequisite.
- Some of the IME courses may require Linear Algebra or Calculus III as a prerequisite.

1. A student must select a concentration. The concentrations in the IME graduate program are:
   - Operations Research
   - Systems
   - Production and Supply Chain Analytics
   - Quality and Reliability
   - Manufacturing Engineering
   - Human Systems Engineering
2. Course distribution:
   a. Core courses (4 hours): IME 724, Statistical Methods for Engineers; IME 777, IME Colloquium (one semester of 0 credit); CESP 750D, Engineering Research Writing.
   b. Minimum 15 hours distributed as follows: Students should choose one concentration area and take at least 9 hours from this concentration area. In addition, students must take at least 3 hours from each of two other concentrations. For a list of current courses in each concentration, please visit the IME website: wichita.edu/ime;
   c. Technical electives: no more than 6 hours from other departments;
3. Students must select one of the following options for completion of MSIE degree: All Coursework, Directed Project, or Thesis
4. A plan of study should be submitted during the first semester of enrollment and at least 60 percent of hours in a plan of study must be 700 or higher level WSU courses;
5. The professional and scholarly integrity training requirement must be completed, preferably during the first semester of the program.

***Options:***

- *Thesis Option (30 hours)*—a minimum of 24 hours of coursework, and a minimum of 6 hours of thesis.
- *Directed Project Option (33 hours)*—a minimum of 30 hours of coursework, and 3 hours of directed project.
- *All Coursework Option (33 hours)*—a minimum of 33 hours of coursework, and completion of a terminal activity.

***Details of the 33 credit hour all coursework MSIE option***:

Terminal activity for the all coursework option can be satisfied by either:

1. Completing IME 874, Graduate Seminar (1 hr.). The seminar consists of doing a mini-project such as literature review with a minimum of five single-spaced pages and must be performed in consultation with the faculty advisor. The scope of the seminar is determined in collaboration with the faculty advisor. The oral presentation for the seminar shall be done in front of two members of the IME faculty and the faculty advisor;

***or***

2. Receiving any of the following external certificates:
   - Any of the following ASQ certifications:
     - Certified Quality Engineer-CQE
     - Reliability Engineer-CRE
     - Six Sigma Black Belt-CCSSBB

- Six Sigma Green Belt-CSSGB
- Software Quality Engineer-CSQE

• Any of the following modules or certifications from APICS:
- One module from the Certified Production and Inventory Management
  - Basics of Supply Chain Management
  - Master Planning of Resources
  - Detailed Scheduling and Planning
  - Execution and Control of Operations
  - Strategic Management of Resources
- Certified Supply Chain Professional

• Any of the SME certifications:
- Certified Manufacturing Engineering (CMfgE) Certification
- Lean Certification
- Six Sigma Certification

Students need approval of the graduate coordinator for any other professional certifications not listed above. Note that certification resulting from completing any training module/online class does not qualify as an external certification.

## Master of Engineering Management

The Master in Engineering Management (MEM) program educates engineering, science and business graduates in the skills and knowledge to increase the effectiveness of manufacturing and service sector organizations in planning, decision making, and complex problem solving to increase the effectiveness of manufacturing and service sector organizations. Students should consider the MEM program if they find that they need to use (or develop) skills in decision making and management of teams, projects and organizations. The MEM program is structured for practicing technical professionals. Engineering management is for professionals who are interested in becoming managers while remaining engineers.

### Admission Requirements

To be admitted to the MEM program, applicants must:

1. Possess an undergraduate degree in engineering, science, business or other related discipline;
2. Have satisfactorily completed: MATH 243, Calculus II; and IME 255, Engineering Economy;
3. Have a minimum GPA of 3.000, on a 4.000 scale, in the last 60 hours of undergraduate courses and in all graduate coursework. (Students with a lower GPA may be considered only for probationary or nondegree admission.

*In addition,*

4. Applicants whose native language is not English must submit official, acceptable scores for either the TOEFL, or the Academic Module of the IELTS examination. Please visit the graduate school website (wichita.edu/gradschool) to check English proficiency requirements; and
5. Department prefers and strongly encourages the submission of GRE scores.

### Degree Requirements

Please note that:

• Some of the IME courses may require programming skills as a prerequisite.

• Some of the IME courses may require Linear Algebra or Calculus III as a prerequisite.

1. Course distribution (at least 36 hours)
   a. Core courses (25 hours):
      MBA 800, Fundamentals of Finance and Financial Analysis
      MBA 801, Basics: Management and Marketing
      ECON 800, Analysis of Economic Theory
      IME 724, Statistical Methods for Engineers
      IME 777, IME Colloquium (one semester of 0 credit)
      CESP 750D, Engineering Research Writing
      One course from each of the following IME concentrations:
      - Operations Research
      - Systems
      - Production and Supply Chain Analytics
      - Quality and Reliability

      For a list of current courses in each concentration, please visit the IME website: wichita.edu/ime.

   b. At least 11 hours of electives.
2. A plan of study should be submitted during the first semester of enrollment and at least 60 percent of hours in a plan of study must be 700 or higher level WSU courses;
3. The professional and scholarly integrity training requirement must be completed, preferably during the first semester of the program.

### MBA to MEM Program

Graduates of the WSU Master of Business Administration (MBA) program may be allowed to use up to 12 credit hours from the WSU MBA courses as technical electives if they enroll in the MEM program.

### MEM to MBA Program

Graduates of the WSU MEM program may be allowed to use up to 12 credit hours from the technical electives taken from the WSU MBA courses if they enroll in the MBA program.

## Doctor of Philosophy

The PhD in Industrial Engineering (PhDIE) program trains engineers to perform independent research and educates in advanced knowledge in the concentrations offered by the IME program. Recent graduates have obtained positions in academic institutions, manufacturing, services, and consulting companies.

### Admission Requirements

Following are the *minimum* requirements for admission to the PhD in Industrial Engineering program.

1. Applicants whose native language is not English must submit official, acceptable scores for either the TOEFL, or the Academic Module of the IELTS examination. Please visit the Graduate School website, wichita.edu/gradschool, to check English proficiency requirements;
2. Submission of official GRE scores is required;
3. Cumulative GPA in graduate coursework. On a 4.000 scale, must have at least 3.250 in all graduate work.
4. Evidence of the ability to carry out independent research and present it in written English is highly desirable;
5. Submission of two letters of recommendation and a statement of purpose indicating applicant's research interests;
6. Prerequisites:
   a. Completion of the following or equivalent courses:
      - IME 255, Engineering Economy
      - MATH 344, Calculus III (students deficient in this are considered for admission only in nondegree status);
      - A natural science course equivalent to that of the undergraduate engineering requirement.

   b. Programming competence in at least one of the following languages: C, C++, or Visual BASIC and;

   c. Possession of (or nearing the completion of) a master's degree in engineering, physical science, or other related disciplines.

### PhD Degree Requirements

***1. Course Distribution.*** Total credit hours = minimum of 84 hours.

Graduate coursework: at least 60 credit hours; 60 percent of the PHD courses beyond the master's degree (including dissertation) must be at the 800 or higher level, and 60 percent of all graduate courses (including dissertation) must be at the 700 or higher level.

Dissertation: at least 24 credit hours.

Required courses: PhD in IE program requires IME 724, Statistical Methods for Engineers; IME 777, IME Colloquium (three semesters of 0 credit); and CESP 750D, Engineering Research Writing

Major: at least 21 hours from a list of approved courses;

Minor: at least 9 hours from a declared minor (usually one of the concentrations in industrial engineering, computer science, psychology, or other engineering disciplines). The concentrations in the IME graduate program are:

- Operations research
- Systems
- Production and supply chain analytics
- Quality and reliability
- Manufacturing engineering
- Human systems engineering

Mathematics/statistics: at least 6 hours in calculus-based mathematics and/or statistics from a list of approved courses;

Technical electives: as many hours as necessary to satisfy the total hour requirements.

*Note*: minor and MATH/STAT hours must add to at least 18 hours.

***2. Advisor, advisory committee and plan of study.*** Before completing 12 PhD hours at WSU, a student must select an advisor and an advisory committee. With the help of the advisor, the student must prepare a plan of study that needs to be approved by the advisory committee, graduate coordinator and Graduate School before the preliminary and comprehensive exam is attempted. For details of the preliminary examination, please refer to the IME website.

***3. Preliminary examination.*** Before completing 18 PhD hours at WSU, a student must pass the preliminary examination administered by the department in, at most, two attempts. Students who cannot pass the preliminary exam in 1.5 years will be dismissed from the PhD program.

***4. Comprehensive examinations.*** Must pass the comprehensive examinations covering the major and minor areas. A student may attempt these exams no more than twice in each area. A student can enroll in dissertation hours only after passing the comprehensive exams.

***5. Dissertation approval examination.*** Prepare a dissertation research proposal and pass an oral examination of the proposal. A student cannot attempt the examination more than twice. A student must be continuously enrolled in IME 976 after the dissertation approval examination.

***6. Dissertation defense.*** Must pass an oral examination of the dissertation.

***7. Time limits and residency requirement.*** From the time the student is admitted to the program, no more than six years may elapse until requirements for the degree have been completed.

***8. Transfer of credit from another university.*** (Check the transfer rules in the Graduate Catalog.) Up to 12 hours may be transferred from another accredited graduate school.

***9. Professional and scholarly integrity training requirement.*** Must complete professional and scholarly integrity training requirement, preferably during the first semester of the program.

## Certificate Programs

The IME department offers graduate certificate programs in the topical areas described below. Students seeking any of these certificates must be admitted to the Graduate School (1) in one of the degree programs offered by the department, or (2) in nondegree, Category A status. All Graduate School policies relative to admissions apply. International students will not be issued an I-20 for pursuing a certificate program only. They may obtain a certificate only while concurrently pursuing a graduate degree.

Students pursuing a graduate certificate must notify the program coordinator (in a written memo) that they wish to complete the certificate. This notification must occur before half of the required hours are completed. Via the submitted plan of study, requests to complete the certificate are reviewed by the program faculty and the dean of the Graduate School.

Students may apply certificate coursework toward a degree program. A cumulative graduate grade point average of at least 3.000 must be maintained for all courses comprising the certificate program with no grades below *C*.

#### *Enterprise Systems and Supply Chain Management*

This certificate is aimed at equipping students with a knowledge of key enterprise-level information technology systems and supply chain practices used by companies around the world. The courses are structured to provide extensive conceptual and applied information about enterprise-level systems and supply chain management. The curriculum is jointly offered by the decision sciences and MIS faculty in the School of Business and the industrial engineering faculty in the College of Engineering. This program requires satisfactory completion of four courses from the following list of courses, at least one course from both engineering and business is required:

*Business Courses*

| | |
|---|---|
| MIS 750 | Business Intelligence and Analytics |
| MIS 874 | Management Information Systems |
| DS 755 | Project Management |
| DS 850 | Operations Management |

*Engineering Courses*

| | |
|---|---|
| IME 764 | Systems Engineering & Analysis |
| IME 767 | Lean Manufacturing |
| IME 783 | Supply Chain Management |
| IME 825 | Enterprise Engineering |
| IME 883 | Supply Chain Engineering |

#### *Foundations of Six Sigma and Quality Improvement*

This certificate program is primarily intended for individuals with industrial affiliation who may be interested in enhancing their skills in quality engineering and six sigma methodology. The program includes most of the Certified Six Sigma Black Belt (CSSBB) requirements outlined by the American Society for Quality (ASQ). Includes detailed coverage of applied statistical and managerial techniques most useful for process improvement, resource management and design optimization. Program prerequisite: MATH 243, Calculus II. This program requires satisfactory completion of four courses (a total of 12 credit hours) from among the following:

| | |
|---|---|
| IME 554 | Statistical Quality Control |
| IME 724 | Statistical Methods for Engineers |
| IME 755 | Design of Experiments |
| IME 767 | Lean Manufacturing |
| IME 854 | Quality Engineering |
| IME 890 | Independent Study in Ind. Engr. |
| IME 990 | Adv. Independent Study (on quality related topics) |

#### *Lean Systems*

This program provides advanced knowledge and methodology of lean systems design, evaluation and operation for practitioners in industry who are responsible for the development and management of production systems in the workplace. Curriculum focuses on the essential knowledge, analytical techniques, guidelines and contemporary issues in the design, evaluation and management of lean systems in industry. Program prerequisite: IME 550, Operations Research. This program requires satisfactory completion of four courses (i.e., a total of 12 credit hours) from among the following:

| | |
|---|---|
| IME 553 | Production Systems |
| IME 724 | Statistical Methods for Engineers |
| IME 755 | Design of Experiments |
| IME 767 | Lean Manufacturing |
| IME 783 | Supply Chain Management |
| IME 890/990 | Advanced Independent Study (on Lean related topics) |

#### *Systems Engineering and Management*

Students completing this program will be able to apply systems concepts and techniques to the understanding, description, design and management of large-scale systems requiring the integration of information and human activity.

The curriculum focuses on the essential knowledge, analytical techniques, and contemporary issues in complex systems definition, design and decision making. Program prerequisites: MATH 243, Calculus II. This program requires satisfactory completion of four courses (i.e., a total of 12 credit hours) from among the following:

| | |
|---|---|
| IME 664 | Engineering Management |
| IME 724 | Statistical Methods for Engineers |
| IME 740 | Analysis of Decision Processes |
| IME 764 | Sys. Engineering & Analysis |
| IME 767 | Lean Manufacturing |
| IME 865 | Modeling & Analysis of Discrete Sys. |

Please note that for all graduate programs in IME, some IME courses may require programming skills as a prerequisite, and some IME courses may require Linear Algebra or Calculus III as a prerequisite.

## Industrial and Manufacturing Engineering (IME)

**Courses for Graduate/Undergraduate Credit**

**IME 524. Engineering Probability and Statistics II (3).** A study of hypothesis testing, regression analysis, analysis of variance, correlation analysis and design of experiments emphasizing applications to engineering. Prerequisite: IME 254.

**IME 549. Industrial Ergonomics (3).** A systematic approach to the optimization of the human-task-environment system. Includes work space design, manual materials handling, work related musculoskeletal disorders and environmental factors. Emphasizes applications in industry. Prerequisite: IME 254 or departmental consent.

**IME 550. Operations Research (3).** Models and methods in operations research. Linear and quadratic programming. Network models and algorithms. Integer, dynamic and nonlinear programming. Unconstrained and constrained optimization. Prerequisite: MATH 511. Corequisite: IME 254.

**IME 553. Production Systems (3).** Quantitative techniques used in the analysis and control of production systems. Includes forecasting, inventory models, operation planning and scheduling. Prerequisite: IME 254. Corequisite: IME 255.

**IME 554. Statistical Quality Control (3).** A study of the measurement and control of product quality using statistical methods. Includes acceptance sampling, statistical process control and total quality management. Corequisite: IME 524.

**IME 556. Information Systems (3).** Provides a basic understanding of information systems in a modern enterprise, including database design, information technology and ethics using hands-on activities and directed classroom discussion. Prerequisite: CS 211 or MIS 310.

**IME 557. Safety Engineering (3).** Environmental aspects of accident prevention, industrial compensation and safety legislation. Fundamental concepts of occupational health and hygiene. Prerequisite: IME 254.

**IME 558. Manufacturing Methods and Materials II (4). 3R; 2L.** Covers theoretical and practical aspects of manufacturing processes, including material properties and behavior as influenced by the manufacturing process. In-depth study of such manufacturing processes as casting heat treatment, bulk forming, sheet metal forming, metal cutting, nontraditional machining and process monitoring through measurement of manufacturing process variables. Also includes laboratory experience and plant tours. Prerequisites: IME 258, ME 250.

**IME 563. Facilities Planning and Design (3).** Quantitative and qualitative approaches to problems in facilities planning and design, emphasizing activity relationships, space requirements, materials handling and storage, and plant layout. Quantitative and qualitative approaches to selection of material handling devices and design of storage systems, and introduction to concepts of supply chain. Prerequisites: IME 452, 550, 553.

**IME 565. Systems Simulation (3).** The design of simulation models and techniques for use in designing and evaluating discrete systems, including manufacturing systems too complex to be solved analytically. Emphasizes general purpose computer simulation languages. Prerequisite: computer programming competency. Corequisites: IME 553, 524.

**IME 576. Composites Manufacturing (3). 2R, 2L.** Introduction to composite materials, the various manufacturing methods used in the aerospace industry and prevalent quality assurance methods. Students are introduced to inspection, damage control and repair techniques as well as material handling, safety and environmental requirements. Course contains laboratory modules designed to provide hands-on experience to emphasize the practical aspects of the topics covered. Prerequisite: AE 333 or instructor's consent.

**IME 590. Industrial Engineering Design I (3).** An industry-based team design project using industrial engineering and manufacturing engineering principles; performed under faculty supervision. May not be counted toward graduate credit. Prerequisites: IME 553; must be within two semesters of graduation or departmental consent.

**IME 658. Forming Processes (3).** Introduction to the fundamentals of deformation and techniques for analysis of forming processes. Application to various bulk forming and sheet metal forming processes. Introduction to applied nonlinear finite element analysis and its application for analysis and design of forming processes. Prerequisite: AE 333.

**IME 664. Engineering Management (3).** Introduction to the design and control of technologically based projects. Considers both the theoretical and practical aspects of systems models, organizational development, project planning and control, resource allocation, team development and personal skill assessment. Prerequisites: IME 254, 255.

**IME 676. Aircraft Manufacturing and Assembly (3).** Covers key aspects of assembly design for aircraft structures. First module covers design of jigs and fixtures to locate parts and machine features to tolerance, and the effect of part and tool stiffness on the tolerances. Second module covers gage design and gage studies, and geometric dimensioning and tolerancing. Third module covers assembly planning and best practices for aircraft assembly. Laboratory experiments and case studies are used to understand issues related to aircraft assembly. Prerequisite: IME 258.

**IME 690. Industrial Engineering Design II (3).** Continuation of the design project initiated in IME 590 or the performance of a second industrial engineering design project; an industry-based team design project using industrial and manufacturing engineering principles; performed under faculty supervision. May not be counted toward graduate credit. Prerequisites: IME 590 and departmental consent.

**IME 724. Statistical Methods for Engineers (3).** For graduate students majoring in engineering. Students study and model real-life engineering problems and draw reliable conclusions through applications of probability theory and statistical techniques. Not available for undergraduate credit. Prerequisite: MATH 243.

**IME 731. Foundations of Optimization (3).** An extensive treatment of the theories and concepts of linear, nonlinear, constrained and unconstrained optimization techniques. Prerequisite: IME 550.

**IME 740. Analysis of Decision Processes (3).** Decision analysis as it applies to capital equipment selection and replacement, process design and policy development. Explicit consideration of risk, uncertainty and multiple attributes is developed and applied using modern computer-aided analysis techniques. Prerequisites: IME 254, 255.

**IME 749. Ergonomic Assessment Methods (3).** Covers current and commonly used risk and exposure assessment methods used for musculoskeletal disorders in the workplace. Students develop an understanding and working knowledge of how to evaluate and control the risk of work-related musculoskeletal disorders in the design of workplaces. Critical assessments and discussions of risk and exposure assessment techniques are performed relative to the strengths and weaknesses of each technique as well as the evidence for risk control and validity of the various methods. Prerequisite: IME 549 or instructor's consent.

**IME 753. Advanced Linear Programming (3).** Linear and integer programming formulations, simplex method, geometry of the simplex method, sensitivity and duality, interior point methods. Prerequisite: IME 550 or instructor's consent.

**IME 754. Reliability and Maintainability Engineering (3).** Studies problems of quantifying, assessing and verifying reliability. Presents various factors that determine the capabilities of components emphasizing practical applications. Examples and problems cover a broad range of engineering fields. Prerequisite: IME 524 or 724.

**IME 755. Design of Experiments (3).** Application of analysis of variance and experimental design for engineering studies. Includes general design methodology, single-factor designs, randomized blocks, factorial designs, fractional replication and confounding. Prerequisite: IME 524 or 724.

**IME 758. Analysis of Manufacturing Processes (3).** Introduces students to plasticity and builds upon their knowledge of mechanics and heat transfer in order to analyze various manufacturing processes. Numerical techniques (mainly finite element analysis) as well as theoretical methods are introduced and applied to analysis of processes such as open and closed die forging, superplastic forming, machining, grinding, laser welding, etc. The effect of friction, material properties and process parameters on the mechanics of the processes and process outputs is the main focus of study. Prerequisite: AE 333.

**IME 759. Ergonomic Interventions (3).** Provides an understanding and working knowledge of how to evaluate and control the risk of musculoskeletal disorders in the design of workplaces and processes. Scientific aspects of intervention design and effectiveness assessment are discussed, including an assessment of the strengths and weaknesses of the intervention research literature. Prerequisite: IME 549 or instructor's consent.

**IME 760. Ergonomics Topics (3).** New or special courses on topics in ergonomics and human factors engineering. May be repeated for different topics. Prerequisite: departmental consent.

**IME 764. Systems Engineering and Analysis (3).** Presentation of system design process from the identification of a need through conceptual design, preliminary design, detail design and development, and system test and evaluation. Studies operational feasibility, reliability, maintainability, supportability and economic feasibility. Prerequisites: IME 254, 255.

**IME 767. Lean Manufacturing (3).** Introduces lean concepts as applied to the manufacturing environment. Deals with the concepts of value, value stream, flow, pull and perfection. Includes waste identification, value stream mapping, visual controls and lean metrics. Prerequisite: IME 553.

**IME 768. Metal Machining: Theory and Applications (3).** Provides basic understanding of the various conventional metal machining processes and the nature of various phenomena that occur in it. Includes fundamental treatments of the mechanics of chip formation under orthogonal and oblique conditions, temperatures in machining, tool materials, tool wear, surface roughness, numerical and mechanistic modeling methods, and discusses current research trends and possible future developments. Prerequisite: AE 333 or ME 250.

**IME 775. Computer Integrated Manufacturing (3).** A study of the concepts, components and technologies of CIM systems; enterprise modeling for CIM, local area networks, CAD/CAM interfaces, information flow for CIM, shop floor control and justification of CIM systems. Prerequisites: knowledge of a programming language, IME 558.

**IME 777. IME Colloquium (0).** Presentations and discussions of industrial engineering problems, research methods, and case analyses for graduate students. Repeatable.

**IME 778. Machining of Composites (3).** Introduction to a wide range of machining processes used in the secondary manufacturing of composites, focusing on scientific and engineering developments affecting the present and future of composites manufacturing. Major traditional and nontraditional machining processes are

discussed. The effect of process parameters, material parameters and system parameters on the material removal rate and the quality of the machined part are also discussed. Emphasis given to the application of nontraditional machining processes in the manufacture of fiber-reinforced polymers used in the aerospace and aviation industries. Students learn the advantages and disadvantages of each machining process and how to select the most appropriate process for different materials and geometries. Prerequisite: AE 333 or instructor's consent.

**IME 780. Topics in Industrial Engineering (3).** New or special courses are presented under this listing. Repeatable for credit when subject matter warrants.

**IME 781. Cooperative Education (1–8).** A work-related placement with a supervised professional experience to complement and enhance the student's academic program. Intended for master's level or doctoral students in IME. Repeatable for credit. May not be used to satisfy degree requirements. Graded *Cr/NCr*. Prerequisites: departmental consent, graduate GPA of 3.000 or above.

**IME 783. Supply Chain Management (3).** Quantitative and qualitative techniques used in the design and management of the supply chain. Includes distribution management, multi-plant coordination, optimal design of the logistics network, adequate safety stock levels and the risk pooling concept, and integrating decision support systems (DSS) in the management of the supply chain. Prerequisite: IME 553.

### Courses for Graduate Students Only

**IME 825. Enterprise Engineering (3).** How to design and improve all elements associated with the total enterprise through the use of engineering and analysis methods and tools to more effectively achieve its goals and objectives. Deals with the analysis, design, implementation and operation of all elements associated with an enterprise. Includes business process re-engineering, graphical enterprise modeling tools and architectures, and enterprise transformation. Prerequisite: IME 553.

**IME 835. Applied Forecasting Methods (3).** A study of forecasting methods, including smoothing techniques, time series analysis, and Box-Jenkins models. Prerequisite: IME 724 or instructor's consent.

**IME 850. Discrete Optimization (3).** Modeling with integer variables, various applications of discrete optimization in industry, service and science, enumeration and cutting plane methods, branch and bound methods, decomposition algorithms, computational and software issues (AMPL and CPLEX), and dynamic programming. Prerequisite: IME 550 or instructor's consent.

**IME 851. Stochastic Modeling and Analysis (3).** Discusses stochastic processes and their application to modeling and analysis of systems that involve uncertainty in engineering and management sciences. Topics include review of probability concepts and random variables, discrete-time Markov chains, Poisson processes, continuous-time Markov processes, renewal theory, and basic queueing models. Prerequisite: IME 550 or instructor's consent.

**IME 854. Quality Engineering (3).** A broad view of quality tools and their integration into a comprehensive quality management and improvement system. Covers the theory and approaches of the major quality leaders such as Deming, Juran and Crosby. Explores off-line and online quality engineering techniques, including cost of quality, the seven *old* and seven *new* tools, Quality Function Deployment, and statistical process control methods. Explores design of engineering experiments, including Taguchi's methods. Prerequisite: IME 554 or instructor's consent.

**IME 858. Nonlinear Finite Element Analysis of Metal Forming (3).** Introduces the use of an LS-DYNA software package for metal forming simulations and discusses the theoretical foundation necessary to understand the physics and mechanics behind some of the options that need to be used to ensure solution accuracy in FEA of metal forming. Prerequisite: AE 722 or ME 650K or IME 780K.

**IME 864. Risk Analysis (3).** Provides a set of methods that have been widely used to evaluate and void the risk of technological systems and devices in engineering applications. The methods introduced are multidisciplinary in terms of the scope of the methodology and the concepts that are being applied in many industries. Students are expected to have an engineering background and the capability of using statistics and operations research tools. Prerequisite: IME 724 or 754 or instructor's consent.

**IME 865. Modeling and Analysis of Discrete Systems (3).** Covers analytical and experimental techniques for the modeling and analysis of discrete systems with a focus on discrete event simulation of terminating and nonterminating systems. Course material includes some discussion of Markov Chains and Queuing Theory as they pertain to systems simulation. Systems applications come from the manufacturing and service sectors. Students investigate issues through readings, lectures and hands-on projects. Prerequisites: IME 553, 724, or instructor's consent.

**IME 874. MSIE Graduate Seminar (1).** Seminar course performed under faculty supervision, related to a topic of research interest to both the faculty and the student. Repeatable. Graded *S/U*. Prerequisite: faculty consent.

**IME 876. Thesis (1–6).** Repeatable for credit. Graded *S/U*. Prerequisite: consent of thesis advisor.

**IME 877. Foundations of Neural Networks (3).** For students from a variety of disciplines. Introduces the theory and practical applications of artificial neural networks. Covers several network paradigms, emphasizing the use of neural networks as a solution tool for industrial problems which require pattern recognition, predictive and interpretive models, pattern classification, optimization and clustering. Presents examples and discusses them from a variety of areas including quality detection, process monitoring, robotics, simulation metamodeling, economic and finance analysis, diagnostic models, combinatorial optimization, and machine vision. Prerequisite: IME 724 or instructor's consent.

**IME 878. MS Directed Project (1–3).** A project conducted under the supervision of an academic advisor for the directed project option. Requires a written report and an oral presentation on the project. Graded *S/U*. Prerequisite: consent of academic advisor.

**IME 880. Topics in Industrial Engineering (3).** New or special courses are presented under this listing on sufficient demand. Repeatable for credit when subject matter warrants.

**IME 890. Independent Study in Industrial Engineering (3).** Analysis, research and solution of a selected problem. Prerequisite: instructor's consent.

**IME 930. Multiple Criteria Decision Making (3).** An extensive treatment of techniques for decision making where the multiple criteria nature of the problem must be recognized explicitly. Prerequisite: IME 550.

**IME 950. Occupational Biomechanics (3).** Theoretical fundamentals of the link system of the body and kinetic aspects of body movement. Includes application of biomechanics to work systems. Prerequisites: IME 549, AE 223.

**IME 960. Advanced Selected Topics (1–3).** New or special courses on advanced topics presented under this listing on sufficient demand. Prerequisite: instructor's consent.

**IME 976. PhD Dissertation (1–6).** Repeatable for credit. Graded *S/U*. Prerequisite: admission to doctoral aspirant status.

**IME 990. Advanced Independent Study (I–3).** Arranged individual, independent study in specialized content areas. Repeatable toward the PhD degree. Prerequisites: advanced standing and departmental consent.

## Mechanical Engineering (ME)

### Graduate Faculty

*Professors*: Hamid M. Lankarani, Muhammad M. Rahman (chairperson), Tiruvadi Ravigururagan (graduate coordinator)

*Associate Professors:* Ikram Ahmed, Ramazan Asmatulu, Brian Driessen

*Assistant Professors:* Fadi Alsaleem, Davood Askari, Shuang Gu, GiSuk Hwang, Bin Li, Rajeev Madhavannair, Yimesker Yihun

The department of mechanical engineering offers courses of study leading to the Master of Science (MS) and Doctor of Philosophy (PhD) degrees. Departmental faculty have developed research activities in the following areas of specialization:

- Materials science and engineering (including composites, nano- and biocomposites, nanotechnology);
- Energy and thermal-fluid sciences (including alternative fuels and fuel safety, non-Newtonian and viscoelastic materials, biofluids and bioheat transfer, computational fluid dynamics, heat transfer) and renewable energy;
- Mechanical systems analysis and design (including vehicle crashworthiness and impact dynamics, mechanical design); and
- Robotics and control (including biosensors and biomedical devices, nonlinear control).

State of the art research laboratories within the department complement the above activities. In addition, faculty members are associates of Wichita State's National Institute for Aviation Research (NIAR). This association makes NIAR facilities available for the research activities of these faculty and their graduate students.

Research facilities include the computational fluid dynamics laboratory (CFD lab) with a linux-based network, the crash dynamics laboratory, the shock and vibration laboratory, the computer integrated manufacturing laboratory, and the mechatronics laboratory.

Departmental facilities in the Engineering Research building:

- Nanotechnology Laboratory
- Nanocomposites and Biocomposites Laboratory
- Biodynamics Laboratory

- BioDevice Laboratory
- Acoustic Measurements and Material Characterization Laboratory
- Thermal Spray Coating Systems Laboratory
- Advanced Joining Processes and Assembly Lab
- Controls Laboratory
- Fuel and Fire Safety

The department's programs and efforts are influenced by the concentration of technology-oriented industries in the Wichita area. Particular attention is given to scheduling coursework so that engineers employed by local industry may pursue a graduate degree in mechanical engineering.

## Master of Science

### *Admission Requirements*

In addition to the requirements outlined by the Graduate School, the ME program requires its applicants to:

1. Have a calculus-based engineering degree with a GPA equivalent of 3.000 on a 4.000 scale based on the last 60 hours of undergraduate study.
2. Applicants must have completed calculus, including differential equations, and two physics courses with lab.
3. Applicants must have a broad background in mechanical systems, including courses in statics; dynamics and design of machine elements; and in energy systems, including courses in thermodynamics, fluid mechanics and heat transfer.
4. Applicants with calculus-based engineering degrees in other majors and math, physics, or chemistry majors may be considered for conditional admission. Undergraduate courses will be listed to correct deficiencies which will prepare them for graduate courses in mechanical engineering.
5. Submit a statement of interest and two reference letters corroborating the applicant's undergraduate background.
6. A GRE score is not required for admission to the MSME program, however, GRE scores may be submitted for consideration of assistantship positions.

### *MSME Degree Requirements*

In addition to the requirements outlined by the Graduate School, the MSME program applies the following guidelines to its program students:

1. The plan of study should contain a minimum of 12 credits in a focused area within mechanical engineering.
2. A maximum of 6 credits may be taken or transferred from outside the department (maximum 9 credits in the case of the all-course option).
3. A maximum of 6 credits are allowed at the 600 level of courses in the plan of study (9 credits in the all-course option).
4. A satisfactory completion of a thesis, a project or a comprehensive exam during the last semester of the MSME program.

## Doctor of Philosophy

### *Admission Requirements*

In addition to the Graduate School requirements, the mechanical engineering department requires its PhD applicants to meet the following:

1. A strong performance (with a GPA of 3.000 on a scale of 4.000) in a calculus-based mechanical or closely-related undergraduate engineering program comprising core fundamental courses in statics, dynamics, design of machine elements, thermodynamics, fluid mechanics and heat transfer.
2. A strong performance with a GPA of 3.250 on a scale of 4.000 in a master's degree in a science-based mechanical engineering program or a closely-related engineering program.
3. Strong evidence of research exposure in the form of a thesis or an engineering conference/journal publication is required.
4. Official GRE scores. While there is no minimum score, the scores are used by the faculty in admission and award of assistantships.
5. A statement of interest, a resume, and two letters of recommendation corroborating the applicant's academic performance.

### *PhD Degree requirements*

The mechanical engineering department requires all its PhD candidates to satisfy the requirements set by the Graduate School.

**Courses for Graduate/Undergraduate Credit**

*Courses required for the BS degree normally are not permitted for use toward the graduate degree in mechanical engineering.*

**ME 502. Thermodynamics II (3).*** Continuation of ME 398, emphasizing cycle analysis, thermodynamic property relationships and psychrometrics, with an introduction to combustion processes and chemical thermodynamics. Prerequisite: ME 398.

**ME 521. Fluid Mechanics (3).*** Fluid statics. Basic equations of fluid mechanics. Study of flow in closed conduits and over immersed bodies. Includes compressible flow, turbomachinery and measurements in fluid mechanics. Prerequisites: ME 398, MATH 555 and AE 373.

**ME 522. Heat Transfer (3).*** Temperature fields and heat transfer by conduction, convection and radiation. Steady and transient multidimensional conduction, free and forced convection, and combined heat transfer. Discusses various analytical methods, analogies, numerical methods and approximate solutions. Prerequisite: ME 521.

**ME 533. Mechanical Engineering Laboratory (3). 2R; 3L.** Introduces the basics of engineering measurements. Discusses related theory, followed by applications in such areas as strain, sound, temperature and pressure measurements. Format includes lectures, recitation (which presents the concept of the experiment to be performed and the required data analysis), and laboratories. Analyzes the data obtained from measuring systems set up and operated in the laboratory to demonstrate and reinforce fundamental concepts of engineering mechanics. Prerequisites: EE 282, AE 333. Corequisite: ME 522.

**ME 541. Mechanical Engineering Design II (3).** Applications of engineering design principles to the creative design of mechanical equipment. Problem definition, conceptual design, feasibility studies, design calculations to obtain creative solutions for current real engineering problems. Introduction to human factors, economics and reliability theory. Group and individual design projects. Prerequisite: ME 439.

**ME 544. Design of HVAC Systems (3).** Analysis and design of heating, ventilating and air-conditioning systems based on psychometrics, thermodynamics and heat transfer fundamentals. Focuses on design procedures for space air-conditioning, and heating and cooling loads in buildings. Prerequisites: ME 521, 522 or equivalent.

**ME 602. Engineering for the Environment (3).** Engineering for the environment, air, water and noise pollution, and handling of hazardous wastes. Covers briefly the main pollutants, their major sources, their effects and their attainment levels set by the U.S. Environmental Protection Agency. Emphasizes engineering systems for pollution control. Prerequisites: ME 398, AE 223, IME 255, or departmental consent.

**ME 631. Heat Exchanger Design (3).** Covers analytical models for forced convection through tubes and over surfaces, experimental correlations for the Nusselt number and pressure drop; design of single and multiple pass shell and tube heat exchangers; compact baffled, direct contact, plat and fluidized bed heat exchangers, radiators, recuperators and regenerators. Prerequisites: ME 521 and 522, or equivalent.

**ME 633. Mechanical Engineering Systems Laboratory (3). 2R; 3L.*** Selected experiments illustrate the methodology of experimentation as applied to mechanical and thermal systems. Experiments include the measurement of performance of typical systems and evaluation of physical properties and parameters of systems. Group design and construction of an experiment is an important part of the course. Team and individual efforts are stressed as are written and oral communication skills. Prerequisites: ME 533, ENGL 102.

**ME 637. Computer-Aided Engineering (3). 2R; 3L.** Integrates computer-aided design, finite element analysis, kinematics analysis, heat transfer analysis and other considerations for design of mechanical components and systems. Provides a blend of theory and practice. Corequisite: ME 339 or equivalent.

**ME 639. Applications of Finite Element Methods in Mechanical Engineering (3). 2R; 3L.** Introduces the finite element method (FEM) as a powerful and general tool for solving differential equations arising from modeling practical engineering problems. Finite element solutions to one- and two-dimensional mechanical engineering problems in fluid mechanics, heat transfer, solid mechanics and vibrations. Includes Galerkin's and variational finite element models. Introduces commercial finite element computer tools such as ANSYS. Prerequisite: ME 439 or 522, or equivalent.

**ME 650. Selected Topics in Mechanical Engineering (1–3).** New or special topics are presented on sufficient demand. Repeatable for credit when subject material warrants. Prerequisite: departmental consent.

**ME 651. Biomaterials (3).** Introduction to biomaterials and biotechnology for both undergraduate and graduate students focusing on biomaterials (e.g., metals and alloys, composites, polymers and ceramics), biodevices, basic fabrication and characterization techniques, and their general properties and applications. Prerequisite: ME 250.

**ME 659. Mechanical Control Systems (3).*** Cross-listed as EE 684. Modeling and simulation of dynamic

systems. Theory and analysis of the dynamic behavior of control systems, based on the laws of physics and linear mathematics. Concerns classical methods of feedback control systems and design. Prerequisites: (1) EE 282 and MATH 555, or (2) EE 383.

**ME 662. Senior Capstone Design (3). 1R; 6L.*** An exercise in the practice of mechanical engineering; students engage in a comprehensive design project requiring the integration of knowledge gained in prerequisite engineering science and design courses. Team effort and both oral and written presentations are a part of the experience. Prerequisite: mechanical engineering students in their last semester of study.

**ME 664. Introduction to Fatigue and Fracture (3).** Deals with the primary analytical methods used to quantify fatigue damage. These are the stress life approach, strain life approach and the fracture mechanics approach. Prerequisite: ME 250.

**ME 665. Selection of Materials for Design and Manufacturing (3).** Focuses on the selection of engineering materials to meet product and manufacturing requirements. Solution to various product and manufacturing problems by appropriate selection of materials is illustrated through the use of numerous examples and case studies. Prerequisites: ME 250, AE 333.

**ME 667. Mechanical Properties of Materials I (3).** Major focus on deformation mechanisms and on crystal defects that significantly affect mechanical properties. Also covers plasticity theory, yield criteria for multi-axial states of stress, fracture mechanics and fracture toughness. Includes some review of basic mechanics of materials and elasticity as needed. Prerequisite: ME 250 or departmental consent.

**ME 669. Acoustics (3).** Fundamentals of acoustics including the study of simple harmonic systems, acoustic waves, transmission phenomena, and environmental and architectural acoustics. Prerequisites: MATH 555, AE 373.

**ME 678. Studies in Mechanical Engineering (1–3).*** Arranged individual, independent study in specialized content areas in mechanical engineering under the supervision of a faculty member. Requires written report or other suitable documentation of work for departmental records. Three (3) hours maximum technical elective credit. Not for graduate credit. Prerequisite: departmental consent.

**ME 682. Engineering Applications of Computational Fluid Dynamics and Heat Transfer (3).** Reviews the basic laws of fluid flow and heat transfer including the Navier-Stokes equations. Applications include a CFD software emphasizing the finite volume method and introducing turbulence modeling. Additional topics include grid generation and benchmarking exercises as well as open-ended projects. Prerequisites: ME 325 (or AE 227) and ME 522 (or AE 424) with a minimum grade of C in each, or instructor's consent.

**ME 709. Injury Biomechanics (3).** Offers insight into the trauma problem and methods used to quantify and reduce it. Research methods used in injury biomechanics and their limitations are discussed including tests with human volunteers, cadavers, animals, mechanical crash test dummies and computer models. Provides a basic understanding of injury mechanisms and tolerances for the different body parts, including head, spine, thorax and extremities. Presents both automotive and aircraft impact safety regulations on occupant protection and related biomechanical limits. Students are exposed to and gain experience in using mathematical/numerical/computer models for injury biomechanics. Prerequisite: instructor's consent.

**ME 719. Basic Combustion Theory (3).** Introduction to the fundamental principles of combustion processes. Examines the chemistry and physics of combustion phenomena, that is, detonation and flames, explosion and ignition processes. Prerequisites: CHEM 211, ME 502.

**ME 729. Computer-Aided Analysis of Mechanical Systems (3).** Modeling and analysis of planar motion for multibody mechanical systems including automatic generation of governing equations for kinematic and dynamic analysis, as well as computational methods and numerical solutions of governing equations. Open-ended student projects on engineering applications such as vehicle ride stability simulations for different terrains. Prerequisites: ME 339, AE 373, MATH 555.

**ME 737. Robotics and Control (3).** A systems engineering approach to robotic science and technology. Fundamentals of manipulators, sensors, actuator, end-effectors and product design for automation. Includes kinematics, trajectory planning, control, programming of manipulator and simulation, along with introduction to artificial intelligence and computer vision. Prerequisite: ME 659 or equivalent.

**ME 739. Advanced Machine Design (3).** A broad coverage of principles of mechanical analysis and design of machine elements. Emphasizes dynamic system modeling, prediction of natural frequencies and forced response, effect of support flexibility, failure theories used in design and fatigue life prediction. Typical mechanical systems studied are gears, bearings, shafts, rotating machinery and many types of spring-mass systems. Uses fundamentals learned in mechanics, strength of materials and thermal sciences to understand mechanical system modeling, analysis and design. Prerequisite: ME 541 or instructor's consent.

**ME 747. Microcomputer-Based Mechanical Systems (3). 2R; 3L.** Microcomputer-based real-time control of mechanical systems. Familiarizes students with design and methodology of software for real-time control. Includes an introduction to the C programming language which is most relevant to interfacing and implementation of control theory in computer-based systems. Laboratory sessions involve interfacing microcomputers to mechanical systems and software development for control methods such as PID. Prerequisite: ME 659 or instructor's consent.

**ME 750. Special Topics in Mechanical Engineering (1–3).** New or special topics are presented on sufficient demand. Repeatable for credit when subject material warrants. Prerequisite: departmental consent.

**ME 751. Selected Topics (1–3).** New or special topics are presented on sufficient demand. Repeatable for credit when subject material warrants. Prerequisite: departmental consent.

**ME 755. Intermediate Thermodynamics (3).** Laws of thermodynamics, introduction to statistical concepts of thermodynamics, thermodynamic properties, chemical thermodynamics, Maxwell's relations. Prerequisite: ME 502 or departmental consent.

**ME 758. Nonlinear Controls of Electro-Mechanical Systems (3).** The standard first nonlinear controls course. Covers stability, feedback linearization (robotic, mechanical, electro-mechanical system applications), differentially-flat systems (with rotor-craft position tracking applications), back-stepping control-design methods (electro-mechanical, robotic and rotor-craft applications), MIMO systems, normal form, zero dynamics, and adaptive control of robotic systems. EE 792, Linear Systems, while not a prerequisite, is helpful.

**ME 760. Fracture Mechanics (3).** Covers fracture mechanics in metals, ceramics, polymers and composites. Suitable for graduate and undergraduate study in metallurgy and materials, mechanical engineering, civil engineering and aerospace engineering where a combined materials-fracture mechanics approach is stressed. Prerequisite: ME 250 or departmental consent.

**ME 762. Polymeric Composite Materials (3).** Designed to provide students with an understanding and knowledge about polymeric composite materials. The characteristics of various composite manufacturing processes are presented and their capabilities and limitations are highlighted. Materials and manufacturing process design and engineering for polymeric composites are discussed. Prerequisites: ME 250 and MATH 555 or instructor's consent.

**ME 767. X-Ray Diffraction (3).** Theory of x-ray diffraction, experimental methods and their applications which can include determination of the crystal structure of materials, chemical analysis, stress and strain measurements, study of phase equilibria, measurement of particle size and determination of the orientation of a single crystal. Prerequisites: ME 250 and AE 333 or departmental consent.

**ME 769. Impact Dynamics (3).** Classical methods are presented to analyze mechanical components and structures for impact response. Impact methods include stereo mechanics, contact mechanics, impulse-momentum, stress-wave, energy method and plastic impact. Finite element analysis (FEA) modeling of impact events are examined and applied to classical methods. Material properties evaluation for impact conditions, design techniques for impact and shock mitigation, and an introduction to crashworthiness are also presented. Course goals are to understand characteristics such as loading, stresses, deflections, contact forces and material response to impact events. Prerequisite: ME 439 or instructor's consent.

**ME 781. Cooperative Education (1–8).** A work-related placement with a supervised professional experience to complement and enhance the student's academic program. Intended for master's level or doctoral students in mechanical engineering. Repeatable for credit. May not be used to satisfy degree requirements. Graded *Cr/NCr*. Prerequisites: graduate standing, departmental consent, graduate GPA of 3.000 or above.

### Courses for Graduate Students Only

**ME 801. Boundary Layer Theory (3).** Development of the Navier-Stokes equation, laminar boundary layers, transition to turbulence, turbulent boundary layers, and an introduction to homogeneous turbulence. Prerequisite: ME 521 or departmental consent.

**ME 802. Turbulence (3).** An overview of the theory, practical significance and computation of turbulent fluid flow. Prerequisites: ME 521, 801.

**ME 829. Advanced Computer-Aided Analysis of Mechanical Systems (3).** Computational methods in modeling and analysis of spatial multibody mechanical systems. Includes Euler parameters, automatic generation of governing equations of kinematics and dynamics, numerical techniques and computational methods; computer-oriented projects on ground vehicles with suspension and steering mechanisms, crashworthiness and biodynamics. Prerequisite: ME 729 or instructor's consent.

**ME 847. Applied Automation and Control Systems (3). 2R; 3L.** Control theory condensed to engineering practice with the analysis, design and construction of operating control systems. Experiments with pneumatic, hydraulic and electro-mechanical servo-systems. Implementation of feedback and feed forward control schemes for various industrial systems and machine tools. The experiments are project-oriented and intended to be representative of the current state-of-the-art in classical and modern control practice. Prerequisite: ME 659 or equivalent.

**ME 850. Special Topics in Mechanical Engineering (3).** New or special topics are presented on sufficient demand. Repeatable for credit when subject material warrants. Prerequisite: departmental consent.

**ME 854. Two-Phase Flow Heat Transfer (3).** Thermodynamic and mechanical aspects of interfacial phenomena, boiling; condensation near immersed surface, pool boiling, internal flow convective boiling and condensation. Prerequisites: ME 522, MATH 555, or departmental consent.

**ME 860. Introduction to Ceramics (3).** Introduces the fundamental principles of ceramic science and engineering with application on ceramics processes and fabrications. Presents the concepts and properties using the crystal structure background. Discusses nonequilibrium aspect of phase relation in ceramics systems and their influence on processing parameters. Covers the microstructure form by liquid, liquid-solid, and solid-state reaction with some detail in combination with heat treatment. Students are expected to have backgrounds in chemistry, physics, math, thermodynamics, mechanics of solids and introduction to materials in undergraduate engineering courses.

**ME 864. Physical Metallurgy (3).** Covers a range of basic concepts in physical metallurgy essential for further study in materials engineering. Topics include structure and diffraction, dislocations, defects and thermal processes, solid solution and hardening, diffusion, and phase diagrams and transformations. Prerequisites: ME 250, 398, AE 333, or departmental consent.

**ME 866. Advanced Fracture Mechanics (3).** Covers the fracture mechanics of elastic-brittle, ductile, time dependent, and heterogeneous materials at an advanced level. The material is suitable for graduate study only in metallurgy and materials, mechanical engineering, and aerospace engineering where a combined materials-fracture mechanics approach is stressed. Prerequisites: ME 250, AE 333, or departmental consent.

**ME 867. Mechanical Properties of Materials II (3).** After a brief review of pertinent concepts of the macro-mechanical behavior of deformable bodies, course focuses on deformation mechanisms and on crystal defects that significantly affect mechanical properties and strengthening mechanisms. This includes point, line and planar crystalline defects; dislocation dynamics, and various hardening and strengthening mechanisms. Concludes with discussion of physical properties and testing methods to measure these properties. Prerequisite: ME 667 or departmental consent.

**ME 876. Thesis (1–4).** Repeatable for credit toward the MS thesis option up to 6 hours. Graded *S*/*U*. Prerequisite: consent of MS thesis advisor.

**ME 878. MS Directed Project (1–3).** A project conducted under the supervision of an academic advisor for the directed project option. Requires a written report and an oral presentation on the project. Graded *S*/*U*. Prerequisite: consent of academic advisor.

**ME 890. Independent Study in Mechanical Engineering (1–3).** Arranged individual, independent study in specialized content areas. Prerequisite: instructor's consent.

**ME 901. Advanced X-Ray Diffraction Theory (3).** First part concentrates on the fundamental X-ray diffraction theories including dynamical theory of X-ray and anomalous absorption, with which a serious student in this field must be thoroughly familiar. Second part emphasizes the general theory of X-ray diffraction in a concise and elegant form using Fourier transforms. The general theory is then applied to various atomic structures, ideal crystals, imperfect crystals and amorphous bodies. Prerequisites: ME 767, MATH 757.

**ME 960. Advanced Selected Topics (1–3).** New or specialized advanced topics in mechanical engineering. Prerequisite: instructor's consent.

**ME 962. Advanced Ceramics (3).** Covers concepts in ceramics science and engineering essential to understanding and using advanced ceramic materials such as high temperature metaloceramics. Expands coverage of fundamental concepts and physical properties presented in ME 860. Provides deeper understanding of crystalline solids and characteristic properties of ceramics. Incorporates many of the most recent advances in the area. Students are expected to have backgrounds in chemistry, physics, math, thermodynamics, mechanics of solids and introduction to materials in undergraduate engineering courses.

**ME 976. PhD Dissertation (1–16).** Repeatable for credit. Graded *S*/*U*. Prerequisite: admission to doctoral aspirant status.

**ME 990. Advanced Independent Study (1–16).** Arranged individual, independent study in specialized content areas. Repeatable toward the PhD degree. Prerequisites: advanced standing and instructor's consent.

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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.

* Normally not permitted for use toward the graduate degree in mechanical engineering.

# College of Fine Arts

**Rodney Miller, *dean***
**112 Jardine Hall • (316) WSU-3389**
**wichita.edu/finearts**
**Wendy Hanes,** *assistant dean*
**Ted Adler,** *coordinator for graduate studies in art*
**Mark Foley,** *coordinator for graduate studies in music*

## School of Art, Design and Creative Industries

(316) 978-3555—Royce Smith, *director*
**Art Education,** (316) 978-7718—Mary Sue Foster, *program director*
**Art History,** (316) 978-7715—Royce Smith, *program director*
**Graphic Design,** (316) 978-7709—Jim Hellman, *program director*
**Studio Art,** (316) 978-5467—Barry Badgett, *program director*

## School of Music

(316) 978-3500—Russell D. Widener, *director*
**Music Education Studies,** (316) 978-6125—Thomas Wine, *program director*
**Musicology—Composition Studies**, (316) 978-6278—Dean Roush, *program director*
**Keyboard Studies,** (316) 978-6235—Andrew Trechak, *program director*
**Strings/Orchestra Studies,** (316) 978-6202— Mark Laycock, *program director*
**Voice/Choral Studies,** (316) 978-6473—Marie King, *program director*
**Winds/Percussion/Band Studies,** (316) 978-6424—Victor A. Markovich, *program director*

## School of Performing Arts

(316) 978-3368—Linda Starkey, *director*
**Dance,** (316) 978-3645—C. Nicholas Johnson, *program director*
**Music Theatre,** (316) 978-3368—Linda Starkey, *program director*
**Theatre,** (316) 978-3646—Bret Jones, *program director*

# Fine Arts (FA)

Although there is no graduate degree in general fine arts, the following courses are available for graduate credit.

**Courses for Graduate/Undergraduate Credit**

**FA 590. Special Topics in the Fine Arts (1–4).** For group instruction. May be repeated for credit. Involves interdisciplinary upper-division/graduate-level topics with the fine arts (music, art, dance and theatre). Prerequisite: senior undergraduate or graduate standing or instructor's consent.

**FA 710. Seminar in Creativity and Innovation (1–3).** As one of four core courses in the Master of Innovation Design, the purpose of this seminar is to help the student better understand and appreciate the subject of creativity. To that end, this course focuses on developing new ways of thinking which are different from those typically learned in single discipline design programs.

The seminar provides many opportunities to apply these new ways of thinking through class exercises, possible course projects, and conversations with a wide array of guests who have prospered through the incorporation of creativity/innovation into what they do professionally. Students learn techniques for improving the flexibility and originality of their thinking and explore approaches used by others to create and sustain high levels of innovation. Topics include: personal thinking preferences, everyday creativity and eliminating mental blocks, creative thinking techniques, idea selection approaches, teaming techniques for creativity, conditions that promote creativity, design for interaction, disruptive technologies, and intellectual property. Seminar uses fun and hands-on activities to stimulate innovation. Repeatable for credit.

## School of Art, Design and Creative Industries

Royce Smith, *director*
Ted Adler, *associate director*

The School of Art, Design and Creative Industries offers programs leading to the Master of Fine Arts degree. Students seeking the Master of Fine Arts degree select an emphasis in ceramics, painting, photo media, printmaking or sculpture. The specific requirements are described under the appropriate program listing, below.

## Art Education (ARTE)

**Graduate Faculty**
*Professor*: Mary Sue Foster

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

**Courses for Graduate/Undergraduate Credit**

**ARTE 514. Aesthetic Inquiry (3).** Focuses on contemporary trends in aesthetics relative to the visual arts. Students write critical observations and interpretations in response to artwork. Prerequisite: upper-division art major.

**ARTE 515. Developing Visual Materials for Art Education (3).** A production laboratory that emphasizes the integration and selection of appropriate visual media for art instruction. Prerequisite: ARTE 310 or equivalent.

**ARTE 517. Student Teaching Seminar in Art (1).** Analyzes problems encountered in the art classroom during student teaching. Requires concurrent enrollment in student teaching courses. For undergraduate students only. Prerequisites: acceptance into Core III student teaching semester, including CESP 433; grades of *B-* or better in ARTE 310, 410, 414; 2.500 overall GPA. Corequisites: ARTE 462, 459.

**ARTE 550. Art Workshop (1–3).** Repeatable for credit. Area covered is determined at the time the course is offered.

**ARTE 702. Metal Processes for Jewelry Construction (3).** Emphasizes fabrication techniques, design analysis and function of jewelry designed and produced by students and acknowledged craftsmen. Repeatable once for credit. Prerequisite: ARTE 302 or instructor's consent.

**ARTE 710. Creative Behavior and Visual Thinking (3).** Identification and application of theories for creative and critical thinking. Emphasizes strategies for problem solving and visual thinking and procedures to implement those strategies. Student identifies an area for individual investigation. Repeatable once for credit.

**ARTE 711. Seminar in Art Education (1–3).** Supervised study and research of contemporary issues in art education. Repeatable for credit with advisor's consent.

**ARTE 713. Fiber and Fabric Processes (2–3).** Fiber processes using traditional and experimental techniques in woven forms and other structural techniques using natural and man-made fibers. Repeatable once for credit. Prerequisite: instructor's consent.

**ARTE 714. Aesthetics for the Classroom (3).** Focuses on applying the issues and theories of aesthetics to the K–12 classroom. Students participate in discussions and

demonstrations of these theories through critical and reflective writing as well as curricular planning. Students consider aesthetic development and construct lessons to integrate strategies involving aesthetic concepts into their teaching.

**ARTE 750. Art Workshop (1–3).** Repeatable for credit. Area to be covered is determined at the time course is offered.

**Courses for Graduate Students Only**

**ARTE 815. Individual Research Problems in Art Education (1–4).** Directed independent study in art education not normally covered in other graduate coursework. Repeatable for credit. Prerequisite: instructor's consent.

**ARTE 816–817. Thesis—Art Education (1–3; 1–3).**

**ARTE 818–819. Terminal Project—Art Education (1–3; 1–3).**

## Graphic Design—Visual Communication Art (ARTG)

Although there is no graduate degree in graphic design, the following courses are available for graduate study.

**Courses for Graduate/Undergraduate Credit**

**ARTG 530. Seminar in Graphic Design (3).** Supervised study and research. Requires weekly consultation and reports. Repeatable for credit. Prerequisite: instructor's consent.

## Art History (ARTH)

**Graduate Faculty**

*Associate Professor:* Royce Smith (director)
*Assistant Professors:* Brittany Lockard, Claudia Pederson

Although there is no graduate degree in art history, the following courses are available for graduate credit.

**Courses for Graduate/Undergraduate Credit**

**ARTH 520. Seminar in Art History (3).** Systematic study in selected areas of art history. Course content varies but individual areas are not repeatable for credit.

**ARTH 528. Museum Techniques I (3).** Primarily for the graduate student interested in museum work. Includes specialized research related to the administrative responsibilities of a museum: collection, exhibition, recording, preservation and financial activities.

**ARTH 532. Independent Study in Art History (1–3).** Work in a specialized area of the study of art history. Directed readings and projects. Prerequisite: instructor's consent.

**ARTH 533. Seminar: Topics in Modern Art (1–3).** Selected readings and problems in art of the modern era. Course content varies but individual areas are not repeatable for credit.

**ARTH 732. Independent Study in Art History (1–3).** Work in specialized area of the study of art history. Directed readings and projects for graduate students in all disciplines. Prerequisite: instructor's consent.

**Courses for Graduate Students Only**

**ARTH 832. Independent Study (1–3).** Individually supervised work in a specialized area of the study of art history. Directed readings, research and projects. Repeatable for credit. Prerequisites: suitable preparation for graduate work in art history (e.g., BA or BFA in art history) and instructor's consent.

## Studio Art (ARTS)

**Graduate Faculty**

*Associate Professors:* Ted Adler (graduate coordinator), Robert Bubp (foundations coordinator), Levente Sulyok
*Assistant Professors:* Jennifer Ray, Humberto Saenz

### Master of Fine Arts

The Master of Fine Arts (MFA) degree, the terminal degree for studio art, is offered for qualified students planning careers as professional artists, either working independently or as artist-teachers on the college or art school level. The program offers emphases in ceramics, painting, photo media, printmaking, and sculpture.

#### *Admission Requirements*

Admission without deficiencies requires a grade point average of at least 2.750 based upon the last 60 hours of coursework, the other general requirements of the Graduate School, with the additional requirement of a 3.000 grade point average in the emphasis (ceramics, painting, photo media, printmaking or sculpture). Also required is a Bachelor of Fine Arts (BFA) degree, or the equivalent of a BFA, that includes a minimum of 12 hours of art history, 15 hours in the emphasis, and 20 hours of related work. Completed application materials must be received by the first Wednesday in February for admission to the following fall semester and the first Wednesday in October for the following spring semester. The Graduate Record Examination (GRE) is not a requirement for admission.

#### *Application Procedures*

Applicants should forward the following to: Graduate School, Wichita State University, 1845 Fairmount, Wichita, KS 67260-0004.

1. Completed application for admission to Graduate School. Online application: Graduate School website: wichita.edu/gradschool. Paper application: Contact the Graduate School (316) 978-3095, gradinqu@wichita.edu, or the Graduate School website;
2. Nonrefundable application fee; and
3. Two official transcripts of all college-level academic work in sealed envelopes.

Applicants must apply to the School of Art, Design and Creative Industries at wsufinearts.slideroom.com. Please note that an additional fee may be required by slideroom.

Through the slideroom portal, applicants will be prompted to submit:

- An application including a statement of intent (outlining artistic goals, professional objectives, and expectations of graduate study experience) and an artist's statement (outlining artistic philosophy and the nature of work presented in the portfolio);
- A resume listing education, academic and art awards and recognition, exhibitions and any relevant information;
- Three original letters of recommendation (recommenders will be listed in the online portal); and
- A portfolio with 15–20 examples of recent work, labeled with title, description, size, medium and date.

Do not send materials directly to the School of Art & Design. They will be returned unopened.

***Prerequisites.*** Students who have not been accepted to the degree status for the MFA in art may enroll in 800-level courses only with the written consent of the course faculty and graduate coordinator, and must be admitted to at least nondegree Category A status in any graduate area.

Questions regarding application procedures should be directed to:

Graduate Coordinator
School of Art, Design and Creative Industries
Wichita State University
1845 Fairmount
Wichita, Kansas 67260-0067
(316) 978-7700
ted.adler@wichita.edu

#### *Degree Requirements*

Minimum course requirements for completion of the MFA degree are outlined below for each studio discipline. In addition, 45 of the 60 hours must be taken in courses numbered 800 or above.

*MFA Studio Arts—All Emphases*

All students must complete the coursework listed below in addition to the coursework required for their emphasis area.

| | | |
|---|---|---|
| *Required* | | *(3 hrs.)* |
| ARTS 790 | Graduate Teaching Seminar | 1 |
| ARTS 895 | Prof. Practices in Studio Art | 2 |
| *Art History* | | *(minimum of 6 hrs.)* |
| ARTH 520 | Seminar in Art History | 3 |
| ARTH 520_ | Topics Courses | 3 |
| ARTH 528 | Museum Techniques I | 3 |
| ARTH 532 | Independent Study in ARTH | 1–3 |
| ARTH 533_ | Seminar: Topics in Modern Art | 1–3 |
| ARTH 540_ | Topics Courses | 3 |
| ARTH 550_ | Topics Courses | 3 |
| ARTH 560_ | Topics Courses | 3 |
| ARTH 732 | Independent Study in ARTH | 1–3 |
| ARTH 832 | Independent Study | 1–3 |
| *University Electives* | | *(maximum of 6* hrs.*)* |

Art or non-art courses 500 level or above. May include ARTH, ARTE, or ARTG courses. May include ARTS 800. Courses must be approved by the faculty advisor. See the Graduate Catalog and online schedule of courses.

*MFA Studio Arts—Ceramics*

| | | |
|---|---|---|
| *Studio—Emphasis* | | *(complete 23 hrs.)* |
| ARTS 870 | Special Problems in Ceramics | 1–5 |
| ARTS 875 | Advanced Research of Ceramic Materials | 3 |
| ARTS 876 | Advanced Study of Ceramic Glazes | 3 |

*Studio—Minor ..... (complete 12 hrs.)*
ARTS 800_ Seminar in Art Topics .....3
ARTS 800I Galleries & Exhibitions .....3
ARTS 830 Special Prob. in Photo Media ...1–3
ARTS 840 Special Prob. in Life Drawing ..1–3
ARTS 845 Special Problems in Drawing...1–3
ARTS 850 Special Problems in Painting....1–5
ARTS 860 Spcl. Prob. in Printmaking—Intaglio.....1–5
ARTS 862 Spcl. Prob. in Printmaking—Lithography, Black & White.....1–5
ARTS 863 Spcl. Prob. in Printmaking—Lithography, Color.....1–5
ARTS 880 Special Problems in Sculpture .1–5
*Terminal Project .....(10 hrs.)*
ARTS 878 Terminal Project—Ceramics.....5
ARTS 879 Terminal Project—Ceramics.....5

***MFA Studio Arts—Painting***
*Studio—Emphasis.....(complete 23 hrs.)*
ARTS 850 Special Problems in Painting
*Studio—Minor .....(complete 12 hrs.)*
ARTS 800_ Seminar in Art Topics .....3
ARTS 800I Galleries & Exhibitions .....3
ARTS 830 Special Prob. in Photo Media ...1–3
ARTS 840 Special Prob. in Life Drawing ..1–3
ARTS 845 Special Problems in Drawing...1–3
ARTS 860 Spcl. Prob. in Printmaking—Intaglio.....1–5
ARTS 862 Spcl. Prob. in Printmaking—Lithography, Black & White.....1–5
ARTS 863 Spcl. Prob. in Printmaking—Lithography, Color.....1–5
ARTS 870 Special Problems in Ceramics..1–5
ARTS 875 Advanced Research of Ceramic Materials .....3
ARTS 876 Advanced Study of Ceramic Glazes .....3
ARTS 880 Special Problems in Sculpture .1–5
*Terminal Project .....(10 hrs.)*
ARTS 858 Terminal Project—Painting.....5
ARTS 859 Terminal Project—Painting.....5

***MFA Studio Arts—Photo Media***
*Studio—Emphasis .....(complete 23 hrs.)*
ARTS 830 Special Prob. in Photo Media ...1–5
ARTS 800_ Special Topics in Photo Media.....3
*Studio—Minor .....(complete 12 hrs.)*
ARTS 800_ Seminar in Art Topics .....3
ARTS 800I Galleries & Exhibitions .....3
ARTS 840 Special Prob. in Life Drawing ..1–3
ARTS 845 Special Problems in Drawing...1–3
ARTS 850 Special Problems in Painting....1–5
ARTS 860 Spcl. Prob. in Printmaking—Intaglio.....1–5
ARTS 862 Spcl. Prob. in Printmaking—Lithography, Black & White.....1–5
ARTS 863 Spcl. Prob. in Printmaking—Lithography, Color.....1–5
ARTS 870 Special Problems in Ceramics..1–5
ARTS 875 Advanced Research of Ceramic Materials .....3
ARTS 876 Advanced Study of Ceramic Glazes .....3
ARTS 880 Special Problems in Sculpture .1–5
*Terminal Project .....(10 hrs.)*
ARTS 838 Terminal Project—Photo Media..5
ARTS 839 Terminal Project—Photo Media..5

***MFA Studio Arts—Printmaking***
*Studio—Emphasis .....(complete 23 hrs.)*
ARTS 860 Spcl. Prob. in Printmaking—Intaglio.....1–5
ARTS 862 Spcl. Prob. in Printmaking—Lithography, Black & White.....1–5
ARTS 863 Spcl. Prob. in Printmaking—Lithography, Color.....1–5
*Studio—Minor .....(complete 12 hrs.)*
ARTS 800_ Seminar in Art Topics .....3
ARTS 800I Galleries & Exhibitions .....3
ARTS 830 Special Prob. in Photo Media ...1–3
ARTS 840 Special Prob. in Life Drawing ..1–3
ARTS 845 Special Problems in Drawing...1–3
ARTS 850 Special Problems in Painting....1–5
ARTS 870 Special Problems in Ceramics..1–5
ARTS 875 Advanced Research of Ceramic Materials .....3
ARTS 876 Advanced Study of Ceramic Glazes .....3
ARTS 880 Special Problems in Sculpture .1–5
*Terminal Project .....(10 hrs.)*
ARTS 868 Terminal Project—Printmaking...5
ARTS 869 Terminal Project—Printmaking...5

***MFA Studio Arts—Sculpture***
*Studio—Emphasis .....(complete 23 hrs.)*
ARTS 880 Special Problems in Sculpture
*Studio—Minor .....(complete 12 hrs.)*
ARTS 800_ Seminar in Art Topics .....3
ARTS 800I Galleries & Exhibitions .....3
ARTS 830 Special Prob. in Photo Media ...1–3
ARTS 840 Special Prob. in Life Drawing ..1–3
ARTS 845 Special Problems in Drawing...1–3
ARTS 850 Special Problems in Painting....1–5
ARTS 860 Spcl. Prob. in Printmaking—Intaglio.....1–5
ARTS 862 Spcl. Prob. in Printmaking—Lithography, Black & White.....1–5
ARTS 863 Spcl. Prob. in Printmaking—Lithography, Color.....1–5
ARTS 870 Special Problems in Ceramics..1–5
ARTS 875 Advanced Research of Ceramic Materials .....3
ARTS 876 Advanced Study of Ceramic Glazes .....3
*Terminal Project .....(10 hrs.)*
ARTS 888 Terminal Project—Sculpture.....5
ARTS 889 Terminal Project—Sculpture.....5

The terminal project consists of an exhibition of original studio artwork, accompanied by the MFA terminal project report, which is a documentation of the candidate's studio work (slides, video, photographs, CD), a written statement, and a resume.

***Plan of Study.*** In order to define a program of study for the graduate degree, students must submit the Graduate Plan of Study form leading to admission to candidacy for the degree no later than one month following the completion of 24 credit hours of graduate credit.

***Assessment Reviews and Examinations.*** ***First Year Review.*** At the end of the second semester, degree candidates must submit materials including digital portfolio, resume, proposed plan of study, and narrative self-evaluation for review by graduate faculty in the studio emphasis area. Quality of studio work, engagement with the program of study, and academic standing are assessed.

***Mid-Program Review.*** At the end of the third semester, degree candidates must present materials including digital images of studio research, bibliography of relevant source material, and self-evaluation addressing issues of content, technique and contextual basis for review by graduate faculty participating in the MFA review process. Quality of studio work, scholarly engagement, academic standing, and progress toward terminal project proposal are assessed.

***Terminal Project Proposal Review.*** At the end of the fourth semester or before enrollment in Terminal Project courses, degree candidates must satisfactorily complete the review with graduate faculty participating in the MFA review process. Quality of studio work, academic standing and ability to begin terminal project are assessed. If the proposal review is successful, the terminal project faculty committee is determined. In the event that the proposal is not accepted, the faculty recommends that the candidate either (1) Revise the proposal for a second and final review, or (2) The student is moved to nondegree status. Eligibility for the review and enrollment in the Terminal Project coursework requires good academic standing with an overall GPA no lower than 3.000. Any exception must be approved by a majority of graduate faculty participating in the MFA review process.

***Terminal Project Progress Review.*** At the end of the fifth semester, degree candidates must satisfactorily complete the review with the terminal project faculty committee. Academic standing and progress toward successful completion of terminal project are assessed.

***Terminal Project Review.*** During the semester in which the degree is to be conferred, degree candidates must satisfactorily complete two reviews with the terminal project faculty committee. At or near midterm, final plans, anticipated studio work and artist statement for the terminal project exhibition are assessed. Prior to the public presentation of the terminal project exhibition, the oral examination is conducted. Quality of the terminal project and oral examination are assessed. If the examination is successful, the committee recommends the candidate to the Graduate School for degree conferral.

***Transfer of Credit.*** All graduate credit accepted for transfer will be at the discretion of the departmental advisor and graduate coordinator and must meet the transfer of credit conditions of the

Graduate School. A maximum of 24 credit hours from prior graduate study may be considered for transfer to the MFA program. Final determination of transfer will be made after the student has successfully completed 12 credit hours at WSU and the first graduate review. A maximum of 12 credit hours can be applied to the emphasis. If a transfer of credit is allowed, it may reduce course requirements but not entrance requirements. A ruling on hours converted to the MFA program by the dean of the Graduate School, graduate coordinator, and the emphasis faculty is final. Graduate nondegree work obtained before admission to a planned degree program will not be accepted.

***Required Prerequisite.*** Students who have not been accepted to degree standing in the MFA—studio program may enroll in 800-level courses only with written consent of the course faculty and graduate coordinator.

## Policy On Retention of Student Work

Conforming to College Art Association MFA Standards Guidelines, retention of student work without compensation is not required.

### Courses for Graduate/Undergraduate Credit

**ARTS 515. Studio Art Internship (1-3).** Students design an internship experience with an organization or individual approved by a faculty mentor. Internship is paired with research into a related topic, research paper and subsequent public presentation. Students may pursue topics & experiences related to any ARTS concentration. Repeatable for credit. *Course contains diversity content.* Prerequisite: ARTS 312 or instructor's consent.

**ARTS 525. Advanced Electronic Media (3).** Focus on further development of thematic content, creative problem solving, and producing original artwork that makes a personal artistic statement. Exploration of the field through presentations and/or research papers. Repeatable for credit. Prerequisites: ARTS 322, instructor's consent.

**ARTS 535. Advanced Photo Media (3).** Focus on further development of thematic content, creative problem solving, and producing original artwork that makes a personal artistic statement. Exploration of the field through presentations and/or research papers. Repeatable for credit. Prerequisites: ARTS 335, instructor's consent.

**ARTS 545. Advanced Drawing Studio (3).** Independently-defined projects and directions in drawing and drawing-related media toward development of a drawing practice, process or portfolio. Research, readings and/or lectures investigating historical, contemporary and applied approaches to drawing in both fine art and popular applications. Repeatable for credit. Prerequisite: ARTS 345.

**ARTS 549. Independent Study in Drawing (1–3).** A professional emphasis on technical or aesthetic research in the drawing area. Available only for the advanced drawing student with instructor's consent. Statement of intent must be submitted for faculty approval before registration. Prerequisites: ARTS 340, 345, instructor's consent.

**ARTS 553. Independent Study in Painting (1–3).** A professional emphasis on technical or aesthetic research in the painting area. Available only for the advanced painting student with instructor's consent. Statement of intent must be submitted for faculty approval before registration. Prerequisite: departmental consent.

**ARTS 554. Advanced Painting (3).** Focus on further development of thematic content, creative problem solving and producing original artwork that makes a personal artistic statement. Exploration of the field through presentations and/or research papers. Repeatable for credit. Prerequisites: 6 hours from ARTS 354, 356, 358; instructor's consent.

**ARTS 560. Advanced Printmaking (3).** Focus on further development of thematic content, creative problem solving, and producing original artwork that makes a personal artistic statement. Exploration of the field through presentations and/or research papers. Repeatable for credit. Prerequisites: ARTS 369, instructor's consent.

**ARTS 565. Independent Study in Printmaking (1–3).** A professional emphasis on technical and aesthetic research in the printmaking area. Only for the advanced printmaking student with instructor's consent. Statement of intent must be submitted for faculty approval before registration. Prerequisite: departmental consent.

**ARTS 570. Advanced Ceramics Studio (3).** Focus on further development of thematic content, creative problem solving, and producing original artwork that makes a personal artistic statement. Exploration of the field through presentations and/or research papers. Repeatable for credit. Prerequisites: ARTS 373, instructor's consent.

**ARTS 578. Independent Study in Ceramics (1–3).** A professional emphasis on technical or aesthetic research in the ceramics field. Available only for the advanced ceramics student with instructor's consent. Statement of intent must be submitted for faculty approval before registration. Prerequisite: departmental consent.

**ARTS 580. Advanced Sculpture (3).** Focus on further development of thematic content, creative problem solving, and producing original artwork that makes a personal artistic statement. Exploration of the field through presentations and/or research papers. Repeatable for credit. Prerequisites: ARTS 380 and instructor's consent.

**ARTS 585. Independent Study in Sculpture (1–3).** A professional emphasis on technical or aesthetic research in the sculpture area. Available only for the advanced sculpture student with instructor's consent. Statement of intent must be submitted for faculty approval before registration. Prerequisites: ARTS 282, 283, departmental consent.

**ARTS 590. SlowBurn Topics First Semester (3).** Course travel fee may apply. Long-term projects consisting of experiential coursework whose planning and implementation extend across two successive semesters, with the first semester course typically devoted to research and planning. Requires enrollment in consecutive semesters of a single sequence of two SlowBurn Topics courses. Repeatable for credit. Graded *Cr/NCr*. Prerequisites: ARTF 202; senior standing in an ARTS major or instructor's consent.

**ARTS 591. SlowBurn Topics Second Semester (3).** Course travel fee may apply. Long-term projects consisting of experiential coursework whose planning and implementation extend across two successive semesters, with the second semester course typically devoted to the experience researched and planned in the first semester SlowBurn Topics course. Requires enrollment in consecutive semesters of a single sequence of two SlowBurn Topics courses. Repeatable for credit. Prerequisite: ARTF 202; approved ARTS 590 in sequence; senior standing in an ARTS major or instructor's consent.

**ARTS 595. Galleries and Exhibitions (3).** Professional, practical, theoretical aspects of managing, organizing, marketing, funding and designing art exhibitions through installations in student art galleries, readings and lectures. Includes experiential assignments. Repeatable for credit. Prerequisite: ARTF 202 or faculty approval.

**ARTS 790. Graduate Teaching Seminar (1).** Discussion seminar for graduate students already teaching or intending to teach. Meets six to eight times per semester. Class format is discussion. Students participate in discussions, read articles and essays, create teaching philosophy, create academic portfolio. Not repeatable for credit. Graded *S/U*.

### Courses for Graduate Students Only

**ARTS 800. Seminar in Art Topics (3).** Explores areas of common interest in the arts. Supervised study, research and discussion. Repeatable for credit.

**ARTS 830. Special Problems in Photo Media (1–5).** Introduces and develops advanced research methods in photography and related media through broad-based material/conceptual experimentation, personal expression, formal resolution, and theoretical grounding. Techniques include the spectrum of photographic processes, including traditional digital or analog photography, video, appropriation of imagery, experimental/antiquated techniques, etc. As students progress through the program, expectations shift to more deeply engaged and narrowly focused studio research in preparation for, and in support of, the terminal project. Scholarly research that augments the artistic practice is expected in the form of readings of pertinent literature, discussions in small-group and seminar formats, field studies, etc. Course meets program requirements for studies in the graduate photo media major. Majors in other areas may take this course to fulfill requirements for the minor area. Repeatable for credit and may be taken for 1–5 hours, based on the scope and nature of specific research interests, as determined by the area head, in consultation with the student and the student's primary advisor.

**ARTS 838. Terminal Project—Photo Media (1–5).** As the first part of the culmination of the 60-hour MFA degree, this course emphasizes original studio research in areas related to photo media in preparation of the terminal project exhibition. While the terminal project is offered in lieu of thesis, it is expected that MFA candidates engage in scholarly research and writing in support of their studio practice. Repeatable for credit. Prerequisite: successful completion of the terminal project review and instructor's consent.

**ARTS 839. Terminal Project—Photo Media (1–5).** As the culmination of the 60-hour MFA degree, this course focuses on the production of the terminal project exhibition. The terminal project is offered in lieu of thesis, but is accompanied by a written statement outlining the conceptual premise, historical and contemporary contexts, and/or technical aspects of the work. Repeatable for credit. Prerequisite: ARTS 838.

**ARTS 840. Special Problems in Life Drawing (1–3).** Drawing from life. Requires sketchbooks and/or portfolio. Repeatable for credit.

**ARTS 845. Special Problems in Drawing (1–3).** Advanced drawing in various media emphasizing independent work and the development of personal expression. Repeatable for credit.

**ARTS 850. Special Problems in Painting (1–5).** Professional and experimental painting emphasizing the development of maturity, ideas, independent thinking and personal expression. Media include oil, watercolor and synthetic media. Repeatable for credit with the consent of the drawing/painting faculty.

**ARTS 858–859. Terminal Project—Painting (1–5; 1–5).**

**ARTS 860. Special Problems in Printmaking—Intaglio (1–5).** Advanced printmaking on an individual basis. Gives encouragement to investigation, combined with a craftsman-like approach. Techniques include all intaglio, relief, and combined methods, black and white, and color. Repeatable for credit.

**ARTS 862 & ARTS 863. Special Problems in Printmaking—Lithography (1–5; 1–5).** Advanced printmaking on an individual basis. Gives encouragement to investigation, combined with a craftsman-like approach. Includes lithography and allied techniques, black and white, and color. Repeatable for credit.

**ARTS 868–869. Terminal Project—Printmaking (1–5; 1–5).**

**ARTS 870. Special Problems in Ceramics (1–5).** Research in advanced problems in ceramics. Repeatable for credit.

**ARTS 875. Advanced Research of Ceramic Materials (3).** Lectures and advanced research covering clays, glazes and refractory materials. Reading assignments concerning physical and chemical characteristics of pottery materials. Requires notebook and outside lab work.

**ARTS 876. Advanced Study of Ceramic Glazes (3).** The study of glaze formulation and the color and crystalline effects of oxides on base glazes. Requires notebook, advanced formulation records, and laboratory work. Prerequisite: ARTS 875.

**ARTS 878–879. Terminal Project—Ceramics (1–5; 1–5).**

**ARTS 880. Special Problems in Sculpture (1–5).** Advanced sculpture emphasizing experimentation and high-quality work on an individual basis. Stresses special projects in casting architectural sculpture, mixed media, or new materials and techniques. Repeatable for credit.

**ARTS 888–889. Terminal Project—Sculpture (1–5; 1–5).**

**ARTS 895. Professional Practices in Studio Art (2).** Research into and practical application of professional practices, business skills and career planning specific to the discipline of studio art. Provides a foundation of practical information to assist the graduate studio art major in building a successful professional career. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership when taken in conjunction with appropriate terminal project course. Not repeatable for credit.

# School of Music

Russell D. Widener, *director*
Aleksander Sternfeld-Dunn *coordinator, graduate studies*

Graduate degree programs in the School of Music are designed to extend and broaden the professional competency of men and women desiring careers in music. Students may pursue graduate studies in chamber music, conducting, history-literature, music education, pedagogy, performance and composition. While providing for advanced training in the specific skills of music, these graduate programs help to cultivate the student's capacity to think—to consider impersonally, dispassionately and without prejudice any problem related to the art of music.

## Music Education (MUSE)

**Graduate Faculty**
*Professors*: Elaine Bernstorf, John Paul Johnson, Thomas Wine
*Associate Professor:* Steve Oare

### Master of Music Education

The Master of Music Education (MME) program allows for concentrations in choral music, elementary music, instrumental conducting, instrumental music (with recital option), music in special education, and voice. Conducting option may be elected (with approval) in the choral program.

#### *Admission Requirements*

Admission to the degree program in music education requires the completion of a Bachelor of Music Education (BME) degree, or the equivalent of a BME, from an accredited institution. Students holding bachelor's degrees in music other than the Bachelor of Music Education must satisfy public school certification requirements to qualify for full admission. Applicants without such certification are admitted on a conditional basis pending their attainment of public school teaching credentials. Approval of the MME specialization must be acquired.

#### *Degree Requirements*

MME programs range from 32 to 36 hours. Course requirements for the MME are outlined below. Core requirements and terminal project options are the same for each emphasis area unless specifically noted.

*Core Requirements* ..... *(15 hrs.)*
MUSE 853 Research Design and Methods .... 3
MUSE 855 Psychology of Music Ed. ..... 3
MUSE 871 History & Philosophy of Music Education ..... 3
MUSC 830 Seminar in Music Theory ..... 3
Choose one course from the following
MUSC 891 Seminar in Music History pre-1750 ..... 3
MUSC 892 Seminar in Music History post-1750 ..... 3
*Terminal Project Options—Choose one (2–6 hrs.)*
MUSP 873 Graduate Recital ..... 2
MUSE 844 Terminal Conducting Project ..... 2
MUSE 875 & 876 Thesis Research & Thesis ... 4
MUSE 854 Terminal project ..... 3
*Other option—Extra Hours* ..... *6*
To be selected in consultation with advisor and approved by the area director. This excludes applied, ensemble, workshops and special project hours.

***MME—Choral Music* ..... *(32–36 hrs.)***
*Field Specialty* ..... *(6–7 hrs.)*
MUSE 790C Choral Rehearsal Techniques..... 2
MUSP 691 Advanced Choral Conducting..... 2
(If a student has had this course previously at WSU, a 2-hour 790 Special Topics in conducting may be substituted.)
*and* 2–3 hours from the following
MUSE 732 Instructional Methods in Middle Level/Secondary Music ..... 2
MUSC 753 Choral Literature I (Renaissance, Baroque) ..... 2
MUSC 754 Choral Literature II (Classical, Romantic and Contemporary)..... 2
*Electives* ..... *(8–9 hrs.)*
Must be approved by faculty advisor or graduate coordinator. May apply up to 5 hours of applied lessons, 2 hours of ensemble credit, 4 hours of workshops or 10 hours of Kodály coursework.

***MME—Elementary Music* ..... *(32–36 hrs.)***
*Field Specialty ..... 6–8 hours from the following*
MUSE 821 Leadership and Administration in Music Ed..... 3
MUSE 831 Developing the Child's Musical Understanding ..... 3
MUSE 617 Literacy Strategies for Content Areas: Music..... 2
*Electives* ..... *(7–9 hrs.)*
May include specialization in Kodály or other courses selected in consultation with faculty advisor and with approval of graduate coordinator.

***MME—Instrumental Conducting* ..... *(32 hrs.)***
*Field Specialty .....8 hours from the following*
MUSP 790C Special Topics: Conducting..... 2
MUSP 790R Special Topics: Score Analysis ... 2
MUSP 790AD Special Topics: Rehearsal Techniques..... 2
MUSP 790K Special Topics: Performance Practicum..... 2
*Electives* ..... *(7 hrs.)*
Must be approved by faculty advisor or graduate coordinator. May apply up to 4 hours of workshops, 3 hours of ensemble credit, or 4 hours of applied lessons.
*Terminal Project*
MUSE 844 Terminal Conducting Project ..... 2

***MME—Instrumental Music* ..... *(32–36 hrs.)***
A minimum of 10 hours outside MUSE courses is required.
*Field Specialty .....6 hours from the following*
MUSE 686 Marching Band Techniques..... 2
MUSE 790B Band Rehearsal Techniques..... 2
MUSE 732 Instructional Methods in Middle Level/Secondary Music ..... 2
MUSE 785 Instrumental Music Organization and Administration..... 2
MUSE 821 Leadership and Administration in Music Education..... 3
MUSE 845A Seminar in Instrumental Music Education Literature ..... 2

MUSP 651 Advanced Conducting and Score Reading ..... 2
Students who do not take MUSP 651 must take a minimum of one elective credit outside of MUSE courses.

*Electives* ..... *(9 hrs.)*
Must be approved by faculty advisor or graduate coordinator. May apply up to 5 hours of applied lessons, 2 hours of ensemble credit, 4 hours of workshops or 10 hours of Kodály coursework.

***MME—Music in Special Education, (32–36 hrs.)***
*Field Specialty ..... 6–8 hours from the following*
MUSE 611 Music for Special Education ..... 2
MUSE 822 Advanced Techniques in Special Music Education ..... 3
MUSE 823 Special Music Education Practicum ..... 3
*Electives* ..... *(7–9 hrs.)*
Must be approved by faculty advisor or Graduate Coordinator. May apply up to 5 hours of applied lessons, 2 hours of ensemble credit, 4 hours of workshops or 10 hours of Kodály coursework.
*Note*—A recital is not a terminal project option for this emphasis area.

***MME—Voice ..... (32–36 hrs.)***
A minimum of 10 hours of MUSE courses is required.
*Field Specialty ..... 6–7 hours from the following*
MUSP 625 Voice Pedagogy ..... 2
MUSP 725 Voice Pedagogy II ..... 2
MUSC 623 Opera Literature ..... 3
MUSC 624 Oratorio and Cantata Literature .. 2
MUSC 726 Voice Literature ..... 3
*Electives* ..... *(9 hrs.)*
Must be approved by faculty advisor or graduate coordinator. May apply up to 5 hours of applied lessons, 2 hours of ensemble credit, 4 hours of workshops or 10 hours of Kodály coursework.
*Note*: A minimum of 4 hours must be from MUSE 500+ courses.

### Courses for Graduate/Undergraduate Credit

**MUSE 511. Jazz Pedagogy (2).** For both music education and music performance majors interested in teaching improvisation, jazz history, and large and small jazz ensembles. Includes a review of current jazz methods and materials, rehearsal techniques for jazz ensembles, how to listen to jazz, lectures by visiting jazz performers, and effective jazz programming. Prerequisite: MUSC 228 or instructor's consent.

**MUSE 606. Music Methods for Early Childhood Education (2–3).** Methods and materials for teaching music in the preschool and kindergarten classroom. Includes the development of the child's musical growth through singing, listening, rhythmic and creative activities; a survey of available materials, and development of playing, singing and conducting skills.

**MUSE 611. Music for Special Education (2).** Open to upper-division or graduate students and intended for the potential practicing music teacher, classroom teacher or special education teacher. Includes identification of dysfunctioning children and their problems and current theory and practices in special music education. Satisfies the requirement, effective September 1, 1981, that applicants for initial certification or renewal of secondary and/or elementary certification shall present a survey course, or equivalent content from other courses, in the subject area of exceptional children. This provision applies to initial certification and recertification of music teachers only, grades K–12.

**MUSE 617. Literacy Strategies for Content Areas: Music (2).** Covers principles and strategies used in effective instruction, including vocabulary development and comprehension skills needed to more fully read to learn in content areas. Students receive training to use the six-trait analytical rating guide for assessing writing, which is the method used to score the Kansas state writing assessment. Students develop lessons and assessments appropriate for a comprehensive literacy-based music program based on national and state music standards representing appropriate and varied music education philosophies. Prerequisite: instructor's consent.

**MUSE 686. Marching Band Techniques (2).** A systematic approach to the marching band with regard to organization, show development, instrumentation, music adaptation, drill construction and script development. Teaches both traditional drill and corps-style marching using manual methods and computer generated graphics. Field observations, films, photographs, and live performances by marching bands complement the class syllabus. Required for all instrumental majors.

**MUSE 732. Instructional Methods in Middle Level/ Secondary Music (2).** Includes administrative structures, the curriculum, adolescent development, teaching as behavior and competencies needed for successful teaching of general, choral and instrumental music for adolescent learners.

**MUSE 750. Music Education Workshop (1–4).** Repeatable for credit.

**MUSE 761. Kodály Methods Level One (3).** Kodály curriculum designed for grades K–1. Transcriptions of 50 folk songs with teaching activities appropriate for young learners. Introduction of music literacy components. Concurrent enrollment with MUSE 762 recommended.

**MUSE 762. Kodály Solfege Level One (2).** Includes one- and two-part materials in major and minor tonalities. Demonstrated ability to conduct folk song literature appropriate for beginning singers. Prerequisite: prior or concurrent enrollment in MUSE 761.

**MUSE 763. Kodály Methods Level Two (3).** Kodály curriculum designed for grades 2–4. Song analysis for 50 additional folk songs and appropriate literacy activities for general music programs. Added emphasis on folk dance and listening lessons for masterworks. Prerequisites: MUSE 761, 762 or instructor's consent. Concurrent enrollment with MUSE 764 recommended.

**MUSE 764. Kodály Solfege Level Two (2).** Adds chromatic, whole tone and modes. Demonstrated ability to conduct folk song literature up to four parts. Prerequisite: MUSE 762.

**MUSE 765. Kodály Methods Level Three (3).** Kodály curriculum designed for grades 4–12. Expansion of song repertoire with emphasis on activities which develop choral singing independence and music theory skills. Prerequisites: MUSE 763, 764 or instructor's consent. Concurrent enrollment with MUSE 766 recommended.

**MUSE 766. Kodály Solfege Level Three (2).** Includes advanced materials from a variety of literature. Demonstrated ability to conduct expanded literature appropriate for public and private school choral programs. Prerequisites: MUSE 762, 764.

**MUSE 767. Kodály Applications (2).** Provides individually supervised research and application opportunities for the advanced student who has completed an OAKE endorsed Kodály certification program. Repeatable for credit. Prerequisites: MUSE 761, 762, 763, 764, 765, 766, or OAKE endorsed Kodály certification.

**MUSE 781. Cooperative Education (1–8).** A field placement which integrates coursework with a planned and supervised professional experience designed to complement and enhance the student's academic program. Individualized programs must be formulated with, and approved by, appropriate faculty sponsors and cooperative education coordinators. May be repeated for credit. Graded *Cr/NCr*. *Note*: a maximum of 4 *S/U* or *Cr/NCr* hours may be counted toward a graduate degree and must be taken in consultation with the graduate advisor for an approved graduate plan of study. Prerequisite: satisfactory academic standing prior to the first job assignment.

**MUSE 785. Instrumental Music Organization and Administration (2).** Problems of developing school instrumental music programs.

**MUSE 790. Special Topics in Music (1–4).** For individual or group instruction. Individual study enrollment requires departmental consent. Repeatable with departmental consent.

### Courses for Graduate Students Only

**MUSE 821. Leadership and Administration in Music Education (3).** Investigates research and strategies in music education relating to communication, classroom management, current trends, and teaching and learning styles. Includes teacher assessments and evaluation issues.

**MUSE 822. Advanced Techniques in Special Music Education (3).** For special music education MME candidates only. Studies research literature and trends in special music education. Includes an evaluation of materials and techniques and special projects exploring the development of musical understanding in the dysfunctioning child. Course satisfies the requirement, effective September 1, 1981, that applicants for initial certification or renewal of secondary and/or elementary certification shall present a survey course, or equivalent content from other courses, in the subject area of exceptional children. This provision applies to initial certification and recertification of music teachers only. Prerequisite: MUSE 403 or 404.

**MUSE 823. Special Music Education Practicum (3).** For special music education MME candidates only. Supervised teaching in special education classrooms. A companion course to MUSE 822; gives the MME special education candidate experience in teaching in special education classrooms. Pre- or corequisite: MUSE 822.

**MUSE 831. Developing the Child's Musical Understanding (3).** Definition of understandings necessary for the attainment of musical awareness in the child. Directs the exploration of classroom experiences toward the successful development of understanding through the application of basic learning principles. Prerequisite: MUSE 403.

**MUSE 841. Special Project in Music (1–3).** Individually supervised study or research emphasizing the student's personal needs. Repeatable for credit. Prerequisite: instructor's consent.

**MUSE 842. Special Project in Music (1–3).** Individually supervised study or research emphasizing the student's

personal needs. Repeatable for credit. Prerequisite: instructor's consent.

**MUSE 844. Terminal Conducting Project (2).** Individually supervised project for those accepted for the conducting option in the instrumental or choral emphasis under the MME degree. Prerequisites: instructor's and departmental consent.

**MUSE 845A. Seminar in Instrumental Music Education Literature (2).** Critical analysis of literature for band, orchestra, and small ensembles in elementary and secondary schools. Uses current bibliography. Repeatable for credit.

**MUSE 851. Psychology of Music (2).** An overview of music behaviors from a psychological perspective. Relates recent literature concerning human psychoacoustics, melodic, rhythmic, and harmonic perception, and major learning theories to current trends in music education.

**MUSE 853. Research Design and Methods (3).** Includes historical, philosophical, qualitative, quantitative, meta-analysis and action research. Prepares graduate students to reflectively analyze research related to learning theory, curriculum and administrative topics associated with relevant arts education applications. Prerequisite: graduate status.

**MUSE 854. Terminal Project in Music Education (3).** Continued application of techniques of research. Requires the completion of a major research project. May be selected as the MME terminal requirement for specified programs. Prerequisite: MUSC 852.

**MUSE 855. Psychology of Music Education (3).** An overview of music behaviors from a psychological perspective. Relates recent literature concerning human psychoacoustics, melodic, rhythmic, and harmonic perception, and major learning theories to current trends in music education.

**MUSE 871. History and Philosophy of Music Education (3).** A study of historical trends and contemporary philosophies relevant to music education. Prerequisite: MUSE 851.

**MUSE 875. Thesis Research (1–2).**

**MUSE 876. Thesis (2).**

## Master of Music

The School of Music offers the following Master of Music degrees: MM in conducting, MM in history-literature, MM in opera performance, MM in piano pedagogy, MM in composition, and MM in performance. Within our MM in performance degree, we have concentrations in chamber music and piano accompanying, and emphases in organ, piano, strings/wind/percussion, and voice.

### *Admission Requirements*

Admission to the MM program requires the completion of an accredited music bachelor's degree that includes a minimum of 60 credit hours in music, with at least 24 hours in basic music studies (history and theory) and 15 hours in a major specialty. Approval of the MM concentration must be acquired during the first semester of enrollment. There may be additional requirements for admission in some programs. Please contact the director of the relevant area for details.

### *Degree Requirements*

The MM degree requires completion of a minimum of 32 graduate credit hours, including a thesis or recital as indicated for the respective concentration. Of these hours, 60 percent must be in courses numbered 700 or above. Each plan of study must include 12 credit hours in the MM core requirement, including:

*MM Core Requirements* ..... *hrs.*
MUSC 852 Intro. to Bibliography & Research .....3
MUSC 830 Seminar in Music Theory .....3
*History and Theory ( 6 additional hrs.)*
MUSC 832 Topics in Music Analysis .....3
MUSC 891 Seminar in Music History pre-1750 .....3
MUSC 892 Seminar in Music History post-1750 .....3
*Total Core Hours* .....*(12 hrs.)*

### *Examinations*

All degree candidates in the School of Music must pass an oral comprehensive examination. The oral comprehensive examination for thesis candidates includes a thesis defense.

Please view the specific area descriptions below for details on the individual area requirements.

## Music Performance (MUSP)

**Graduate Faculty**

*Professors*: Julie Bees, Mark Foley, Marie King, Mark Laycock, Pina Mozzani, Russell D. Widener (director, School of Music)

*Associate Professors:* Catherine Consiglio, Lynne Davis, Alan Held, Gerald Scholl, Andrew Trechak (director, keyboard studies)

*Assistant Professors:* Alla Aranovskaya, Andrea Banke, Phillip Black, Geoffrey Deibel, William Flynn, John Goering, Michael Hanawalt, David Hunsicker, Sarunas Jankauskas, Stephanie Patterson, Justine Sasanfar, Leonid Shukaev

### Master of Music (MM) Degree Programs

### MM—Performance

### *Additional Requirements for Admission*

Admission to the MM program in performance requires a performance background, with a Bachelor of Music degree in the performance area of specialization or the equivalent of the BM. Background deficiencies must be satisfied before admission to candidacy. All performance degree candidates must complete a satisfactory audition in their performance area of specialization. The audition should be completed as early as possible—but no later than the end of the first semester of enrollment. Permission to pursue the degree emphasis is tentative pending approval of the respective performance faculty.

### *Degree Requirements*

A formal graduate recital, in lieu of a thesis, must be presented in partial fulfillment of the requirements for the MM degree with emphasis in performance. In order to receive permission to schedule a degree recital, students must satisfy the expectations of the respective performance area. Recital permission must be obtained no later than the semester before the semester in which the recital is to be performed. The student's performance repertoire and the recital program must be in accordance with the guidelines and expectations established by the respective performance area.

Students studying for the MM degree with emphasis in performance should plan to be in residence during at least one fall or spring semester, since continuous study opportunities may not exist in summer session.

The Master of Music Performance degree requires 32 credit hours, and offers emphases in organ, piano, strings/wind/percussion, and voice. Below are the requirements for these emphases, in addition to the core requirements for the MM program.

***Organ***

*Graduate Organ Study—10 credit hours of instruction in major medium*
MUSA 732M Applied Music Instruction (repeatable)
MUSA 734M Applied Music Instruction (repeatable)
*Support Courses*
MUSC 587 Organ Literature and Design I.....2
MUSC 588 Organ Literature and Design II ...2
MUSP 596 Organ Pedagogy .....2
MUSP 599 Organ Keyboard Skills, Service Playing and Accompanying.....2
*Graduate Recital*
MUSP 873 Graduate Recital.....2

***Piano***

*Graduate Piano Study—10 credit hours of instruction in major medium*
MUSA 732P Applied Music Instruction (repeatable)
MUSA 734P Applied Music Instruction (repeatable)
*Support Courses*
MUSP 580 Piano Pedagogy.....2
MUSC 782 Piano Literature: 16th/18th Century .....2
MUSC 783 Piano Literature: 19th/20th Century .....2
*Electives* .....2
Music or nonmusic courses 500 or above; may include applied lessons, ensembles, languages, etc. Courses must be approved by faculty advisor.
*Graduate Recital*
MUSP 873 Graduate Recital.....2

***Strings/Wind/Percussion***

*Graduate Performance Study—10 credit hours of instruction in major medium*
MUSA 732__ Applied Music Instruction (repeatable)
MUSA 734__ Applied Music Instruction (repeatable)

*Small Chamber Ensemble —Audition required—2 hours from the following*
MUSP 710__, MUSP 711__, MUSP 712__, MUSP 713__, MUSP 714__
(A) Orchestra, (B) Symphonic Wind Ensemble or Concert Band, (J) Piano Accompaniment, (M) Jazz Combo, (N) Woodwind Ensemble, (O) Saxophone Quartet, (P) Brass Chamber Ensemble, (R) Percussion Ensemble, (S) String Ensemble and String Chamber Ensemble, (T) Jazz Arts Ensembles I and II, (V) Guitar Ensemble, (X) New Music Ensemble. Repeatable for credit.
*Electives* ..... *6*
Music or nonmusic courses 500 or above; may include applied lessons, ensembles, languages, etc. Courses must be approved by faculty advisor.
*Graduate Recital*
MUSP 873 Graduate Recital..... 2

***Voice***
*Graduate Voice Study—10 credit hours of instruction in major medium*
MUSA 732Y Applied Music Instruction (repeatable)
MUSA 734Y Applied Music Instruction (repeatable)
*Other*
MUSP 625 Voice Pedagogy..... 2
MUSC 726 Voice Literature..... 3
*Electives*
Music or nonmusic courses 500 or above; may include applied lessons, ensembles, languages, etc. Courses must be approved by faculty advisor
Recommended Electives
MUSC 623 Opera Literature..... 3
MUSC 624 Oratorio and Cantata Literature.. 2
MUSP 725 Voice Pedagogy ll ..... 2
MUSP 711E Opera Lab ..... 1
*Graduate Recital*
MUSP 873 Graduate Recital..... 2

## MM—Chamber Music Concentration

In addition to the core requirements for all MM programs, students must complete the coursework listed below. The program requires a total of 32 hours.

*Graduate Performance Study—10 hours of instruction in major medium*
MUSA 732__ Applied Music Instruction (repeatable)
MUSA 734__ Applied Music Instruction (repeatable)
*Chamber Music Ensemble—Choose from the following* ..... *4*
MUSP 710_, MUSP 711_, MUSP 712_, MUSP 713_, MUSP 714 (audition required)
(J) Piano Accompaniment, (N) Woodwind Ensemble, (O) Saxophone Quartet, (P) Brass Chamber Ensemble, (S) String Ensemble and String Chamber Ensemble, (X) New Music Ensemble. Repeatable for credit.
*Other Required Coursework*
MUSC 786 Chamber Music Lit 1..... 2
MUSC 787 Chamber Music Lit 2..... 2
*Graduate Recital*
MUSP 873 Graduate Recital..... 2

## MM—Instrumental Conducting Concentration

The MM in instrumental conducting is designed to accommodate a small number of students (up to four per year) who receive extensive individualized conducting preparation with the university's resident band and orchestra conductors. Candidates have rehearsal/conducting opportunities with both large and small ensembles.

In addition to the core requirements for all MM concentrations, the program culminates in a conducting recital using university students and ensembles. Metropolitan or ad hoc ensembles may be substituted with faculty approval.

### *Admission Requirements*

Students must have completed a baccalaureate degree in music. Contingent upon admission into the conducting program, all candidates must (1) complete a satisfactory conducting audition conducting a university ensemble with the approval of the appropriate conducting faculty member; (2) complete a satisfactory audition on their primary performing instrument with the appropriate applied faculty member; (3) submit a score analysis of a major work; and (4) schedule a personal interview.

### *Degree Requirements*

In addition to the core requirements for all MM programs, students must complete the coursework listed below. The program requires a total of 32 hours.

*Approved Electives* ..... *6*
Music or nonmusic courses 500 or above; May include applied lessons, ensembles, languages, etc. Courses must be approved by faculty advisor
*Approved Ensembles—Conducting observation laboratories assigned by major advisor* ..... *4*
MUSP 710B Symphonic Wind Ensemble (repeatable)
MUSP 711A Orchestra (repeatable)
MUSP 713B Concert Band (repeatable)
*Other Requirements*
MUSP 790C Special Topics: Conducting..... 2
MUSP 790R Special Topics: Score Analysis ... 2
MUSP 790K Special Topics: Performance Practicum..... 2
MUSP 790AD Special Topics: Rehearsal Techniques..... 2
*Graduate Conducting Recital* ..... *2*
MUSP 873 Graduate Recital (repeatable)

## MM—Opera Performance Concentration

This degree program is designed to provide specialized training in opera performance with graduates gaining more experience and training in all phases of opera production. While the MM in vocal performance degree provides for some experience with opera performance, the opera concentration provides greater focus with more specialized coursework, training and experience, which better prepares students who are accepted into the program to succeed in this competitive career field. The degree requires 4 more hours (total of 36) than the MM in vocal performance.

### *Additional Requirements for Admission*

Admission to the program is based on the results of a live audition and an interview with the director of the WSU Opera Theatre and voice faculty. Prior to scheduling an audition, send the following to the Director of Opera and Musical Theatre:

- Headshot and resume;
- A statement of academic and career goals; and
- A recording of 3 selections in various languages and styles.

When a live audition is not possible, a video audition will be considered. Students admitted to this program must show potential for future success and should have already had some experience with opera. Specific requirements include (1) strong operatic vocal potential; (2) good academic background with a minimum 2.750 GPA; (3) some stage experience, including a basic acting class; and (4) conversational ability in at least one of the following languages: French, German or Italian.

### *Degree Requirements*

The Master of Music (MM) degree with a concentration in opera performance requires the completion of a minimum of 36 graduate hours, including a graduate performance recital, two leading roles in opera productions, and direction and assistance in two productions. In addition to the core requirements for all MM programs, students must complete the coursework listed below.

*Graduate Voice Study—10 credit hours of instruction in major medium*
MUSA 732Y Applied Music Instruction (repeatable)
MUSA 734Y Applied Music Instruction (repeatable)
*Other Requirements—12 hours from the following*
MUSC 623 Opera Literature..... 3
MUSP 711K Opera Theatre (Repeatable) ..... 1
MUSP 712K Opera Theatre (Repeatable) ..... 2
MUSP 714K Opera Theatre (Repeatable) ..... 4
MUSP 762 Opera Styles ..... 2
MUSP 773 Acting for Singers ..... 3
*Graduate Recital*
MUSP 873 Graduate Recital..... 2

## MM—Piano Accompanying Concentration

The Master of Music (MM) degree with concentration in piano accompanying gives primary attention to the development of accompanying skills and artistry; secondary, but significant emphasis is placed on an acceptable demonstration of keyboard performance at the master's degree level. The accompanying concentration includes preparation in the area of instrumental and vocal literature in relation to the need for

piano accompaniment in the area of performance development.

***Admission Requirements***

Students must have completed a Bachelor of Music in piano performance or its equivalent. All candidates must complete a satisfactory audition early in the program—in no event later than the close of the first semester of enrollment. Permission to pursue the degree is tentative pending approval of the audition. Deficiencies, if noted, must be satisfied before admission to candidacy for the degree.

***Degree Requirements***

The Master of Music degree with a concentration in piano accompanying requires the completion of a minimum of 33 graduate hours, including two accompanied full-hour degree recitals (one vocal and one instrumental recital in either order). In addition to the core requirements for all MM programs, students must complete the coursework listed below. The program requires a total of 33 hours.

*Graduate Piano Study—12 hours from the following*
- MUSA 732P Applied Music Instruction (repeatable).....2
- MUSP 723 Applied Piano Accompanying....4
- MUSP 724 Applied Piano Accompanying....4

*Support Courses*
- MUSP 580 Piano Pedagogy.....2
- MUSC 726 Voice Literature.....3
- MUSC 685 String Literature & Materials.....2

*Graduate Recital*
- MUSP 871 Grad. Accompanying Recital.....1
- MUSP 872 Grad. Accompanying Recital.....1

## MM—Piano Pedagogy Concentration

The Master of Music (MM) degree with a concentration in piano pedagogy gives primary attention to the development of tutorial concepts specific to keyboard skills and artistry; secondary, but significant, emphasis is placed on an acceptable demonstration of keyboard performance at the master's degree level. The pedagogy option includes extensive preparation in the area of keyboard literature and stresses the relationship of performance to selected repertoire and teaching-skill development.

***Admission Requirements***

Students must have completed a Bachelor of Music in piano performance or its equivalent. All candidates must complete a satisfactory audition early in the program—in no event later than the close of the first semester of enrollment. Permission to pursue the degree is tentative pending approval of the audition. Deficiencies, if noted, must be satisfied before admission to candidacy for the degree.

***Degree Requirements***

The MM degree, piano pedagogy concentration, requires the completion (minimum) of 32 graduate hours, including a graduate degree recital or a 2-hour professional inservice presentation project (MUSP 874) as the terminal requirement. Of these hours, 20 must be in courses numbered 700–899.

*Graduate Piano Study—6 credit hours of instruction*
- MUSA 732P Applied Music Instruction (repeatable)
- MUSA 734P Applied Music Instruction (repeatable)

*Support Courses*
- MUSP 760 Group Piano Practicum.....2
- MUSP 761 Studio Piano Practicum.....2
- MUSP 843 Piano Pedagogy Seminar.....2
- MUSC 782 Piano Literature: 16th/18th Century.....2
- MUSC 783 Piano Literature: 19th/20th Century.....2

*Approved Electives*.....2
- Music or nonmusic courses 500 or above; may include applied lessons, ensembles, languages, etc. Courses must be approved by faculty advisor.

*Terminal Project—Choose One*.....2
- MUSP 873 Recital-Lecture
- MUSP 874 Professional In-service Presentation

## Applied Music—Private Study (MUSA)

### Courses for Graduate/Undergraduate Credit

**MUSA 712. Applied Music Instruction for Nonmajors (2).** Basic applied instruction for persons who are not active in a music degree program. May not be used to fulfill music degree requirements. Repeatable for credit.

**MUSA 731. Applied Music Instruction (1).** For majors only; study on secondary instruments. Basic instruction. Repeatable for credit. Graduate.

**MUSA 732. Applied Music Instruction (2).** For majors only. Repeatable for credit. Graduate.

**MUSA 734. Applied Music Instruction (4).** For performance and pedagogy majors or students preparing for master's degree recitals only. Repeatable for credit. Graduate.

Applied Music Media Designations

| | | | |
|---|---|---|---|
| A | Bassoon | P | Piano |
| B | Cello | Q | Viola da Gamba |
| C | Clarinet | R | String Bass |
| D | Euphonium | S | Trombone |
| E | Flute | T | Trumpet |
| F | French Horn | U | Tuba |
| G | Classical Guitar | V | Viola |
| J | Guitar | W | Violin |
| K | Harp | X | Saxophone |
| L | Oboe | Y | Voice |
| M | Organ | Z | Electric Bass |
| N | Percussion | | |

## Applied Music—Class Instruction

### Courses for Graduate/Undergraduate Credit

**MUSA 717W. Violin Class for Adult Beginners (2).** Beginning violin class: violin fundamentals, emphasizing tone and intonation development, basic techniques for reading (notes and rhythm). May not be applied to music major requirements. Repeatable for credit.

**MUSA 717Y. Popular Vocal Styles (2).** Class voice instruction for adults emphasizing basic vocal technique and how it can be applied for use in popular styles of singing, including vocal jazz, pop, music theatre, etc. Gives students an opportunity to explore techniques for developing their own voices and to practice singing in a supportive environment. Includes information via lecture, demonstration and listening to recordings related to stylistic differences in the popular idiom. Intended for nonmusic majors; not applicable to music degree requirements. Repeatable.

## Music Performance—General (MUSP)

### Courses for Graduate/Undergraduate Credit

**MUSP 555. Senior Project (1).** Cross-listed as THEA 555. An interdisciplinary course to showcase the talents of graduating seniors to professional producers, agents and casting directors. Students develop and produce a variety show demonstrating their talents in singing, dancing, acting, directing and choreography. For majors only. Prerequisite: instructor's consent.

**MUSP 580. Piano Pedagogy (2).** Primarily the art and science of teaching. Includes observations of master teachers in the university and community.

**MUSP 581. Piano Teaching Materials (2).** A survey of teaching methods and materials from beginning through early advanced levels.

**MUSP 596. Organ Pedagogy (2).** An approach to the art and practical aspect of teaching the organ. Includes a survey of teaching and learning methods and graded repertoire. *Course includes diversity content*. Repeatable for credit. Prerequisite: minimum of two years of applied organ study or departmental consent.

**MUSP 599. Organ Keyboard Skills, Service Playing and Accompanying (2).** Refining keyboard, sight-reading and hymn-playing skills as pertaining to the church service. Accompanying with a review of organ literature for the church service, Gregorian chant, harmonization and improvisation. *Course includes diversity content*. Repeatable for credit. Prerequisite: minimum of two years of applied organ study or departmental consent.

**MUSP 620. String Pedagogy: Violin and Viola (2).** Required for violin and viola performance majors. A study of tutorial techniques for violin and viola, including the teaching of mini-lessons for instructor and class critique. Prerequisite: violin or viola performance capability or instructor's consent.

**MUSP 625. Voice Pedagogy (2).** Acquaints the voice major with vocal techniques, concepts and materials of private and class instruction.

**MUSP 651. Advanced Conducting and Score Reading (2).** Baton technique, score reading and musicianship. Prerequisite: MUSP 307 or 308 or equivalent.

**MUSP 680. Woodwind Pedagogy (2).** A comprehensive study of woodwind instrument techniques, concepts and materials of studio instruction for the advanced student. Includes the teaching of mini-lessons for instructor and class critique. Prerequisite: performance capability on a woodwind instrument or instructor's consent.

**MUSP 681. Brass Pedagogy (2).** A comprehensive study of brass instrument techniques, concepts and materials of studio instruction for the advanced student. Includes the teaching of mini-lessons for instructor and class critique. Prerequisite: performance capability on a brass instrument or instructor's consent.

**MUSP 682. Percussion Pedagogy (2).** A comprehensive study of percussion instrument techniques, concepts and materials of studio instruction for the advanced student. Includes the teaching of mini-lessons for instructor and class critique. Prerequisite: performance capability on percussion instruments or instructor's consent.

**MUSP 691. Advanced Choral Conducting (2).** A comprehensive study of conducting and rehearsal techniques, analysis, ear training and types of choral composition for the advanced student. Prerequisite: MUSP 307 or 308 or equivalent.

**MUSP 707. Piano Repertoire (1).** Performing and listening experience for piano performance majors. Repeatable for credit.

**MUSP 710, 711, 712, 713, 714. Ensembles (0-1).** (A) Orchestra, (B) Symphonic Wind Ensemble, (D) Women's Glee Club, (E) Opera Lab, (F) A Cappella Choir, Summer Choir, Concert Chorale, (J) Piano Accompaniment, (K) Opera Theater, (L) Madrigal Singers, Chamber Singers, (M) Jazz Combo, (N) Woodwind Ensemble, (O) Saxophone Quartet, (P) Brass Chamber Ensemble, (R) Percussion Ensemble, (S) String Chamber Ensemble, (T) Jazz Arts Ensembles I and II, (U) Music Theater Performance, (V) Guitar Ensemble. Repeatable for credit. Prerequisite: audition required.

**MUSP 711E, 711K, 712K, 714K. Opera Lab (1, 1, 2, 4).** Provides the opportunity for students to gain performance experience with a major role in fully staged, high quality productions of a diverse repertory with orchestral accompaniment. Repeatable for credit. Prerequisite: audition required.

**MUSP 723. Applied Piano Accompanying (4).** Individual private study of standard accompaniment literature with preparation of a terminal project recital (either vocal or instrumental). Prerequisite: successful completion of two semesters of graduate piano study.

**MUSP 724. Applied Piano Accompanying (4).** Individual private study of standard accompaniment literature with preparation of a terminal project recital (either vocal or instrumental). Prerequisite: successful completion of two semesters of graduate piano study.

**MUSP 725. Voice Pedagogy II (2).** Builds on the basics explored in Voice Pedagogy, giving particular attention to a deeper understanding of voice science, vocal literature, pedagogical techniques and materials which prepare students to teach advanced and collegiate students. Prerequisite: MUSP 625 or instructor's consent.

**MUSP 750. Music Performance Workshop (1–4).** Repeatable for credit.

**MUSP 760. Group Piano Practicum (2).** Supervised group piano teaching for graduate students. Prerequisites: MUSP 580, 581, or instructor's consent.

**MUSP 761. Studio Piano Practicum (2).** Supervised studio teaching for graduate students. Prerequisites: MUSP 580, 581, or instructor's consent.

**MUSP 762. Opera Styles (2).** A comprehensive study of the performance styles and practices in operatic singing, ranging from the 17th century to the present. Prerequisite: instructor's consent.

**MUSP 773. Acting for Singers (3).** Studies the external and internal techniques of acting for the singer, emphasizing characterization and development of a role, to ensure that students have the necessary understanding and skills to integrate the acting process while singing. Prerequisite: instructor's consent.

**MUSP 790. Special Topics in Music (1–2).** For individual or group instruction. Repeatable with departmental consent.

**MUSP 790E. Musical Theatre and Opera Audition (3).** Cross-listed as THEA 630. Practicum course develops techniques and audition repertory singers need to gain professional employment and/or successfully compete for placement in advanced training programs. Also covers the business skills necessary to a professional career, and brings students into contact with professional guest artists who can provide additional insight and contacts. Prerequisite: instructor's consent.

**MUSP 790Q. Special Topics in Music and Foreign Language (1–5).** Cross-listed as MCLL 790Q (College of Liberal Arts & Sciences). Allows undergraduate and graduate students to take courses in the modern foreign languages together with individualized instruction in the translation and diction of poetical texts set to music. Course may be used to satisfy the foreign language requirement of the Bachelor of Music in performance—vocal emphasis. Repeatable for credit. Prerequisite: departmental consent.

### Courses for Graduate Students Only

**MUSP 841 & 842. Special Project in Music (1–3 & 1–3).** Individually supervised study or research emphasizing the personal needs of the student. Repeatable for credit. Prerequisite: instructor's consent.

**MUSP 843. Piano Pedagogy Seminar (2).** Variable topics, such as (1) advanced techniques in class piano or private piano (college curriculums); (2) class piano in early childhood; (3) class piano for leisure-age students; (4) class piano in public (or private) schools, extending the advanced preparation of piano pedagogy students as needed. Repeatable for credit. Prerequisite: MUSP 580, or instructor's consent.

**MUSP 871. Graduate Accompanying Recital (1).** Required for MM piano majors, vocal accompanying emphasis. Prerequisites: the student must have completed 18 hours toward the degree, including two semesters of applied piano and be enrolled in MUSP 723 or 724.

**MUSP 872. Graduate Accompanying Recital (1).** Required for MM piano majors, instrumental accompanying emphasis. Prerequisites: the student must have completed 18 hours toward the degree, including two semesters of applied piano and be enrolled in MUSP 723 or 724.

**MUSP 873. Graduate Recital (2).** Performance of a full recital featuring the chief performing medium. Prerequisite: consent of instructors in applied area.

**MUSP 874. Professional In-Service Presentation Project (2).** Planning, organizing and presenting a three-hour in-service presentation (workshop) to in-service private piano teachers, perhaps in conjunction with an established community piano teacher's league, etc. Available as a terminal requirement alternative (in lieu of performance recital) in the Master of Music—piano pedagogy emphasis. Students approved for this terminal requirement option are also required to perform a major piano work, prepared at acceptable recital level, during semester jury examination within the final year (two semesters) of the degree program. Requires approval of piano performance area faculty. Prerequisite: departmental consent.

## Musicology-Composition (MUSC)

### Graduate Faculty

*Professors*: Dean Roush (program director, musicology-composition), Walter Mays
Associate Professor: Aleksander Sternfeld-Dunn
Assistant Professor: Kelly St. Pierre

## Master of Music (MM) History-Literature Concentration

Admission to the Master of Music (MM) degree program, history-literature concentration, requires a Bachelor of Music or Bachelor of Arts with a major in music or the demonstrated equivalent. Applicants must submit a letter of reference from a professor or teacher familiar with their writing and a writing sample of no more than 15 pages.

Completion of a Master of Music (MM) degree, history-literature concentration, requires a demonstration of reading proficiency in German, French, Italian or other language to be approved by an advisor. This requirement may be fulfilled by the equivalent of two semesters of language study at the undergraduate level at the discretion of the advisor. Reading proficiency tests are administered by the student's committee or part thereof before the student schedules their thesis defense. A thesis and thesis defense are also required for the degree.

In addition to the core requirements for all MM programs, students must complete the coursework listed below. The program requires a total of 32 hours.

#### *Additional Music History Requirements*

*Three (3) additional credit hours chosen from*
- MUSC 891 Seminar in Music History pre-1750 (repeatable) ..... 3
- MUSC 892 Seminar in Music History post-1750 (repeatable) ..... 3

*Approved Electives* ..... *13*
- Music or nonmusic courses 500 or above; may include applied lessons, ensembles, languages, etc. Courses must be approved by faculty advisor.

*Thesis Requirements*
- MUSC 875 Thesis Research ..... 2
- MUSC 876 Thesis ..... 2

## Master of Music (MM) Composition Concentration

Admission to this area requires a Bachelor of Music with a major in composition or the demonstrated equivalent. Background deficiencies must be satisfied before students may enroll in graduate composition courses. Applicants also must submit a portfolio including pieces—scores and live recordings (when appropriate)—demonstrating a variety of contemporary techniques, form and instrumentation. Approval for admission to candidacy is contingent upon the candidate's demonstrated ability to complete a final project in composition.

#### *Degree Requirements*

In addition to the core requirements for all MM programs, students must complete the coursework listed below. The program requires a total of 32 hours.

*Electives* ..... *10*
- Music or nonmusic courses 500 or above; may include applied lessons, ensembles, languages,

etc. Courses must be approved by the faculty advisor.

*Other Requirements*

MUSC 840A *or* 840B Seminar in the Techniques of Composition ..... 2
MUSC 860 Advanced Composition (repeatable) ..... 4
MUSC 875 Thesis Research ..... 2
MUSC 876 Thesis ..... 2

In addition, students must complete a terminal project which must consist of one of the following: (1) a composition of major proportions, (2) a body of works in various media, or (3) a written thesis in the area of music theory. Composition majors may be required by the thesis committee to have a work or works performed publicly. The final thesis must be notated using computer software and submitted digitally in keeping with the procedures established through the Graduate School of Wichita State University.

### Courses for Graduate/Undergraduate Credit

**MUSC 510. Interrelated Arts (3).** Presents an aesthetic analysis of the fine arts: music, visual arts, drama, literature and dance. Emphasizes style and commonality among the arts disciplines.

**MUSC 523. Form and Analysis (2).** Extensive analysis of the forms and formal processes of musical literature. Prerequisite: MUSC 228.

**MUSC 531. Introduction to Electronic Music (2).** Basic techniques of electronic music. Directed toward musicians who wish to use the electronic medium in teaching, performing or communicating through music in any way.

**MUSC 560. Applied Composition (2).** Individual study in advanced musical composition emphasizing writing for small ensembles in the smaller forms. For composition majors. Repeatable. Prerequisites: MUSC 260 and consent of composition area faculty and musicology-composition coordinator, to continue as a composition major.

**MUSC 561. 18th Century Counterpoint (2).** Contrapuntal devices of the 18th century as found in the works of J.S. Bach. Prerequisite: MUSC 228.

**MUSC 587. Organ Literature and Design I (2).** Broad survey of the historical eras of organ literature and design. Open to non-organ majors. Prerequisite: minimum of two years applied organ study or departmental consent.

**MUSC 588. Organ Literature and Design II (2).** Broad survey of the historical eras of organ literature and design. Open to non-organ majors. Prerequisite: minimum of two years applied organ study or departmental consent.

**MUSC 616. Symphonic Literature (3).** An advanced course in orchestral literature covering the development of the symphonic music from Baroque to the present day. Designed primarily for music majors who have already had MUSC 334 and 335.

**MUSC 623. Opera Literature (3).** A comprehensive survey of Italian, German, French, Russian, English and American opera literature from the 17th century to the present. MUSC 113 is strongly recommended before taking the course. For upper-division or graduate students. Not limited to music majors.

**MUSC 624. Oratorio and Cantata Literature (2).** A study of the solo vocal literature of the larger sacred and secular forms from the 17th century to the present. Not limited to music majors.

**MUSC 641. Orchestration (2).** The study of instrumentation, emphasizing idiomatic scoring for various instrumental combinations with an approach to the problems of full orchestra and band scores. Prerequisite: MUSC 227.

**MUSC 660. Applied Composition (2).** Individual study in musical composition emphasizing writing for both small ensembles and large groups in the larger forms. Repeatable. Prerequisites: MUSC 560 and instructor's consent.

**MUSC 671. Chromatic Harmony (2).** Advanced study of chromatic harmonic materials of all periods with special attention to the 19th century. Emphasizes analysis and creative writing. Prerequisite: MUSC 228.

**MUSC 672. Contemporary Techniques (2).** Advanced study of music from impressionism to the present, emphasizing related literature and creative writing. Prerequisite: MUSC 228.

**MUSC 685. String Literature and Materials (2).** A survey and stylistic analysis of music for solo strings and chamber combinations, beginning with the early Baroque period.

**MUSC 726. Voice Literature (3).** A comprehensive survey of early Italian arias, French chansons, German lieder, contemporary English songs, and Russian and Spanish literature.

**MUSC 753. Choral Literature I (2).** A historical and stylistic survey of choral literature of the Renaissance and Baroque eras.

**MUSC 754. Choral Literature II (2).** A historical and stylistic survey of choral literature of the Classical, Romantic and Contemporary eras.

**MUSC 782–783. Piano Literature (2–2).** Survey of the historical eras of professional piano repertory.

**MUSC 786. Chamber Music Literature 1 (2).** Survey of composers, styles and works of chamber music from Baroque to about 1828.

**MUSC 787. Chamber Music Literature 2 (2).** Survey of composers, styles and works of chamber music from about 1828 to the present.

**MUSC 790. Special Topics in Music (1–4).** For individual or group instruction. Repeatable with departmental consent.

### Courses for Graduate Students Only

**MUSC 830. Seminar in Music Theory (3).** An analytical study of the materials used in musical composition from antiquity to the present, employing analytical approaches such as Schenker, Hindemith and serial techniques. Develops analytical perspective rather than compositional skills.

**MUSC 832. Topics in Music Analysis (3).** Develops areas of music theory in relation to analysis. Includes ideas evoking the most interest and considered by the instructor to be of the greatest professional benefit. Prerequisite: MUSC 830.

**MUSC 840A–B. Seminar in the Techniques of Composition (2—2).** Examines the nature of compositional techniques through selected works in different media: (A) large ensembles and (B) small ensembles. Prerequisites: MUSC 671, 672, 641, or departmental consent.

**MUSC 841. Special Project in Music (1–3).** Individually supervised study or research emphasizing the professional needs of the student. Repeatable for credit. Prerequisite: instructor's consent.

**MUSC 852. Introduction to Bibliography and Research (3).** Techniques of research and development of bibliography in music and music education. Course must be elected the first available semester of enrollment in MM or MME programs.

**MUSC 860. Advanced Composition (2).** Original work in the large forms and a continuation and expansion of MUSC 659–660. Prerequisite: MUSC 660 or equivalent.

**MUSC 875. Thesis Research (2).**

**MUSC 876. Thesis (2).**

**MUSC 891. Seminar in Music History pre-1750 (3).** Explores special topics and conceptual issues in music history and literature before 1750, focusing on the interaction of musical repertories with society, history and politics. Students are required to engage with primary sources (musical and textual) and musicological literature. Prerequisite: MUSC 852 or MUSE 853.

**MUSC 892. Seminar in Music History post-1750 (3).** Explores special topics and conceptual issues in music history and literature after 1750, focusing on the interaction of musical repertories with society, history and politics. Students are required to engage with primary sources (musical and textual) and musicological literature. Prerequisite: MUSC 852 or MUSE 853.

## School of Performing Arts

Linda Starkey, *director*

## Dance (DANC)

While a formal major in dance at the graduate level is not offered, the following courses are available for graduate credit.

### Courses for Graduate/Undergraduate Credit

**DANC 501. Modern Dance 4 (3).** Advanced level. Continuation of DANC 401. Emphasizes professional technique and performance quality. Repeatable for credit. Prerequisite: instructor's consent or by audition.

**DANC 505. Choreography 3 (3).** Focuses on the choreographic process. Students create choreographic studies for more than one dancer using elements studied in Choreography 1 and 2 and exploring different choreographic approaches. Further exploration may include environmental, chance and collaborative choreographies and multimedia approaches. Prerequisite: DANC 405. Corequisite: appropriate level modern dance or ballet technique class.

**DANC 510. Ballet 4 (3).** Continuation of DANC 410. Advanced level. Emphasizes professional technique and performance quality. Repeatable for credit. Prerequisite: instructor's consent or by audition.

**DANC 535. Jazz Dance 4 (3).** Advanced level. Continuation of DANC 435. Emphasizes professional technique and performance quality. Repeatable for credit. Prerequisite: instructor's consent or by audition.

**DANC 545. Methods of Teaching Dance (3).** Develops teaching skills for elementary schools, high schools, recreation centers, private and professional schools, and universities through lesson planning and in-class teaching practice. Prerequisite: DANC 401 or 410.

**DANC 580. Senior Project (1).** Focuses on the process of choreographing and producing a dance concert for the completion of the dance major, under the supervision of a dance faculty mentor. A written paper and an oral review with the dance faculty support the concert. May be taken concurrently with DANC 505 with instructor's consent. Corequisites: appropriate level technique class, senior standing.

**DANC 675. Directed Study (1–3).** Individual study or projects. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

**DANC 690. Special Topics in Dance (1–6).** For individual or group instruction. Repeatable for credit with departmental consent.

## Theatre (THEA)

**Graduate Faculty**
*Professor:* Bret Jones

While a formal major in theatre at the graduate level is not offered, the following courses are available for graduate credit.

### Courses for Graduate/Undergraduate Credit

**THEA 510. Design Project (1).** Advanced work in the problems of stage lighting design, costume design or scenic design. With the permission and supervision of the appropriate faculty member, the student designs for specific productions for either Main Stage or Experimental Theatre. Repeatable twice for credit if taken in different design areas. Prerequisite: instructor's consent.

**THEA 516 & >THEA 517. Scriptwriting I and II (3 & 3).** Cross-listed as ENGL 517 and 518. The writing of scripts for performance in theatre, film, television and the Internet. Emphasizes both verbal and visual aspects of scriptwriting. If possible, the scripts are given in-class readings by actors. Prerequisite: instructor's consent.

**THEA 530. Musical Theatre Scene Study (2).** An interdisciplinary practicum course with opportunities for student performers to refine interdisciplinary techniques by performing scenes from a variety of music theatre genres including operetta, book musicals and rock musicals. Advanced students may explore opportunities to gain experience in directing and choreographing under faculty guidance and supervision. Prerequisites: junior or senior music theatre, dance or voice majors only; and/or permission of the instructors.

**THEA 544. Advanced Stagecraft (3). Lab. arr.** Explores advanced construction techniques for the fabrication of stage scenery and stage properties. Such operations may include welding, vacuum forming, carpentry and working with a variety of new materials. Students complete a research project and presentation/demonstration of research findings. Independent projects relating to materials and techniques studied are pursued in arranged labs. Prerequisite: THEA 244.

**THEA 546. Scene Painting (3).** Presented with a lecture demonstration-studio arrangement. Explores various theatre painting materials and techniques enabling the student to develop skill as a scenic artist. Prerequisite: THEA 244.

**THEA 555. Senior Project (1).** Cross-listed as MUSP 555. An interdisciplinary course to showcase the talents of graduating seniors to professional producers, agents and casting directors. Students develop and produce a variety show demonstrating their talents in singing, dancing, acting, directing and choreography. For majors only. Prerequisite: instructor's consent.

**THEA 559. Directing II (3). Lab. arr.** Staging and rehearsal techniques emphasizing the problems of the period and stylized play. Prerequisites: THEA 359 or departmental consent and junior standing.

**THEA 590. Special Topics (1–3).** Designed to expand and strengthen the experience of the student academically and professionally. Study of developments in theatre that go beyond, or are related to, courses already offered gives students a much richer preparation for their field of study. Topics include new technology, new materials, contemporary explorations in performance, and in-depth study of production methods.

**THEA 610. Directing the Musical (3).** An interdisciplinary course using interdepartmental expertise (theatre, dance, music) to teach the student how to produce a musical. Prerequisite: instructor's consent.

**THEA 623. Theatre History I (3).** The history of theatrical activity as a social institution and an art form from its beginnings to the 17th century. Includes representative plays, methods of staging and theatrical architecture of various periods.

**THEA 624. Theatre History II (3).** History of theatrical activity as a social institution and an art form from the 17th century to the present. Includes representative plays, methods of staging and theatrical architecture of various periods.

**THEA 630. Musical Theatre & Opera Audition (3).** Cross-listed as MUSP 790E. A practicum course which develops techniques and audition repertory singers need to gain professional employment and/or successfully compete for placement in advanced training programs. Also covers the business skills necessary to a professional career, and brings students into contact with professional guest artists who can provide additional insight and contacts. Prerequisite: instructor's consent.

**THEA 643. Styles in Acting (3).** Training in, and development of, the special techniques required for period or stylized plays with special emphasis on Greek, Shakespearian and Restoration styles. Prerequisites: THEA 243, 342, junior standing.

**THEA 647. Scene Design II (3).** Continuation of THEA 344 with more advanced work in designing settings for the stage and including studies in scenographic techniques and exercises in model building. Students design settings for a production having a single set, a production requiring a simultaneous setting and a production using multiple settings. Requires no laboratory work in theatre production. Prerequisites: THEA 244, 344.

**THEA 649. Stage Lighting II and Theatre Sound (3).** Continues the study and application of the theories and techniques of THEA 345, emphasizing advanced concepts of design, and provides an introduction to theatre sound production. Prerequisite: THEA 345.

**THEA 651. Scene Study (3).** The synthesis of all previous acting courses. Studies scenes in depth as preparation for performance. Course goal is the presentation of fully realized characterizations in those scenes studied, integrating the elements of the actor's craft learned in the prerequisite courses. Prerequisites: THEA 643 and junior standing.

**THEA 653. History of Costume (3). Lab. arr.** Historical survey and individual research of dress from ancient Egypt to present day emphasizing social, political, economic and religious influences. Theory and practice of adapting period styles to the stage. Prerequisite: THEA 253 or departmental consent.

**THEA 657. Costume Design I (3).** Covers the techniques of costume design for the stage. Students strengthen and expand their knowledge of techniques in costume design for the stage, film and television. Prerequisites: ARTF 145, THEA 253.

**THEA 675. Directed Study (2–4).** Cross-listed as COMM 675. Individual study or projects. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

**THEA 780. Theatre Internship (3–15).** Advanced theatre production work as arranged by students in directing, acting, scenery and lighting; costume design and construction; or theatre management with a professional theatre company. Work is evaluated by graduate faculty. Total of internship activity applicable toward graduation is 15 hours. Prerequisite: junior standing or departmental consent.

### Courses for Graduate Students Only

**THEA 820. Investigation and Conference (2–3).** Cross-listed as COMM 820. Directed research and experimentation for graduate students in some phase of (a) public address, (b) theatre history and production, (c) radio-television, or (d) the teaching of speech. Repeatable for credit up to a total of 6 hours.

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.

# College of Health Professions

**Sandra C. Bibb, *dean***
**400 Ahlberg Hall • (316) WSU-3600**
**wichita.edu/chp**
**Stephen Arnold,** *associate dean*

## Departments:

**Advanced Education in General Dentistry,** (316) 978-8350—Dean Elledge, *program director*
**Communication Sciences and Disorders,** (316) 978-3240—Julie Scherz, *chairperson*
**Dental Hygiene,** (316) 978-3614—Denise Maseman, *chairperson*
**Medical Laboratory Sciences,** (316) 978-3146—Jean Brickell, *chairperson*
**Physical Therapy,** (316) 978-3604—Robert Manske, *chairperson*
**Physician Assistant,** (316) 978-3011—Sue Nyberg, *interim chairperson*
**Public Health Sciences,** (316) 978-3060—Nicole Rogers, *chairperson*
**School of Nursing,** (316) 978-3610—Victoria Mosack, *chairperson*

The College of Health Professions offers graduate programs leading to a Master of Arts in communication sciences and disorders, doctorate in communication sciences and disorders, Doctor of Audiology, Doctor of Physical Therapy, Master of Physician Assistant, Master of Arts in aging studies, Master of Science in Nursing, and Doctor of Nursing Practice. Admission to these programs requires a bachelor's degree and the fulfillment of requirements listed for each program elsewhere in the Graduate Catalog.

***Certificates:*** The College of Health Professions offers the certificate in public health, and the postdoctoral certificate in advanced education in general dentistry.

## Licensing

Many state and national licensing and governing organizations will not grant a license, certification, registration or other similar document to practice a chosen profession if the applicant has been convicted of a felony, and in some cases a misdemeanor. Prospective applicants are encouraged to consult with their chosen professional governing or licensing organization for more detailed information before applying.

## Clinical Learning

Learning in clinical settings is an important aspect of programs of study in the College of Health Professions. Many health care facilities require information on students engaged in clinical learning opportunities, including, but not limited to: verification of name, address and social security number, personal health information, drug and alcohol testing, criminal background checks, verification of education, listing on any registered sex offender list, listing on the U.S. Office of Inspector General's Excluded Individual's list, and listing on the U.S. General Services Administration's Excluded Parties List. While the College of Health Professions will assist students in obtaining and gathering the information required by a health care facility, the cost of obtaining such information must be assumed by the student. What information will be required to permit the student to participate in a clinical setting learning experience will depend upon the respective health care facility. If a student is unable to fulfill the clinical experiences required by their program of study, the student may be unable to matriculate and/or graduate.

## Essential Functions/Technical Standards

Essential functions/technical standards define the attributes that are considered necessary for students to possess in order to complete their education and training, and subsequently enter clinical practice. These essential functions/technical standards are determined to be prerequisites for entrance to, continuation in, and graduation from a student's chosen discipline in the WSU College of Health Professions.

Students must possess aptitude, ability and skills in five areas: (1) observation; (2) communication; (3) sensory and motor coordination and function; (4) conceptualization, integration and quantification; and (5) behavioral and social skills, ability and aptitude. The essential functions/technical standards described by a student's chosen discipline are critically important to the student and must be autonomously performed by the student. It should be understood that these are essential function/technical standards for minimum competence in a student's discipline. Contact specific programs for detailed essential functions/technical standards. Reasonable accommodation of disability will be provided after the student notifies the department of the disability, and the disability has been documented by appropriate professionals.

## School of Health Sciences

The School of Health Sciences offers graduate programs leading to the Master of Physician Assistant, Master of Arts in communication sciences and disorders, Master of Arts in aging studies, Doctor of Audiology, doctorate in communication sciences and disorders, and Doctor of Physical Therapy degrees. Specific requirements for each degree are described under the appropriate listing as follows.

## Basic Health Sciences (HS)

**Courses for Graduate/Undergraduate Credit**

**HS 550. Kidney Function and Disease for Health Professionals: Glomerular Filtration and Renal Blood Flow (1).** First in a series of four courses developed for students preparing for health professional programs in a variety of settings (e.g., nursing, physician assistant, physical therapy, medical degrees), or advanced degrees in the sciences (e.g., biology, exercise science) who have a desire to expand their background in kidney physiology before entering these fields. Prerequisite: BIOL 223 or HS 290.

**HS 551. Kidney Function and Disease for Health Professionals: Tubular Processing of Glomerular Filtrate (1).** Second in a series of four courses developed for students preparing for health professional programs in a variety of settings (e.g., nursing, physician assistant, physical therapy, medical degrees), or advanced degrees in the sciences (e.g., biology, exercise science) who have a

desire to expand their background in kidney physiology before entering these fields. Prerequisite: HS 550.

**HS 552. Kidney Function and Disease for Health Professionals: Regulation of Extracellular Fluid Osmolarity and Sodium Concentration (1).** Third in a series of four courses developed for students preparing for health professional programs in a variety of settings (e.g., nursing, physician assistant, physical therapy, medical degrees), or advanced degrees in the sciences (e.g., biology, exercise science) who have a desire to expand their background in kidney physiology before entering these fields. Prerequisite: HS 551.

**HS 553. Kidney Function and Disease for Health Professionals: Renal Regulation of Potassium, Kidney Diseases and Diuretics (1).** Fourth in a series of four courses developed for students preparing for health professional programs in a variety of settings (e.g., nursing, physician assistant, physical therapy, medical degrees), or advanced degrees in the sciences (e.g., biology, exercise science) who have a desire to expand their background in kidney physiology before entering these fields. Prerequisite: HS 552.

**HS 570. Neuroscience for Health Professionals: Peripheral Nervous System (1).** First in a series of four courses developed for students preparing for health professions programs in a variety of settings (e.g., nursing, physician assistant, physical therapy, medical degrees), or advanced degrees in the sciences (e.g., biology, exercise science, biochemistry) who have a desire to expand their background in neuroscience before entering these fields. Prerequisite: instructor's consent.

**HS 571. Neuroscience for Health Professionals: Ascending and Descending Pathways (1).** Second in a series of four courses developed for students preparing for health professions programs in a variety of settings (e.g., nursing, physician assistant, physical therapy, medical degrees), or advanced degrees in the sciences (e.g., biology, exercise science, biochemistry) who have a desire to expand their background in neuroscience before entering these fields. Prerequisite: HS 570 or instructor's consent.

**HS 572. Neuroscience for Health Professionals: Brainstem and Cerebellum (1).** Third in a series of four courses developed for students preparing for health professions programs in a variety of settings (e.g., nursing, physician assistant, physical therapy, medical degrees), or advanced degrees in the sciences (e.g., biology, exercise science, biochemistry) who have a desire to expand their background in neuroscience before entering these fields. Prerequisites: HS 570, 571.

**HS 573. Neuroscience for Health Professionals: Forebrain (1).** Fourth in a series of four courses developed for students preparing for health professions programs in a variety of settings (e.g., nursing, physician assistant, physical therapy, medical degrees), or advanced degrees in the sciences (e.g., biology, exercise science, biochemistry) who have a desire to expand their background in neuroscience before entering these fields. Prerequisites: HS 570, 571, 572.

**HS 600. Advanced Clinical Anatomy (5).** Structured to present the human body using a regional approach. Emphasis on learning gross anatomy with a clinical mindset. In addition to lectures, the students use prosected cadavers, skeletal specimens, radiographic films and anatomical models. Designed for those students who desire to pursue a degree within health professions and who would like to deepen their knowledge of human anatomy and its application to clinical scenarios. Prerequisite: BIOL 223 or HS 290.

**HS 700. Gross Anatomy (6). 3R; 9L.** Study of the structure of the human body emphasizing integration of anatomical information with human functional abilities. Prerequisites: four semesters of biological sciences and instructor's consent.

**HS 710. Applied Clinical Pharmacology (3).** Discusses clinical applications of selected drug classes commonly prescribed in the primary care setting as well as the follow-up management of common chronic diseases. Discusses pharmacological managements as to pharmacokinetics, dosages, mechanisms of action (at molecular and systemic levels), side effects, drug interactions, contraindications, therapeutic use and expected outcomes. Emphasizes the practical application of this knowledge in various patient populations of all ages as well as rational drug selection and monitoring. Methodology includes lecture presentations, group discussions, clinical case studies, assessment of recent literature, homework assignments, quizzes and exams. Prerequisites: HS 301, admission to graduate health professional program or PA professional program, or instructor's consent.

**HS 711. Pharmacological Management of Acute and Chronic Diseases (3).** Discusses the clinical application of specific categories of drugs used in the treatment of several common acute and chronic diseases. Presents pharmacokinetics, mechanisms of action, dosages, side effects and monitoring parameters of medications as they are used in these diseases and in various patient populations. Facilitates clinical application of this knowledge through case studies, class discussions and reviews of the latest medical literature. Prerequisites: admission to graduate nursing program and department consent, or completion of HS 710 and admission to PA professional program.

## Health Professions—General (HP)

### Courses for Graduate/Undergraduate Credit

**HP 570. Selected Topics (1–4).** Lecture/discussion; focuses on a discrete area content relevant to the health disciplines. In-depth study of a particular topic or concept, including didactic and current research findings and technological advances relevant to the topic. Repeatable to a maximum of 6 credit hours with program consent, upper-division status.

**HP 750. Workshop in Health Professions (1–4).** An opportunity for intensive study of special topics related to health profession practice, education or research.

### Courses for Graduate Students Only

**HP 800. Research Methods for Evidence-Based Practice (2).** Online course provides foundational and advanced knowledge and skills regarding research methods to prepare students to develop research studies and locate, appraise and apply health related research to answer clinical questions. Emphasizes principles of evidence-based practice, research ethics, professional and scholarly training, research design and methodologies, framing research questions, and interpretation of basic and advanced statistics necessary to critically evaluate, interpret, and apply health care and health policy research to patient/client care and health care systems. Prerequisites: admission into a graduate-level health professions program and instructor's consent.

**HP 801. Interprofessional Evidence-Based Practice (1).** Interprofessional course uses small group discussion and practical exercises to advance students' skills in evidence-based practice. Students practice integration of clinical expertise and patient/client preferences and values with the best available health care and health policy research to optimize individual health care, public health outcomes and health care systems. Students also have the opportunity to practice and develop skills in working in an interprofessional team. Course assumes advanced knowledge and skills in research methods and evidence-based practice. Prerequisites: concurrent or prior enrollment in HP 800 or prior completion of an approved graduate-level research methods course with instructor's consent.

## Communication Sciences and Disorders (CSD)

### Graduate Faculty

*Professors:* Kathy Coufal, Raymond H. Hull
*Associate Professors:* Anthony DiLollo, Douglas F. Parham, Julie W. Scherz (chairperson), Trisha Self, Kathy Strattman, Xiao-Ming Sun
*Clinic Director:* Mary Beasley
*Senior Clinical Educator:* Brian Ray
*Clinical Supervisors:* Terese Conrad, Stacey Kampe, Colleen Novak, Ashley Purdum, Joanna Wyckoff
*Clinical Audiologist:* Mark Shaver

### Clinical Services

Clinical services for members of the community with speech, language or hearing disorders, as well as students enrolled at Wichita State, may be arranged with the Evelyn Hendren Cassat Speech-Language-Hearing Clinic (telephone: (316) 978-3289, email: slhclinic@wichita.edu). Fees are charged for these services.

### Degrees and Areas of Specialization

The Department of Communication Sciences and Disorders offers courses of study leading to the Master of Arts (MA), the Doctor of Audiology (AuD), and the Doctor of Philosophy (PhD). Academic and clinical education are provided for students who wish to become professionally qualified to work with children and adults. Instructional areas include communication sciences, speech-language pathology, and clinical and rehabilitative audiology. A graduate program culminating in a master's degree is required for professional certification as a speech-language pathologist for work in the public schools, hospitals, clinics, rehabilitation centers or private practice. A professional doctoral degree is required to practice as an audiologist. With an undergraduate preprofessional major, students typically can complete the master's program in two years and the AuD in three years (including summers). The MA and AuD programs at WSU satisfy the minimum requirement for professional certification by the American Speech-Language-Hearing Association (ASHA) and for Kansas licensure, and are accredited by the Council on Academic Accreditation (CAA) of ASHA. The PhD program prepares individuals to function professionally as independent researchers, teacher-scholars in an academic setting, or as program administrators.

## Admission Requirements

1. Admission to the Graduate School at Wichita State University;
2. Minimum grade requirements: 2.750 overall GPA and 3.000 (MA & AuD); 3.500 (PhD) GPA in the last 60 semester credit hours;
3. Three letters of recommendation;
4. Statement of purpose. See department website for instructions.
5. A professional resume (PhD) or similar entries for work experience, activities, etc. in the centralized application (MA and AuD);
6. Official scores for the Graduate Record Examination (GRE) or Miller Analogies Test (MAT) taken within the last five years; and
7. Non-native English speaking students, international and domestic, must submit a TOEFL score of 550 paper-based, or 79 Internet-based, and a score of 23 or higher on the speaking portion of the Internet based TOEFL, or 50 or higher on the SPEAK test to be considered for admission to the MA or AuD programs (no waivers allowed).

To be reviewed for admission, applicants should do the following:

1. Submit an application for admission and supporting transcripts to the WSU Graduate School; and either
2. ***MA and AuD only.*** Submit an application and supporting documents (including transcripts) to the communication sciences and disorders centralized application service (CSDCAS) by the published deadline; *or*
3. ***PhD only.*** Submit supporting documents directly to the WSU CSD department by the published deadline.

Admission to the MA program is considered for students who have completed an undergraduate major in the area of speech, language and hearing disorders. Selected undergraduate or closely allied courses may be considered. Additionally, students with a degree from another field will be considered for admission after completion of prerequisite courses. Please see the department website for details and consult a CSD advisor. Admission is for fall semester only. The deadline to submit CSDCAS applications, including recommendations and transcripts, is January 15 (11:59 p.m. EST). Graduate School application, application fee, transcripts and other supporting documents are due by January 15.

Undergraduate students may request early admission to the MA program under the senior rule policy if they:

1. Are within 10 hours of completing the bachelor's degree;
2. Meet GPA requirements for senior rule status and have a 3.700 GPA in the last 60 credit hours;
3. Provide three letters of recommendation from CSD faculty or clinical educators. Two letters from CSD faculty and one letter from a faculty member in a related academic area is acceptable; and
4. Have a minimum MAT score of 415 *or* a minimum GRE score of 157 Verbal, 159 Quantitative, and 4.5 Analytical Writing.

Contact the department for an application packet. Early admission is contingent on faculty review of all application materials. Application deadline is January 15 for entry in the fall semester; October 15 for entry in the spring semester.

Admission to the AuD program is considered for students who have completed an undergraduate major in the area of speech, language and hearing disorders. Selected undergraduate or closely allied courses may be considered. Additionally, students with a degree from another field will be considered for admission with the understanding that prerequisite coursework will be required during their first year of the program. Please see the department website for details and consult a CSD advisor. Admission is for summer session only. The deadline to submit completed CSDCAS applications, including recommendations and transcripts, is January 15 (11:59 p.m. EST). Graduate School application, application fee, transcripts, and other supporting documents are due by January 15.

Admission to the CSD PhD program is restricted to those students whose abilities, experience and previous coursework indicate that they are likely to be able to complete the doctoral program successfully. It is expected that the applicant will have acquired sufficient knowledge in communication sciences and disorders to be prepared for entry into an integrated program of advanced study and research. Applications are reviewed on a continuing basis.

## Master of Arts Requirements

The Master of Arts (MA) in communication sciences and disorders may be earned with an emphasis in speech-language pathology. This program requires students to complete 44 hours of didactic coursework, 14 clinical practicum hours, and 3 (nonthesis) or 4 (thesis) research hours, totaling 61 or 62 credit hours. In addition, 6 hours of tool subjects in research methods and statistics are required. Prospective students with an undergraduate degree in another field should review the department website for details on prerequisite coursework and consult a CSD advisor prior to applying to the program.

A plan of study must be filed within the first year of the program and students must complete 60 percent of total hours at the 700 level or above. Transfer hours cannot be used to satisfy the course level requirements stated above unless the transfer hours are of appropriate level from Kansas Board of Regents institutions. Workshop hours may not be used to satisfy the course level requirements. Transfer credit policies are listed in the appropriate section of the Graduate Catalog.

*Didactic Coursework.....hrs.*

| | |
|---|---|
| CSD 705 | Counseling in Communication Disorders....2 |
| CSD 710 | Autism Spectrum Disorders....2 |
| CSD 809 | Language & Literacy for Young Children: Assessment and Intervention....2 |
| CSD 810 | Motor Speech Disorders....2 |
| CSD 811 | Dysphagia....2 |
| CSD 812 | Aphasia....2 |
| CSD 814 | Applied Phonology....2 |
| CSD 815 | Augmentative and Alternative Communication....2 |
| CSD 816 | Language & Literacy for School-Age and Adolescents....2 |
| CSD 817 | Voice Disorders....3 |
| CSD 818 | Fluency Disorders....2 |
| CSD 819 | Cognitive Communication Disorders....2 |
| CSD 832A | Critical Thinking in Clinical Practice I....4 |
| CSD 832B | Critical Thinking in Clinical Practice II....4 |
| CSD 832C | Critical Thinking in Clinical Practice III....4 |
| HP 801 | Interprofessional Evidence-Based Practice....1 |
| Electives | (departmentally approved)....6 |

*Tools*

| | |
|---|---|
| Statistics (ex. PSY 301, CESP 704, PHS 804)....3 | |
| Research Methods (ex. PSY 311, CESP 701, HP 800)....3 | |

*Nonthesis Option*

| | |
|---|---|
| CSD 891 | Nonthesis Research Project....2 |
| CSD 892 | Presentation of Research....1 |

*Thesis Option*

| | |
|---|---|
| CSD 895 | Thesis Research....2 |
| CSD 899 | Thesis....2 |

*Clinical Practicum*

| | |
|---|---|
| CSD 821 | Educational Settings Pract. ....3 |
| CSD 822 | General Clinic Pract. (repeatable four semesters)..max 7 |
| CSD 823 | Medical Settings Pract....3 |
| CSD 831 | Auditory Assmt.—SLP Pract....1 |

Successful completion of the program requires the following: (1) satisfactory performance on all didactic and clinical evaluative measures as determined by program faculty, clinical educators and externship supervisors with at least a 3.000 GPA; (2) satisfactory performance in completing the mentored research project with subsequent presentation and evaluation, as reviewed by program faculty; and (3) a passing score on the Praxis exam as determined by the state of Kansas. An alternative assessment (e.g., written comprehensive examination) will be implemented if students have not passed the Praxis exam for a second time prior to meeting all other requirements for graduation.

Further, students must enroll in a clinical practicum course every semester during the master's program to complete the necessary clinical hours for graduation via supervised practicums at the WSU Evelyn Hendren Cassat Speech-Language-Hearing Clinic, hospital, school or other practice environment. To ensure that the

placement will provide candidates the best clinical opportunities, the placement of the candidate may or may not be in the metropolitan area of Wichita. Although WSU has a number of sites established, the candidate may also independently seek placement for that experience. However, the final decision as to the suitability and location will be approved by the program faculty. A competency-based evaluation of the student's performance will be made at regular intervals throughout the clinical experience.

Before graduation, students must have achieved sufficient clinical clock hours to satisfy requirements of the American Speech-Language-Hearing Association (ASHA) for the Certificate of Clinical Competence (CCC-SLP) and must have demonstrated clinical competency in completing those hours as determined by both in-house and external clinical supervisors. Students must also have demonstrated knowledge and skills learning outcomes in compliance with ASHA standards for certification.

Students enrolled in the department's clinical practicum courses are required to provide proof of medical clearance (see department for details) prior to the start of the course and to renew annually. Semester clinic fees will also apply. The cost of professional liability insurance coverage (not less than $1 million per single claim/$3 million aggregate per year) is included in the program fee. Students are required to obtain a criminal background check at their own expense as part of the clinical placements. Students should consult the beginning of the College of Health Professions section of the catalog for additional requirements which may be needed to participate in clinical settings. In addition, applications for external practicum placements must be made one year in advance and are subject to departmental approval.

## Doctor of Audiology Requirements

The Doctor of Audiology (AuD) program requires a minimum of 87 credit hours of didactic and clinical courses. In addition, 10 hours of tool subjects in sign language, research methods, professional/scholarly integrity and aural rehabilitation are required. All students must enroll in a clinical practicum course each semester.

A plan of study must be filed within the first year of the program. Students must complete 60 percent of total hours at the 700 level or above and the majority of total hours (50 percent plus one hour) must be 800 level or above. Transfer hours cannot be used to satisfy the course level requirements stated above unless transfer hours are of appropriate level from Kansas Board of Regents institutions. Workshop hours may not be used to satisfy the course level requirements. Transfer credit policies are listed in the appropriate section of the Graduate Catalog.

*Didactic Coursework*.....*hrs.*

| | | |
|---|---|---|
| CSD 705 | Counseling in Communication Disorders | 2 |
| CSD 803 | Intro. to Psychoacoustics | 4 |
| CSD 804 | Clinical Audiology I | 4 |
| CSD 805 | Clinical Audiology II | 3 |
| CSD 806 | Advanced Anatomy and Physiology of the Aud. Sys. | 3 |
| CSD 807 | Acoustics and Instrumentation | 3 |
| CSD 808 | Otoacoustic Emissions | 2 |
| CSD 851 | Medical Audiology | 3 |
| CSD 854 | Hearing Conservation | 2 |
| CSD 855 | Pediatric and Educational Audiology | 3 |
| CSD 860 | Amplification I | 3 |
| CSD 861 | Amplification II | 3 |
| CSD 863 | Professional Seminar in Audiology | 3 |
| CSD 866 | Auditory Evoked Potentials | 3 |
| CSD 868 | Diagnosis and Management of Persons with Balance Disorders | 3 |
| CSD 870 | Current Topics in Amplification | 2 |
| CSD 871 | Current Topics in Auditory Disorders | 2 |
| HP 801 | Interprofessional Evidence-Based Practice | 1 |
| PHS 804 | Prin. of Statistics in HS | 3 |
| Business Elective (departmentally approved) | | 3 |

*Tools*

| | | |
|---|---|---|
| Sign Language (ex. CSD 260/270) | | 3 |
| Research Methods (ex. PSY 311, CESP 701, HP 800) | | 3 |
| CSD 504 | Aural Rehabilitation | 3 |
| CSD 940G | Scholarly Integrity | 1 |

*Research Project Option 1*

| | | |
|---|---|---|
| CSD 891 | Nonthesis Research Project | 2 |
| CSD 892 | Presentation of Research | 1 |
| Second elective (departmentally approved) | | 3 |

*Research Project Option 2*

| | | |
|---|---|---|
| CSD 891 | Nonthesis Research Project | 5 |
| CSD 892 | Presentation of Research | 1 |

*Clinical Practicum*

| | | |
|---|---|---|
| CSD 886 | Clinical Practicum in Audiology (repeatable six semesters) | max 8 |
| CSD 997 | Audiology Residency | 18 |

Advancement to candidacy is contingent upon (1) satisfactory performance on all didactic and clinical evaluative measures throughout years one and two of the student's AuD program as determined by program faculty, clinical educators and externship supervisors, with at least a 3.250 GPA; (2) completion of the mentored research project with a subsequent presentation and evaluation, as reviewed by program faculty; and (3) successful completion of comprehensive, competency-based examinations near the conclusion of years one and two. Students will be given two attempts each year to complete the comprehensive examination requirement. Advancement to candidacy allows students to enroll in the final program requirement, the full-time residency.

Further, students must enroll in CSD 997, Audiology Residency, in consecutive semesters during the final year of the program of study to complete the necessary clinical hours for graduation. The residency involves a full-time supervised experience in a hospital, clinical or other audiology practice environment. To ensure that the placement will provide candidates the best environment for that culminating experience, the placement of the candidate may or may not be in the metropolitan area of Wichita. Although WSU has a number of sites established for the residency year, the candidate may independently seek placement for that experience. However, the final decision as to the suitability and location will be approved by the program faculty. A competency-based evaluation of the student's performance will be made at regular intervals throughout the clinical experience.

Before graduation, students must have achieved sufficient clinical clock hours to satisfy the requirements of the American Speech-Language-Hearing Association (ASHA) for the Certificate of Clinical Competence (CCC-A) and must have demonstrated clinical competency in completing those hours as determined by both in-house and external clinical supervisors. Students must also have demonstrated knowledge and skills learning outcomes in compliance with ASHA standards for certification. A passing score on the Praxis exam as determined by the state of Kansas is required prior to graduation. An alternative assessment (e.g., written comprehensive examination) will be implemented if a student has not passed the Praxis exam for a second time prior to meeting all other requirements for candidacy and graduation.

Students enrolled in the department's clinical practicum courses are required to provide proof of medical clearance (see department for details) prior to the start of the course and to renew annually. Semester clinic fees will also apply. The cost of professional liability insurance coverage (not less than $1 million per single claim/$3 million aggregate per year) is included in the program fee. Students are required to obtain a criminal background check at their own expense as part of the clinical placements. Students should consult the beginning of the College of Health Professions chapter of the catalog for additional requirements which may be needed to participate in clinical settings. In addition, applications for external practicum placements must be made one year in advance and are subject to departmental approval.

## Doctor of Philosophy Requirements

The doctoral program in communication sciences and disorders requires a minimum of 65 hours beyond the master's degree, or 95 hours beyond the bachelor's degree, on the plan of study (including a maximum of 18 hours of dissertation). In addition, 12 hours of research tool courses are required. A doctoral student becomes a *candidate for the degree* after passing the qualifying examination, which typically is taken during the semester the plan of study requirements are completed (exclusive of dissertation hours). Doctoral candidates enroll in at least 2 dissertation hours each semester (including the semester of graduation). The final requirements for the PhD are the

completion of original research, the dissertation and an oral defense.

## Minimum Grade Requirement

Admission to courses is possible with a minimum grade of *C* (2.000 points per credit hour) in each stated prerequisite or its judged equivalent, or with departmental consent, unless otherwise specified in the course description.

### Courses for Graduate/Undergraduate Credit

**CSD 504. Aural Rehabilitation (3).** Discussion and labs concerning the role of speech-language pathologists and audiologists in evaluation and treatment of hearing-impaired children, adolescents, adults and their families. Students focus on understanding psychological, social, educational and occupational impacts of hearing loss; on applying a rehabilitative model, technology, individual and group therapies; and collaboration with families and professionals to help hearing-impaired persons improve or cope better with their communication problems. Prerequisite: CSD 351 or instructor's consent.

**CSD 506. Acoustic and Perceptual Phonetics (3).** Study of the physical patterns (acoustic) of speech sounds and the importance of these acoustic patterns to speech recognition (perception). Focuses on segmental phonemes (vowels and consonants) and on suprasegmental characteristics such as stress and intonation. Introduces different types of speech analysis techniques and discusses how they may be used to study the acoustic patterns of speech sounds. Studies how different aspects of the speech signal relate to listener perception. Prerequisites: PHYS 210; CSD 301 and 302 with grades of *B* (3.000 points/credit hr.) or better.

**CSD 514. Speech-Sound Disorders (3).** Discusses basic methods and procedures for identifying, assessing, analyzing and remediating speech-sound disorders. Practice in phonetic transcription of highly unintelligible speech samples. *Course includes diversity content.* Prerequisites: CSD 306 with a grade of *B* (3.000 points/credit hour) or better, 306L, or instructor's consent. Corequisite: CSD 515.

**CSD 515. Speech-Sound Disorders Lab (1).** Laboratory experience compliments the topics covered in CSD 514 and includes classroom and clinic observations. Prerequisites: CSD 306 with a grade of *B* (3.000 points/credit hour) or better, 306L or instructor's consent. Corequisite: CSD 514.

**CSD 517. Communication in Aging (3).** Focuses on how communication is affected by aging, what communication problems may be experienced by older persons, and what the implications are for speech-language pathologists and audiologists providing services to older persons. Explores prevention activities geared toward maintaining functional communication abilities in older adults as well as functional treatment approaches geared toward the specific communication needs of older persons. Course is appropriate for students in other fields of study. *Course includes diversity content.*

**CSD 518. Deaf Culture (3).** Examines various cultural aspects of the deaf community. Presents the interrelationship of language and culture along with a study of socialization, norms and values. *Course includes diversity content.*

**CSD 519. Genetic and Organic Syndromes (3).** Introduces human genetics and the impact of chromosomal and structural anomalies of communication disorders. Assessment and remediation of cleft palate speech. Prerequisites: CSD 301, 302 with grades of *B* (3.000 points/credit hour) or better. Corequisite: CSD 521.

**CSD 520. ASL: Nonverbal Communication (3).** Nonverbal way of communication which forms an integral base for communication in American Sign Language. Emphasizes the use and understanding of facial expression gestures, pantomime and body language. Role play and acting out are required as part of this class. Prerequisite: CSD 370 or instructor's consent.

**CSD 521. Genetic and Organic Syndromes Lab (1).** Laboratory experience which provides students the opportunity to observe and document assessment and treatment of individuals with various communication disorders caused by syndromic and/or gene-linked conditions. Prerequisites: CSD 301, 302 with grades of *B* (3.000 points/credit hour) or better. Corequisite: CSD 519.

**CSD 522. Deaf Heritage (2).** Considers the history, nature and uses of language and its effect upon human thought and action. Also covers the ideas and ideals expressed by deaf people over many periods of time through drama, philosophy, painting and related areas. *Course includes diversity content.*

**CSD 605. Neuroscience of Speech and Language: Basic Processes (4).** A consideration of basic neuroanatomy and neurophysiology necessary for obtaining an understanding of the representation of speech and language in the human central nervous system and of conditions resulting from neurological impairment. Prerequisites: CSD 301 with a grade of *B* (3.000 points/credit hour) or better, senior standing.

**CSD 705. Counseling in Communication Disorders (2).** Provides information on the structure and conduct of interviews, basic counseling strategies, and consideration of the "helping" role as practiced by communication disorders professionals. Focuses on information supportive of developing effectiveness in these roles. Considers multicultural concerns. *Course includes diversity content.*

**CSD 710. Autism Spectrum Disorders (2).** An overview of the characteristics and etiology of autism spectrum disorders and the knowledge needed to conduct effective communication and language assessments and develop evidence-based treatment strategies for individuals with ASD. Covers guidelines for the assessment and intervention of communication skills, including decision making for the selection of functional communication systems, structured teaching and positive environmental supports for effective learning. *Course includes diversity content.*

**CSD 740. Selected Topics in Communication Sciences and Disorders (1–3).** Individual or group study in specialized areas of communication sciences and disorders. Repeatable for credit to a maximum of 6 hours. Prerequisite: instructor's consent.

**CSD 750. Workshop in Communication Sciences and Disorders (1–4).** Individual or group study in specialized areas of communication sciences and disorders. Repeatable for credit to a maximum of 8 hours.

**CSD 781. Cooperative Education (1–3).** A work-related placement that integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic program. May not be used toward degree requirements. Repeatable for credit. Graded *Cr/NCr*.

### Courses for Graduate Students Only

**CSD 803. Introduction to Psychoacoustics (4).** Fundamental principles, measurement methods, research findings, laboratory practice, and readings relating physical properties of nonspeech and speech sounds to people's subjective sensations and perception responses.

**CSD 804. Clinical Audiology I (4).** Discussion and labs concerning preparation, administration, interpretation and reporting of basic hearing test battery. Students focus on basic interviewing, pure tone air-conduction and bone-conduction testing, speech audiometry, clinical masking, basic immittance audiometry, and written and verbal reporting of audiometric results.

**CSD 805. Clinical Audiology II (3).** Discussion and labs concerning preparation, administration, interpretation and reporting of auditory site-of-lesion test battery. Students focus on diagnostic interviewing, advanced immittance audiometry, audiologic diagnostic evaluation of peripheral and central auditory disorders, nonorganicity and tinnitus, interpreting test battery results using principles of epidemiology and clinical decisions analysis, and written and verbal reporting of audiometric results. Prerequisite: CSD 804.

**CSD 806. Advanced Anatomy and Physiology of the Auditory System (3).** An in-depth study of the structure and function of the ear, emphasizing the conductive and sensory mechanisms and cochlear processes of acoustic signals. Introduces neuroanatomy and electrophysiology of the auditory system, including the efferent system. Highlights major clinical and pathologic correlates to link basic science principles and practice.

**CSD 807. Acoustics and Instrumentation (3).** Study of basic acoustics for the hearing and speech sciences, including physical and mathematical concepts in sound generation, transmission, manipulation, measurement and wave analysis. Introduces the fundamentals of electricity and electronics related to research and clinical application in audiology, including essential concepts and function of circuits and electronic devices, and technical knowledge of major forms of instrumentation.

**CSD 808. Otoacoustic Emissions (2).** Study of theoretical consideration of otoacoustic emissions in evaluating cochlear function and clinical applications of different types of measures, including instrumentation, stimulus and acquisition parameters; effects of intrinsic and extrinsic variables, and interpretation of test results. Prerequisites: CSD 807.

**CSD 809. Language & Literacy for Young Children: Assessment and Intervention (2).** Emphasis on etiology and characteristics of language deficits of young children. Provides current evidence relevant to language assessment and intervention strategies for children birth to school age. Includes examination and development of culturally sensitive individual and family treatment plans, facilitation of emergent literacy, and problem-based application of the descriptive developmental treatment model. Prerequisite: previous coursework in typical language development.

**CSD 810. Motor Speech Disorders (2).** Studies the neurologic bases for motor speech production and dysfunction: dysarthrias and apraxia. Covers assessment of motor speech disorders and clinical management principles and strategies for the speech subsystems of respiration, phonation, articulation, resonance and prosody. Pre- or corequisite: coursework in neuroscience.

**CSD 811. Dysphagia (2).** Covers the disorder of dysphagia as it affects persons of all ages, but with a focus on adults. Examines evidence-based assessment and treatment procedures. Addresses the importance of interprofessional teamwork and ethical issues. Provokes discussions on the art and science of evaluation and intervention in dysphagia management.

**CSD 812. Aphasia (2).** Designed to prepare students for clinical work with people with aphasia. Students integrate background information from neurophysiology to understand aphasia. Emphasis is placed on psycholinguistic and neurolinguistic theories of language processing, assessment, differential diagnosis of neurogenic language disorders, and the development of appropriate restorative and compensatory intervention plans. Also focuses on the clinical description and characteristics of the impairments as well as on the psychosocial changes in life activities and participation of people who live with aphasia.

**CSD 814. Applied Phonology (2).** Reviews current theories on the etiology and development of the disorder. Considers behaviorally based diagnostic procedures for children and adults, as well as methods for clinical intervention, including procedures for parent interviewing and counseling, and multicultural concerns. Provides opportunities for observation, one focus being demonstration of intervention methods.

**CSD 815. Augmentative and Alternative Communication (2).** Provides information about assistive technology for persons with special needs across the life span (e.g., cerebral palsy, degenerative neurological diseases, autism). Considers physical, linguistic and cognitive factors in the design and implementation of assistive technology resources. Provides resources for assessment, intervention, partner training and report writing. Studies use of augmentative and alternative communication systems and computer applications/modifications. Explores resources for purchase and funding of AAC systems.

**CSD 816. Language and Literacy for School-Age and Adolescents (2).** Examination of various approaches to working with children and adolescents with language and literacy deficits which compromise school success. Explores the multidimensional nature of the language and literacy needs of students in the classroom to meet Common Core standards. Includes multicultural aspects and collaboration strategies.

**CSD 817. Voice Disorders (3).** Reviews current knowledge on the symptomatology and etiology of commonly encountered voice disorders in children and adults. Presents procedures for differential diagnosis and clinical intervention, based on a working knowledge of the anatomy and physiology of normal voice production. Considers multicultural issues.

**CSD 818. Fluency Disorders (2).** Reviews current theories on the etiology and development of the disorder. Considers behaviorally based diagnostic procedures for children and adults, as well as methods for clinical intervention, including procedures for parent interviewing and counseling, and multicultural concerns. Provides opportunities for observation, one focus being demonstration of intervention methods.

**CSD 819. Cognitive Communication Disorders (2).** Addresses cognitive communication disorders that result from brain injuries (e.g., traumatic brain injury, right hemisphere stroke and dementia). The similarities and differences between cognition and the language are considered. Evaluation and treatment methods are introduced for adult clients with these acquired disorders.

**CSD 821. Educational Settings Practicum (3).** Provides supervised clinical experiences in identification, diagnosis, evaluation, treatment, referral and counseling of children with speech or language impairments in a school setting. Demonstration of applied clinical skills in the elementary and/or secondary school levels is completed. Prerequisites: CSD 809, 816, 822, medical clearance, liability insurance, and departmental approval one year prior to enrollment.

**CSD 822. General Clinic Practicum (1–2).** Provides supervised clinical experiences in settings with preschoolers, school-aged children and adults with a wide variety of communication disorders. Covers concepts of clinical practice, including diagnosis, data collection, report writing, counseling and treatment techniques. Repeatable for credit Prerequisites: admission to CSD graduate program on a clinical track, medical clearance and liability insurance.

**CSD 823. Medical Settings Practicum (3).** Provides supervised clinical experiences in individual and group therapy diagnostics, documentation, consultations and interdisciplinary staffings in a medical setting. Prerequisites: CSD 810, 811, 812, 822, medical clearance, liability insurance and departmental approval one year prior to enrollment.

**CSD 824. External Placement Practicum (1).** Supervised clinical experiences in off-site locations for advanced clinical experiences in a variety of settings as well as a wide spectrum of speech and language disorders. Repeatable for credit. Prerequisites: CSD 822, medical clearance, liability insurance and departmental approval.

**CSD 831. Auditory Assessment—SLP Practicum (1).** Discusses proper hearing screening techniques for all age groups that are commonly conducted by speech-language pathology students. Students engage in practical experiences throughout the semester.

**CSD 832A. Critical Thinking in Clinical Practice I (4).** Introduction to critical thinking and problem solving related to clinical practice in speech-language pathology. Content includes introduction to evidence-based evaluation/assessment, goal writing, data collection, treatment models and report writing. Case-based inquiry is used along with clinical role playing and cooperative/interprofessional learning. Prerequisite: admission to CSD graduate program.

**CSD 832B. Critical Thinking in Clinical Practice II (4).** Provides further introduction to critical thinking and problem solving related to clinical practice in speech-language pathology. Content includes further discussion of evidence-based evaluation/assessment, goal writing, data collection, treatment models and report writing. Case-based inquiry is used along with clinical role playing and cooperative/interprofessional learning. Prerequisite: CSD 832A.

**CSD 832C. Critical Thinking in Clinical Practice III (4).** Further development of critical thinking and problem solving related to clinical practice in speech-language pathology. Content includes further discussion of evidence-based evaluation/assessment, goal writing, data collection, treatment models and report writing. Case-based inquiry is used along with clinical role playing and cooperative/interprofessional learning. Prerequisites: CSD 832A, 832B.

**CSD 851. Medical Audiology (3).** Introduces medical aspects of hearing impairment and other auditory disorders, emphasizing pathological changes of the auditory system and diagnosis of prevalent diseases related to the auditory system. Links up audiologic findings with otologically diagnosed disorders. Introduces general information on embryologic development of various portions of the auditory system. Addresses fundamental knowledge on human genetics such as DNA structure and function, genes, modes of genetic transmission, hereditary deafness. Discusses application of genetic testing and prenatal diagnosis of genetic disorders. Prerequisite: CSD 806, or instructor's consent.

**CSD 854. Hearing Conservation (2).** Discussion and labs concerning prevention of hearing loss in the workplace, military, community and recreation. Students focus on risk factors of major preventable hearing impairments including noise, chemicals ototoxicity, substance abuse, STDs and prenatal care; measurement, calculation and reporting of noise levels; application of epidemiological principles, forensic audiology and government regulations; and implementing prevention programs through noise control, hearing testing, hearing protection devices, and worker and public education.

**CSD 855. Pediatric and Educational Audiology (3).** Discussion and labs concerning identification, evaluation and intervention with infants, children and adolescents with hearing losses, other auditory problems, or developmental disabilities. Students focus on newborn hearing screening programs, auditory and global development of children and their importance in behavioral, functional and electrophysiological evaluation of hearing and listening; administering school hearing conservation and aural rehabilitation programs, classroom acoustics and amplification, interdisciplinary teamwork and collaboration with families and educators, and legal protections of hearing-impaired students, including individual education plans.

**CSD 860. Amplification I (3).** Introduction to the area of amplification. Students learn basic knowledge and skills in topics such as types of hearing aids, hearing aid components, hearing aid systems, electroacoustic performance and measurement, hearing aid plumbing, basic compression systems, probe microphone verification, hearing aid candidacy, problem solving, assessing outcomes and hearing aid orientation/counseling. Prerequisite: CSD 804.

**CSD 861. Amplification II (3).** Students investigate topics such as advanced probe microphone measures, advanced signal processing, advanced hearing aid design, remote microphone options in amplification, and special amplification options, such as cochlear implants and bone-anchored hearing aids. Students have the opportunity to interact with professionals representing various aspects of the industry. Prerequisite: CSD 860.

**CSD 863. Professional Seminar in Audiology (3).** An exploration of current topics in audiology that delves into principles, practices, innovation, conduct and interpretation of research. Covers professional issues of the field that can impact the profession. Examines current professional, ethical and service issues that can impact the practice of audiology.

**CSD 866. Auditory Evoked Potentials (3).** Provides information on the anatomic and physiologic basis of auditory-evoked potentials generated from the peripheral and central auditory systems. Discusses techniques for the administration and interpretation of auditory-evoked potentials, including cochlear potentials (ECochG), the auditory brainstem responses (ABR), and the late-occurring evoked potentials (MLR, ALAEP, MMN, and P300). The use of evoked potentials in intraoperative monitoring is also discussed. Lab component provides opportunities for hands-on learning and independently performing various auditory-evoked potential tests. Prerequisites: CSD 804, 806.

**CSD 868. Diagnosis and Management of Persons with Balance Disorders (3).** Discussion and labs concerning an audiologist's role in diagnosis and management of persons with vestibular and balance disorders. Students focus on anatomy, physiology, development

and disorders of vestibular and ocular-motor systems; subjective evaluations using interviewing and scaling; objective evaluations using ENG/VNG, rotational testing, posturography and vestibular evoked potentials; balance rehabilitation, and interdisciplinary collaboration and communication. Prerequisite: CSD 806 or instructor's consent.

**CSD 870. Current Topics in Amplification (2).** Explores the role of evidence-based practice in the selection/provision of amplification. Facilitates the critical consumption of current original research in the area of hearing aids. Explores the perceptual effects of new technologies in the form of peer-reviewed journals, trade journals and hearing aid manufacturer's white papers. Discusses additional considerations for special populations. Prerequisites: CSD 860, 861.

**CSD 871. Current Topics in Auditory Disorders (2).** Advanced audiology course covering the latest evidence-based research in evaluation and intervention with persons who have special auditory problems that are increasingly influential for audiologists now and in the future (e.g., tinnitus, hyperacusis, auditory neuropathy, age-related hearing loss, dual sensory loss).

**CSD 886. Clinical Practicum in Audiology (1–2).** Supervised clinical practicum at the WSU Evelyn Hendren Cassat Speech-Language-Hearing Clinic and/or an off-campus clinical rotation site. Clinical expectations and responsibilities vary with the student's level of experience and the requirements of the placement site. Practicum assignments are determined by each student's competency needs, ASHA requirements and availability of rotation sites. Repeatable, but total credit hours may not exceed 8. Prerequisite: departmental approval.

**CSD 890. Independent Study in Speech and Language Pathology or Audiology (1–3).** Arranged individual, directed study in specialized content areas in speech and language pathology or audiology. Repeatable for credit to a maximum of 4 credit hours. Prerequisite: instructor's consent prior to enrollment.

**CSD 891. Nonthesis Research Project (1–3).** A directed research project which may include literature searches, data collection or interpretation of data. Independent projects must involve extensive data collection, analysis and preparation of a written manuscript. Repeatable, but total credit hours may not exceed 5. Prerequisites: research methods course, departmental consent prior to enrollment.

**CSD 892. Presentation of Research (1).** Presentation of a directed research project. Repeatable, but total credit hours may not exceed 3. Prerequisites: CSD 891, research methods course and departmental consent.

**CSD 895. Thesis Research (1–2).** Repeatable, but total credit hours counted toward degree requirements must not exceed 2. Prerequisite: instructor's consent.

**CSD 899. Thesis (1–2).** Repeatable, but total credit hours counted toward degree requirements shall not exceed 2. Prerequisite: instructor's consent.

**CSD 935. Advanced Practicum in Communication Sciences and Disorders (1–4).** Supervised internship in one or more of the following sections: client management, clinical supervision, academic instruction, research and clinical and program administration. Intended for doctoral students or advanced master's-level students. Repeatable; more than one section may be taken concurrently.

**CSD 940. Advanced Selected Topics in Communication Sciences and Disorders (1–4).** Advanced individual or group study in specialized areas of communication sciences and disorders. Intended for doctoral students or advanced master's-level students. Repeatable.

**CSD 990. Advanced Independent Study in Speech and Language Pathology, Audiology or Speech Science (1–3).** Arranged individual, directed study in specialized content areas in speech and language pathology, audiology or speech sciences. Repeatable. Prerequisites: advanced standing and instructor's consent.

**CSD 992. Advanced Presentation of Research (1–3).** A directed research project for doctoral students culminating in a manuscript appropriate for publication.

**CSD 995. Research Proseminar (1).** A weekly seminar of informal discussion and formal presentation of ongoing or planned research by the CSD faculty and doctoral graduate students. Goal is to provide CSD doctoral students with new and valuable knowledge and insights regarding how real-world research is performed. Prerequisite: doctoral student standing.

**CSD 996. University Teaching (1).** A weekly seminar on university teaching. The pedagogy, theories and research of teaching are discussed through presentation of readings, observation of teaching, and teaching experiences. The goal is to provide doctoral students with information and experience in university teaching. Repeatable. Prerequisite: doctoral student standing.

**CSD 997. Audiology Residency (4 or 7).** Full-time supervised clinical experience at an approved clinical facility. Repeatable, but total credit hours may not exceed 18. Prerequisite: advancement to candidacy in the AuD program.

**CSD 999. Doctoral Dissertation (1–18).** Repeatable. Graded *S/U.*

## Physical Therapy (PT)

**Graduate Faculty**

*Professors*: Robert Manske (chairperson), Kenneth Pitetti, Barbara Smith

*Associate Professors:* Camilla Wilson (graduate coordinator)

*Assistant Professor:* B.J. Lehecka

*Clinical Assistant Professor:* Jennifer Celso, Mike Rogers

*Clinical Educator:* Lisa Garcia

### Doctor of Physical Therapy

The program prepares individuals to enter beginning practice as physical therapists. Graduates are prepared to evaluate neuromuscular, musculoskeletal, sensorimotor, and related functions to determine the degree of muscle strength, motor development, motion, respiratory ventilation or peripheral circulatory efficiency of individuals. The physical therapist plans and implements appropriate interventions for clients. Graduates are prepared to work in preventive health care as well as rehabilitative care. The program requires full-time study for a period of 36 consecutive months. Students enter the program in the summer semester only.

*Please contact the physical therapy graduate program office for the most recent information regarding curriculum.*

***Admission Requirements***

1. Bachelor's degree from regionally accredited institution;
2. Minimum grade requirements: 3.000 GPA in the last 60 semester credit hours; 3.000 GPA in prerequisite courses; and 3.000 overall GPA. Receive a grade that generates at least 2.000 credit points per credit hour in all prerequisite courses;
3. Prerequisite courses must be completed by the end of the spring semester prior to the beginning of summer courses in the curriculum: biology—one semester of introductory biology with a laboratory; anatomy and physiology—minimum of 5 hours with laboratory; college chemistry—two semesters with laboratories; college physics—two semesters with laboratories; English composition—two semesters; exercise physiology—one semester; medical terminology—one semester hour minimum; speech—one semester; mathematics—college trigonometry or equivalent; statistics—one semester; social sciences—psychology, one introductory course and one advanced course;
4. Math/science prerequisite coursework can be no more than 10 years old at the time of application to the DPT program. Coursework more than 10 years old will need to be repeated for a letter grade;
5. Physical therapy clinical observation of twenty (20) hours in one or more physical therapy departments;
6. International students must submit a minimum TOEFL score of 600 paper-based, or 100 Internet-based; and
7. Official scores from the General Aptitude section of the Graduate Record Examination (GRE), taken within the last five years, with verbal and quantitative sections combined scores to be greater than 290.

To be reviewed for admission, applicants should do the following:

1. Seek an application packet from the Graduate School, and review application process at www.ptcas.org;
2. Submit the designated application for admission and supporting transcripts to the Graduate School; and
3. Submit the designated application to Physical Therapist Centralized Application Service (PTCAS) by the published deadline.

*Any applicant who has completed entry-level physical therapist education, regardless of degree or location of program, will* ***not*** *be considered for admission to the entry-level DPT program at Wichita State University.*

Complete applications are reviewed when received by the department in a timely manner. Applicants will be notified of their admission status by the Graduate School. Once an applicant has been admitted, he or she will be asked to submit a $100 nonrefundable tuition deposit to reserve a space for the summer admission. Once

the student enrolls, this money will be counted toward payment of tuition.

Students are advised to contact the department for any changes in the program course requirements or in prerequisite requirements. Information is also available on the department website: wichita.edu/pt.

***Degree Requirements***

The student must maintain a 3.000 GPA as required by the Graduate School and achieve a grade that generates at least 2.000 credit points per credit hour in each of the following courses:

*Please contact the physical therapy graduate program office for the most recent information regarding curriculum.*

*First Year*
*Summer Semester*.....*hrs.*
PT 700 Pathophysiology for Physical Therapists .....3
PT 708 Intro. to Professional Practice I ....2
PT 709 Foundations of Therapeutic Ex. .3
PT 755 Clinical Pharmacology for Physical Therapists .....2

*Fall Semester*
PT 725 Anatomy for Phys. Therapists ....6
PT 731 Clinical Kinesiology .....3
PT 736 Physical Agents .....4
PT 741 Clinical Pract. & Seminar I .....2
PT 751 Foundations of Research .....2

*Spring Semester*
PT 761 Clinical Pract. & Seminar II .....2
PT 770 Musculoskeletal Clinical Medicine .....2
PT 771 Critical Inquiry I .....2
PT 772 Foundations of Clinical Skills.....2
PT 773 Neuroscience I .....2
PT 774 Neuromuscular Interventions I ..2
PT 781 Foundations of Musculoskeletal Examination & Intervention..... 3
PHS 824 Cultural Competency in Health Care.....3

*Second Year*
*Summer Semester*.....*hrs.*
PT 800 Clinical Education I .....4
PT 850 Clinical Education II .....4

*Fall Semester*
PT 821 Professional Practice I .....2
PT 831 Musculoskeletal Mgmt. of the Upper Quarter .....3
PT 848 Life Span of the Adult .....2
PT 851 Critical Inquiry II .....2
PT 853 Neuroscience II .....2
PT 854 Neuromuscular Interventions II..2
PT 858 Prosthetics and Orthotics.....2
PT 859 Integumentary Conditions & Acute Care.....2
PT 891 Musculoskeletal Mgmt. of the Cervical/Thoracic Spine & TMJ ...2

*Spring Semester*
PT 861 Professional Practice II .....3
PT 871 Critical Inquiry III .....2
PT 874 Neuromuscular Interven. III .....2
PT 877 Clinical Knowledge & Practice in Cardiovascular & Pulmonary Conditions .....2
PT 881 Musculoskeletal Management of the Lower Quarter .....3
PT 892 Musculoskeletal Management of the Lumbar Spine and Pelvis...1
PT 898 Life Span of the Infant & Child....2
PT 899 Principles of Education for PT .....2

*Third Year*
*Summer Semester*.....*hrs.*
PT 900 Clinical Education III .....10

*Fall Semester*
PT 950 Clinical Education IV .....10
Electives: Students may take up to 3–4 credit hours.

*Spring Semester*
PT 970 Clinical Education V .....10
PT 975 Diagnostic Imaging for the Physical Therapist .....1
PT 990 Clinical Conference I .....1

*Elective(s):* 3 credit hours required to complete program. Students may take up to 3–5 additional credit hours of elective coursework, with departmental consent. The courses include PT 790, 799, 840, 932, 933, 934, 941, 942, 943, 951 or 980.

## Special Requirements

Students will be required to purchase uniforms and other clinical apparel, professional liability insurance, health insurance coverage, and specified immunizations, as well as submit evidence of an annual physical examination while in the program. Students must also be certified in cardiopulmonary resuscitation (CPR) prior to entering the program, and must maintain that certification during their enrollment in the curriculum.

Students are expected to provide their own transportation to and from the health care facilities used for clinical experiences. During clinical assignments outside Wichita, students may be required to pay all living and travel expenses.

Students are referred to the Department of Physical Therapy Student Handbook for more details on special departmental policies and procedures.

### Courses for Graduate Students Only

**PT 700. Pathophysiology for Physical Therapists (3).** Focuses on the differentiation of major disease pathophysiology at the micro and macro levels. Content is specific to physical therapists and emphasizes causes and effects on the overall physical capacities of a patient/client as they relate to prevention and rehabilitation.

**PT 708. Introduction to Professional Practice I (2).** Focuses on foundational concepts of the profession of physical therapy and doctoring professions. Knowledge in psychological development and dynamics is related to interactions with patients and clients. Students have the opportunity to evaluate individual values and personality preferences that influence their interactions with others, and to develop interpersonal skills for working effectively with patients, families and professional colleagues. Appreciation of psychological and social diversity is emphasized.

**PT 709. Foundations of Therapeutic Exercise (3).** An introduction to the scientific principles of therapeutic exercise foundations and techniques for physical therapists. Designed to follow the Guide to Physical Therapist Practice. Laboratory sessions include skill development for safe, effective use of commonly used therapeutic exercise equipment.

**PT 725. Anatomy for Physical Therapists (6).** Presents a regional approach to the structure of the human body, using supervised dissection of human cadavers, observation of prosected materials, radiographic films and anatomical models. Emphasis is placed on surface anatomy and the neuromuscular, cardiovascular and skeletal systems.

**PT 731. Clinical Kinesiology (3).** Details and analyzes kinesiological and biomechanical foundations that are required to differentiate causes of musculoskeletal dysfunction.

**PT 736. Physical Agents (4).** Presents concepts and practical applications of a host of therapeutic modalities. Indications, contraindications and the appropriateness of these modalities are assessed.

**PT 741. Clinical Practicum & Seminar I (2).** The first of a two-course series that builds on the integration of physical therapy knowledge, skills and professional values within a seminar setting and part-time clinical experience. A variety of professional and practice issues are examined, and the student gains observational experiences in a variety of acute, outpatient and rehabilitation settings.

**PT 751. Foundations of Research (2).** Critical analysis of the scientific literature focusing on design and statistics for physical therapy and related disciplines. Successful completion of this course gives the student a foundation for designing and interpreting a research project or paper.

**PT 755. Clinical Pharmacology for Physical Therapists (2).** Details major classes of pharmacological agents. Pharmacokinetics, mechanisms of action, side effects, drug interactions, contraindications, therapeutic use and appropriate drug monitoring are addressed. Clinical application of this knowledge emphasizes the physical therapist's role in assessment, management and proper referral of patients experiencing subtherapeutic benefits or drug-related problems.

**PT 761. Clinical Practicum & Seminar II (2).** The second of a two-course series that culminates with the integration of physical therapy knowledge, skills and professional values within a seminar setting and part-time clinical experience. A variety of professional and practice issues are examined, and the student gains observational experiences in a variety of acute, outpatient and rehabilitation settings.

**PT 770. Musculoskeletal Clinical Medicine (2).** Differentiates etiology, diagnosis, pathology, medical treatment and prognosis for orthopedic conditions that are managed by physical therapists.

**PT 771. Critical Inquiry I (2).** The first in a series of three consecutive research application courses following Foundations of Research for physical therapy and related disciplines. Students work with an assigned advisor to plan either a research project or a research paper, that will be implemented and evaluated in subsequent courses.

**PT 772. Foundations of Clinical Skills (2).** Provides specialized instruction for common patient care skills including bed positioning, transfers, gait training with assistive devices, vital signs, infection control and selected screening tests.

**PT 773. Neuroscience I (2).** First of two courses describing the relationship of structure and function of the nervous system with selected neuromuscular conditions. Specifically covers the spinal cord, cerebral cortex, autonomic nervous system, and the effects of injury/disease to these structures. For students enrolled in physical therapy education program.

**PT 774. Neuromuscular Interventions I (2).** First of three courses detailing examination, assessment and interventions for patients with neuromuscular conditions. Patients with spinal cord injuries and cerebral vascular accident are assessed and evaluated.

**PT 781. Foundations of Musculoskeletal Examination & Intervention (3).** Emphasizes the scientific foundation and clinical rationale used during assessment, evaluation and intervention with musculoskeletal conditions. Provides specialized instruction in the art of palpating surface anatomy, performance of manual muscle testing, and goniometric measurements. An emphasis is placed on the clinical and scientific literature pertaining to evaluation and treatment of musculoskeletal conditions.

**PT 790. Selected Topics in Physical Therapy (1–4).** Intensive study of current issues, technology, research and application of selected topic.

**PT 799. Experimental Courses (1–4).** One-time course offerings.

**PT 800. Clinical Education I (4).** Prepares the student to provide physical therapy care in varied settings requiring communication and interpersonal relations skills, professional socialization, application of physical therapy procedures, beginning development of a generalist in physical therapy. Graded *S/U.*

**PT 821. Professional Practice I (2).** The first of two courses designed to provide students with an overview of health systems, health regulation, risk management, and administrative theory and principles as related to the practice of physical therapy. Primary focus is health policy and health systems.

**PT 831. Musculoskeletal Management of the Upper Quarter (3).** Emphasizes the scientific foundation and clinical rationale used during assessment, evaluation and intervention with musculoskeletal conditions. Builds on the foundations from various courses during the first year of the DPT curriculum. It provides an in-depth study of different injuries and lesions, specific evaluation techniques, and treatments of those injuries and pathologies of the upper quarter. Emphasis is placed on organizing and synthesizing information from courses throughout the physical therapy curriculum to allow integration of problem-solving skills that enables students to better make the transition from students to competent practicing physical therapists.

**PT 840. Directed Study (1–3).** Individual study with a focus developed in collaboration with a departmental faculty member. Allows students to pursue an area of special interest in physical therapy.

**PT 848. Life Span of the Adult (2).** Focuses on the relationship of structure and function to the development of movement skills through older age. First of two courses.

**PT 850. Clinical Education II (4).** Prepares the student to provide physical therapy care in varied settings requiring communication and interpersonal relations skills; professional socialization, application of physical therapy procedures, continuing development of a generalist in physical therapy. Graded *S/U.*

**PT 851. Critical Inquiry II (2).** The second in a series of three consecutive research application courses following Foundations of Research for physical therapy and related disciplines. Students work with an assigned advisor to collect data, complete statistical analyses (as appropriate), and complete a preliminary draft of either a research project or a research paper.

**PT 853. Neuroscience II (2).** Second of two courses describing the relationship of structure and function of the nervous system with selected neuromuscular conditions. Specifically covers the brainstem, cerebellum, basal ganglia and diencephalon, and the effects of injury/disease to these structures. For students enrolled in physical therapy education program.

**PT 854. Neuromuscular Interventions II (2).** Second of three courses detailing examination, assessment and interventions for patients with neuromuscular conditions. Patients with problems of the visual system and the basal ganglia are assessed and evaluated.

**PT 858. Prosthetics and Orthotics (2).** Addresses selected integumentary system conditions and special conditions. Focuses on examination, clinical decision making, and treatment planning for patients/clients with these conditions. Interventions using prosthetics and orthotics are emphasized. Roles of other health care team members including prosthetists and orthotists and interactions with physical therapists are discussed relative to these conditions.

**PT 859. Integumentary Conditions and Acute Care (2).** Addresses selected integumentary system conditions and the acute care practice setting. Focuses on examination, clinical decision making, and treatment planning for these conditions. Roles of other health care team members and interactions with physical therapists in the acute care settings are discussed relative to integumentary conditions. Prerequisite: departmental consent.

**PT 861. Professional Practice II (3).** The second of two courses designed to provide students with an understanding of health systems, health regulation, risk management, and administrative theory and principles as related to the practice of physical therapy. The primary focus is understanding legal concerns, risk management, and planning, applying and interviewing for employment in the physical therapy profession.

**PT 871. Critical Inquiry III (2).** The third in a series of three consecutive research application courses following Foundations of Research for physical therapy and related disciplines. Students work with an assigned advisor to finalize and disseminate either a research project or a research paper and give a formal oral presentation of their work.

**PT 874. Neuromuscular Interventions III (2).** Third of three courses detailing examination, assessment and interventions for patients with neuromuscular conditions. Patients with problems of sensory integration, motor control and the vestibular system are assessed and evaluated.

**PT 877. Clinical Knowledge and Practice in Cardiovascular and Pulmonary Conditions (2).** Develops clinical skills in examining, assessing and managing patients/clients with cardiovascular and pulmonary impairments. Common pathophysiology of the cardiovascular and pulmonary system are covered.

**PT 881. Musculoskeletal Management of the Lower Quarter (3).** Reviews the basic scientific foundation and clinical rationale used during evaluation, assessment and treatment of musculoskeletal conditions of the lower quarter. Elaborates on the foundations brought forth from various courses during the first year of the DPT curriculum. Evokes an in-depth study of different injuries and lesions, specific evaluation techniques, and treatments of those injuries and pathologies. Emphasis is placed on organizing and synthesizing information from courses throughout the physical therapy curriculum to allow integration and problem-solving skills that enables students to better make the transition from students to competent practicing physical therapists.

**PT 891. Musculoskeletal Management of the Cervical/Thoracic Spine and TMJ (2).** Introduces the student to the basic scientific foundation and clinical rationale used during evaluation, assessment and treatment of musculoskeletal conditions of the cervical/thoracic spine and TMJ. Designed to build on the foundations brought forth from previous courses. Studies in depth different injuries and lesions, specific evaluation techniques, and treatment of those injuries and pathologies of the cervical spine, thoracic spine and TMJ. Emphasis is placed on organizing and synthesizing information from courses throughout the physical therapy curriculum to allow integration and problem solving skills that enable students to better make the transition from students to competent practicing physical therapists.

**PT 892. Musculoskeletal Management of the Lumbar Spine and Pelvis (1).** Introduces the student to the basic scientific foundation and clinical rationale used during evaluation, assessment, and treatment of musculoskeletal conditions of the lumbar spine and pelvis. Designed to build on the foundations brought forth from previous courses. Studies in depth different injuries and lesions, specific evaluation techniques, and treatments of those injuries and pathologies of the lumbar spine and pelvis. Emphasis is placed on organizing and synthesizing information from courses throughout the physical therapy curriculum to allow integration and problem solving skills that enables students to better make the transition from students to competent practicing physical therapists.

**PT 898. Life Span of the Infant & Child (2).** Focuses on the relationship of structure and function to the development of movement skills from birth through adolescence. Second of two courses.

**PT 899. Principles of Education for Physical Therapists (2).** Applies teaching and learning theories as they apply to physical therapy education of patients, students, health professionals and community. Methods of evaluating instruction, content, strategies and learners are included.

**PT 900. Clinical Education III* (10).** First in a series of three 10-week courses offering continued development of clinical management of patients in varied clinical settings. Includes managerial aspects of care, teaching and some opportunities for clinical research.

**PT 905. Manual Physical Therapy (2).** Course specializes in teaching advanced orthopedic manual physical therapy techniques. Designed to follow the *Guide to Physical Therapist Practice*. Laboratory sessions include skill development for safe, effective use of manual therapy techniques, including mobilizations and manipulations. Prerequisite: departmental consent.

**PT 932. PT Sports Orthopedics (2).** Introduces the student to the basic foundation of sports physical therapy. Includes education related to assessment and

treatment of sports related injuries, emergency care, and musculoskeletal conditions, skin conditions, environmental conditions and use of protective equipment. Designed for individuals ultimately seeking specialization in the area of sports physical therapy and eventually working toward ABPTS—Sports PT Section Advanced Clinical Competencies.

**PT 933. Advances in Orthotics for Orthopedics (1).** Introduces the student to the rationale and the clinical application of a variety of treatment approaches for patients with hand or foot pathology. Splint fabrication and application for the upper extremity are covered. Lower extremity orthotics prescription, ordering, fabrication and fitting are covered.

**PT 934. PT Advanced Strength and Conditioning in the Athletic Population (2).** Introduces the student to the basic foundation of strength and conditioning principles. Includes education related to assessment of strength and power in the athletic population, adaptations to such training, and program design for this specialized population. Designed for physical therapists ultimately seeking specialization in the area of athletic strength and conditioning, with goals of pursuing certification in Olympic weightlifting and/or as a certified strength and conditioning specialist.

**PT 941. PT Program Planning, Implementation and Evaluation I (2).** Students develop a service learning or clinical program with five primary components: needs analysis, program proposal, marketing, delivery and assessment.

**PT 942. PT Program Planning, Implementation and Evaluation II (2).** Students continue to develop a service learning or clinical program with five primary components: needs analysis, program proposal, marketing, delivery and assessment.

**PT 943. Practice Management (2).** Designed for the student whose goals are to manage a therapy department and/or start a private practice. Familiarizes students with assessing the marketplace, developing policies and procedures for the department/practice, planning and designing a facility, hiring personnel and other staffing considerations, marketing the department/practice, budgeting, knowing requirements necessary to meet local, state and federal regulations, and developing a business plan. The student partners with an appropriate mentor.

**PT 950. Clinical Education IV* (10).** Second in a series of three 10-week courses offering continued development of clinical management of patients in varied clinical settings. Includes managerial aspects of care, teaching and some opportunities for clinical research.

**PT 951. Evidence-Based Practice (1).** Focuses on the use of current best evidence from clinical care research in the management of patients. Students gain knowledge of how to understand and appraise evidence from research.

**PT 961. Women's Health Physical Therapy (2).** Introductory course in the study of anatomy, diagnosis and treatment of topics in women's health physical therapy. Topics include evaluation and treatment techniques for obstetrical and postpartum clients, urinary and fecal incontinence, chronic pelvic pain, osteoporosis and female athlete considerations.

**PT 970. Clinical Education V* (10).** Last in a series of three 10-week courses offering continued development of clinical management of patients in varied clinical settings. Includes managerial aspects of care, teaching and some opportunities for clinical research.

**PT 975. Diagnostic Imaging for the Physical Therapist (1).** Normal and abnormal radiographic findings in the spine and extremities are covered. Cinemaradiography, functional radiographs, MRI, CT-Scan and tomography are studied. A variety of pathologies affecting the practice of physical therapy are identified. Radiographic findings are correlated to common surgical procedures seen by the physical therapist. Radiographic findings as well as physical findings that require prompt referral to other disciplines within the health care team are also addressed.

**PT 980. Licensure Exam Review (1).** Students review and apply knowledge and skills learned in preceding academic semesters and clinical education experiences, learn test taking strategies, and develop a comprehensive study plan to assist them in preparing for the National Physical Therapy Examination.

**PT 990. Clinical Conference I (1).** Forum for discussion of a clinical case presented by a group of students. Facilitates application and integration of didactic information from the classroom into clinical practice by expanding clinical problem solving through examination of clinical cases. A formal presentation covering selected background information is followed by a presentation of the case. Ideally, research supporting the reliability/validity of evaluation tools and efficacy of treatment is presented as well. Designed to afford students the opportunity to work as a team to present clinical cases to their peers and faculty.

*In the series of three final clinical courses, students experience three different settings including general and rehabilitation practices and a selected area of specialization not limited to pediatrics, geriatrics and orthopedics. The order of the settings is flexible. There is an increase in the level of expectation of performance with each clinical course which is guided by the evaluation process.

# Physician Assistant (PA)

**Graduate Faculty**

*Professors:* LaDonna Hale, Sue Nyberg
*Assistant Professors:* Gina Brown, Kayla Keuter
*Clinical Educators:* Kim Darden, Emily Mirakian, Michelle Wallace

## Master of Physician Assistant

The graduate program in physician assistant studies, located in the department of physician assistant at Wichita State University, is the only one of its kind in Kansas. The program prepares graduates to practice medicine with the supervision of a licensed physician. The functions of a physician assistant include performing diagnostic, therapeutic, preventative and health maintenance services in any setting in which the physician renders care, in order to allow more effective and focused application of the physician's particular knowledge and skills.

The WSU department of physician assistant, accredited by the Accreditation Review Commission on the Education of Physician Assistants (ARC-PA), offers a 26-month (full-time, lock-step) graduate course of study which leads to a professional Master of Physician Assistant degree. The 83-semester-hour program is equally divided into two parts: a didactic phase and a clinical/research phase. One class is admitted each summer.

### *Professional Curriculum*

The professional curriculum is divided into two phases: a didactic phase and a clinical/research phase. Each phase lasts 12–14 months. The didactic phase includes graduate coursework in the basic sciences (anatomy, pharmacology, pathophysiology), clinical medicine, research methods and statistics, epidemiology, behavioral medicine, ethics, preventive medicine and community health, social and legal issues, and clinical skills.

During the clinical/research phase of the program students complete 11 clinical rotations. Focus areas include: family medicine and primary care, pediatrics, prenatal care and women's health, emergency medicine and acute care, general surgery, behavioral health and geriatrics. The WSU PA program enjoys the support of preceptors throughout Kansas. In keeping with the broad range of clinical activities, students have the opportunity to experience a wide variety of clinical rotation sites including at least three rural rotations and three urban, underserved sites. All students will be assigned to clinical rotations outside of the urban areas of Kansas and should therefore expect to spend several months in rural areas of Kansas. Students are expected to pay for transportation, room and board when traveling to clinical rotation sites.

### *Admission*

Minimum requirements for application to the PA program:

1. A bachelor's degree from a regionally accredited U.S. college or university is required prior to matriculation with additional prerequisite coursework below if not included in the bachelor's degree. Core science prerequisite coursework more than 10 years old is subject to departmental review and in most cases applicants will be required to repeat core science prerequisite courses completed more than 10 years ago. Acceptance of foreign bachelor's degrees is decided on an individual basis and after evaluation by a transcript evaluation service.

*Core Science Prerequisites*

- Chemistry (minimum 12 hours with lab). Recommended sequence—chemistry I, chemistry II, biochemistry
- Biology including microbiology (minimum 9 hours with lab). Recommended sequence biology I, biology II, microbiology
- Human anatomy and human physiology with lab (minimum 5 hours);

*Prerequisites (other)*

- Statistics (minimum 3 hours)
- Medical terminology
- General psychology (minimum 3 hours) or higher level psychology

*Recommended Courses*

The following courses are *not* required for admission, but are strongly recommended. These and courses like these provide valuable background to prepare students for admission to the program

and allow applicants to demonstrate their ability to succeed in rigorous science/medical courses similar to what they will encounter in the program.

- Pharmacology—strongly recommended
- Genetics—strongly recommended
- Pathophysiology—strongly recommended
- Biochemistry
- Organic chemistry
- Human nutrition
- Epidemiology
- Gerontology
- Medical ethics
- Health care policy
- Abnormal psychology
- Sociology (upper level)

2. Ideally, candidates should have a bachelor's degree and all prerequisite coursework completed at the time of application. Those who have not completed all coursework can apply if outstanding coursework is within two semesters of completion, however *all* core science prerequisites must be completed at the time of application and only graded components will be counted toward prerequisite coursework. (Other prerequisites can be outstanding at the time of application.) Also, at the time the submission of the CASPA application is made, applicants whose native (first) language is not English must submit their TOEFL or IELTS score. If no TOEFL or IELTS score is received at the time of application, the applicant will not be considered for admission. The bachelor's degree and prerequisite coursework in progress must be completed before starting the program. Successful completion of degree and coursework must be verified if accepted and before acceptance is finalized. All prerequisite coursework must be completed with a C- grade or higher.

3. GPA requirements (on a 4.000 scale) apply to both the degree and core science prerequisites: 3.000.

4. Demonstrated commitment to diversity, leadership and service.

5. Completion of on-site interview with program faculty, which will include (but not be limited to) an assessment of academic potential, motivation and commitment to the PA profession, and interpersonal and communication skills. Not all applicants will be offered an interview.

6. Health care experience (direct patient care) is strongly preferred, but not required.

7. To be considered for the PA program the following three steps must be completed:

a. Primary CASPA (national) application, including all transcripts and letters of recommendation (deadline Sept. 15);

b. Supplemental application—if the program determines that the applicant meets minimum admission requirements (after review of the CASPA application), a supplemental application is mailed to the applicant to be returned within two weeks after receipt; and

c. University Graduate School application, including official transcripts from all institutions attended (deadline Oct. 15).

Notes:

*1. The ability to meet the academic and technical standards for physician assistant students is required (contact the program for more information).*

*2. Application to the program is competitive, which means there are more applications than positions offered each year.*

*3. Refer to the department's website at wichita.edu/pa for complete information.*

### *Special Requirements*

Students will be required to purchase lab coats, medical equipment, professional liability insurance and health insurance coverage. Each year while enrolled in the program, students are required to have an annual health history and physical examination (with documentation of appropriate immunizations and screening tests). Students, at their own expense, must pass a background check prior to entering the program.

Students are expected to provide their own transportation to and from the health care facilities used for clinical experiences (located throughout Kansas). During clinical assignments outside Wichita, students may be required to pay all living expenses.

Students are referred to the department of physician assistant student handbooks for more details on special departmental policies and procedures.

### *Financial Assistance*

Many MPA students seek the assistance of WSU's Office of Financial Aid in applying for loans and grants available for graduate students. In addition, the College of Health Professions awards several fellowships each academic year, and the department of physician assistant has five fellowships available to MPA students once enrolled in the program. Furthermore, there are several national scholarship programs supported by the federal government and national PA associations. Information about such programs is distributed to students during interviews.

### *Degree Requirements*

The following courses are required of all students for program completion:

| | | |
|---|---|---|
| *Summer* | | *(6 hrs.)* |
| PA 789 | Clinical Anatomy | 5 |
| PA 717 | Professional Issues | 1 |
| *Fall* | | *(18 hrs.)* |
| PA 700 | Medical History and Physical Exam | 3 |
| PA 716 | Clinical Laboratory | 2 |
| PA 718 | Clinical Medicine Cardiology | 2 |
| PA 727 | Preventive Medicine | 1 |
| PA 729 | Clinical Behavioral Medicine | 2 |
| PA 731 | Clinical Medicine Dermatology | 1 |
| PA 732 | Clinical Medicine EENT | 2 |
| HS 710 | Applied Clinical Pharmacology | 3 |
| HP 800 | Research Methods for Evidence-Based Practice | 2 |
| *Spring* | | *(17 hrs.)* |
| PA 719 | Clinical Medicine Pulmonology | 2 |
| PA 722 | Clinical Medicine Gastroenterology | 3 |
| PA 724 | Clinical Medicine Obstetrics/ Gynecology | 2 |
| PA 728 | Clinical Med. Endocrinology | 1 |
| PA 730 | Clinical Med. Musculoskeletal | 2 |
| PA 734 | Clinical Medicine Neurology | 1 |
| PA 736 | Applied Clinical Practice | 2 |
| HS 711 | Pharmacological Management of Acute and Chronic Diseases | 3 |
| HP 801 | Interprofessional Evidence-Based Practice | 1 |
| *Summer* | | *(7 hrs.)* |
| PA 721 | Clinical Med. Genitourinary/ Renal | 2 |
| PA 780 | Clinical Skills | 1 |
| PA 801 | Advanced Clinical Rotation I | 4 |
| *Fall* | | *(14 hrs.)* |
| PA 802 | Advanced Clinical Rotation II | 4 |
| PA 803 | Advanced Clinical Rotation III | 4 |
| PA 804 | Advanced Clinical Rotation IV | 4 |
| PA 896 | Directed Study in Research I | 2 |
| *Spring* | | *(14 hrs.)* |
| PA 805 | Advanced Clinical Rotation V | 4 |
| PA 806 | Advanced Clinical Rotation VI | 4 |
| PA 807 | Advanced Clinical Rotation VII | 4 |
| PA 850 | Experiential Learning in Professionalism, Service, Research, and Interprofessional Collaboration | 0 |
| PA 897 | Directed Study in Research II | 2 |
| *Summer* | | *(7 hrs.)* |
| PA 899 | Advanced Clinical Rotation VIII | 7 |

### Courses for Graduate Students Only

**PA 700. Medical History and Physical Exam (3).** Provides advanced theoretical knowledge and skills necessary to obtain an appropriate medical history and physical examination. Includes additional emphasis on the identification of normal and abnormal physical findings. Practice of methods and techniques learned takes place in a faculty-proctored laboratory setting. Opportunities are provided for observation and participation in the medical history and physical examination in inpatient and outpatient settings. Prerequisite: admission to PA professional program.

**PA 716. Clinical Laboratory (2).** Provides foundational and advanced knowledge and skills in the efficient selection and rational interpretation of laboratory tests for the purposes of diagnosing and managing common clinical problems. Appropriate test choices, optimum clinical laboratory use, and limitations of tests are emphasized as well as the pathophysiological basis of laboratory tests. Covers core competencies in genetics necessary to incorporate knowledge and skills into routine health care. Prerequisite: admission to the PA professional program.

**PA 717. Professional Issues (1).** Introduces students to a wide variety of issues relevant to PA practice including common legal, ethical and professional concerns

facing practicing PAs. Emphasis is placed on health care delivery, cultural competency, health care administration, credentialing, continuing education, medical informantics, advancements in medical technology and end-of-life decisions. Prerequisite: admission to the PA professional program.

**PA 718. Clinical Medicine Cardiology (2).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to the cardiovascular system. Emphasizes normal and abnormal cardiovascular development of pediatric, adult and geriatric patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to the cardiovascular system. Prerequisite: admission to the PA professional program.

**PA 719. Clinical Medicine Pulmonology (2).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to the respiratory system. Emphasizes normal and abnormal respiratory development of pediatric, adult and geriatric patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to the respiratory system. Prerequisite: admission to the PA professional program.

**PA 721. Clinical Medicine Genitourinary/Renal (2).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to the genitourinary and renal systems. Emphasizes normal and abnormal genitourinary and renal development of pediatric, adult and geriatric patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to the genitourinary and renal systems. Prerequisite: admission to the PA professional program.

**PA 722. Clinical Medicine Gastroenterology (3).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to the gastrointestinal system. Emphasizes normal and abnormal gastrointestinal development of pediatric, adult and geriatric patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to the gastrointestinal system. Prerequisite: admission to the PA professional program.

**PA 724. Clinical Medicine Obstetrics/Gynecology (2).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to the female reproductive system. Emphasizes normal and abnormal female reproductive development of pediatric and adult patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to the female reproductive system and pregnancy. Prerequisite: admission to the PA professional program.

**PA 726. Physician Assistant Research Methods (3).** An introductory course concerning the basic concepts of research methodology as appropriate to the physician assistant professional. Focuses on types of research, research questions and methods (both qualitative and quantitative), review of basic statistics, interpreting the medical literature using evidence-based techniques, literature reviews, data analysis (using computer technology), reporting results, summarizing findings, and the ethical concerns of research. Successful completion of course gives the student a foundation for designing and interpreting a research project or paper. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Prerequisite: admission to the PA professional program.

**PA 727. Preventive Medicine (1).** Advanced course uses principles of epidemiology, health promotion, and public health research to develop and integrate knowledge and skills related to population-based preventive approaches to health care. Emphasizes behavioral techniques used in making health behavior change, health risk appraisal instruments, health screening, disease and accident prevention, risk factors for major causes of disability, and the distribution and determinants of disease frequency in human populations. Prerequisite: admission to the PA professional program.

**PA 728. Clinical Medicine Endocrinology (1).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to the endocrine system. Emphasizes normal and abnormal endocrine development of pediatric, adult and geriatric patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to the endocrine system. Prerequisite: admission to the PA professional program.

**PA 729. Clinical Behavioral Medicine (2).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to clinical behavioral medicine. Emphasizes normal and abnormal psychological development of pediatric, adult and geriatric patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to behavioral medicine and psychiatry. Prerequisite: admission to the PA professional program.

**PA 730. Clinical Medicine Musculoskeletal (2).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to the musculoskeletal system. Emphasizes normal and abnormal musculoskeletal development of pediatric, adult and geriatric patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to the musculoskeletal system. Prerequisite: admission to the PA professional program.

**PA 731. Clinical Medicine Dermatology (1).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to the dermatological system. Emphasizes normal and abnormal dermatological development of pediatric, adult and geriatric patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to the dermatological system. Prerequisite: admission to the PA professional program.

**PA 732. Clinical Medicine EENT (2).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to the EENT system. Emphasizes normal and abnormal EENT development of pediatric, adult and geriatric patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to the EENT system. Prerequisite: admission to the PA professional program.

**PA 734. Clinical Medicine Neurology (1).** Advanced pathophysiologic and clinical assessment and management course uses an evidence-based practice approach to develop and integrate knowledge and skills related to the neurological system. Emphasizes normal and abnormal neurological development of pediatric, adult and geriatric patients, major disease pathophysiology, diagnosis, treatment, prognosis and disease prevention as it relates to the neurological system. Prerequisite: admission to the PA professional program.

**PA 736. Applied Clinical Practice (2).** Advances theories and skills learned in PA 700 by emphasizing patient management, clinical problem solving, and critical thinking skills in both inpatient and outpatient settings. Includes small-group discussions, problem-oriented physical examinations (POPEs), objective-structured clinical examinations (OSCEs), and experiences in cultural awareness. Medical documentation, reimbursement and managed care are also emphasized. Prerequisite: admission to PA professional program.

**PA 780. Clinical Skills (1).** Course integrates both didactic and hands-on instruction to develop knowledge and skills required to perform a variety of common medical procedures as well as advanced cardiac life support. Students have the opportunity to practice and then demonstrate competency in these skills. Prerequisite: admission to the PA professional program.

**PA 789. Clinical Anatomy (5).** A graduate-level clinical anatomy course that emphasizes an advanced understanding and integration of human anatomy of the back, upper extremity, lower extremity, head, neck, thorax, and gastrointestinal and genitourinary systems. Course material is delivered through a combination of online lecture and cadaver lab instruction. Prerequisite: admission to the PA professional program.

**PA 801. Advanced Clinical Rotation I (4).** Supervised clinical experience that builds on pathophysiologic assessment, analysis, and application of the didactic coursework completed during the first year of the program. This includes: taking a history and performing physical exams, using laboratory and diagnostic studies, formulating the most likely diagnosis, recommending appropriate pharmaceutical therapies and other clinical interventions, and applying concepts of basic science. Clinical rotation sites may be in inpatient or outpatient settings. Students are expected to augment their clinical experiences with a regular program of reading, concentrating on topics and problems they have encountered with their assigned patients. This course also includes assessment of knowledge and skills through standardized means, discussion of professional practice, and methods to advance competencies for the physician assistant profession in the following areas: medical knowledge, interpersonal and communication skills, patient care, professionalism, practice-based learning and improvement, and systems-based practice. Prerequisite: successful completion of the didactic phase of the physician assistant program.

**PA 802. Advanced Clinical Rotation II (4).** Supervised clinical experience that builds on pathophysiologic assessment, analysis, and application of the didactic coursework completed during the first year of the program. This includes: taking a history and performing physical exams, using laboratory and diagnostic studies, formulating the most likely diagnosis, recommending appropriate pharmaceutical therapies and other clinical interventions, and applying concepts of basic

science. Clinical rotation sites may be in inpatient or outpatient settings. Students are expected to augment their clinical experiences with a regular program of reading, concentrating on topics and problems they have encountered with their assigned patients. This course also includes assessment of knowledge and skills through standardized means, discussion of professional practice, and methods to advance competencies for the physician assistant profession in the following areas: medical knowledge, interpersonal and communication skills, patient care, professionalism, practice-based learning and improvement, and systems-based practice. Prerequisite: successful completion of the didactic phase of the physician assistant program.

**PA 803. Advanced Clinical Rotation III (4).** Supervised clinical experience that builds on pathophysiologic assessment, analysis, and application of the didactic coursework completed during the first year of the program. This includes: taking a history and performing physical exams, using laboratory and diagnostic studies, formulating the most likely diagnosis, recommending appropriate pharmaceutical therapies and other clinical interventions, and applying concepts of basic science. Clinical rotation sites may be in inpatient or outpatient settings. Students are expected to augment their clinical experiences with a regular program of reading, concentrating on topics and problems they have encountered with their assigned patients. This course also includes assessment of knowledge and skills through standardized means, discussion of professional practice, and methods to advance competencies for the physician assistant profession in the following areas: medical knowledge, interpersonal and communication skills, patient care, professionalism, practice-based learning and improvement, and systems-based practice. Prerequisite: successful completion of the didactic phase of the physician assistant program..

**PA 804. Advanced Clinical Rotation IV (4).** Supervised clinical experience that builds on pathophysiologic assessment, analysis, and application of the didactic coursework completed during the first year of the program. This includes: taking a history and performing physical exams, using laboratory and diagnostic studies, formulating the most likely diagnosis, recommending appropriate pharmaceutical therapies and other clinical interventions, and applying concepts of basic science. Clinical rotation sites may be in inpatient or outpatient settings. Students are expected to augment their clinical experiences with a regular program of reading, concentrating on topics and problems they have encountered with their assigned patients. This course also includes assessment of knowledge and skills through standardized means, discussion of professional practice, and methods to advance competencies for the physician assistant profession in the following areas: medical knowledge, interpersonal and communication skills, patient care, professionalism, practice-based learning and improvement, and systems-based practice. Prerequisite: successful completion of the didactic phase of the physician assistant program.

**PA 805. Advanced Clinical Rotation V (4).** Supervised clinical experience that builds on pathophysiologic assessment, analysis, and application of the didactic coursework completed during the first year of the program. This includes: taking a history and performing physical exams, using laboratory and diagnostic studies, formulating the most likely diagnosis, recommending appropriate pharmaceutical therapies and other clinical interventions, and applying concepts of basic science. Clinical rotation sites may be in inpatient or outpatient settings. Students are expected to augment their clinical experiences with a regular program of reading, concentrating on topics and problems they have encountered with their assigned patients. This course also includes assessment of knowledge and skills through standardized means, discussion of professional practice, and methods to advance competencies for the physician assistant profession in the following areas: medical knowledge, interpersonal and communication skills, patient care, professionalism, practice-based learning and improvement, and systems-based practice. Prerequisite: successful completion of the didactic phase of the physician assistant program.

**PA 806. Advanced Clinical Rotation VI (4).** Supervised clinical experience that builds on pathophysiologic assessment, analysis, and application of the didactic coursework completed during the first year of the program. This includes: taking a history and performing physical exams, using laboratory and diagnostic studies, formulating the most likely diagnosis, recommending appropriate pharmaceutical therapies and other clinical interventions, and applying concepts of basic science. Clinical rotation sites may be in inpatient or outpatient settings. Students are expected to augment their clinical experiences with a regular program of reading, concentrating on topics and problems they have encountered with their assigned patients. This course also includes assessment of knowledge and skills through standardized means, discussion of professional practice, and methods to advance competencies for the physician assistant profession in the following areas: medical knowledge, interpersonal and communication skills, patient care, professionalism, practice-based learning and improvement, and systems-based practice. Prerequisite: successful completion of the didactic phase of the physician assistant program.

**PA 807. Advanced Clinical Rotation VII (4).** Supervised clinical experience that builds on pathophysiologic assessment, analysis, and application of the didactic coursework completed during the first year of the program. This includes: taking a history and performing physical exams, using laboratory and diagnostic studies, formulating the most likely diagnosis, recommending appropriate pharmaceutical therapies and other clinical interventions, and applying concepts of basic science. Clinical rotation sites may be in inpatient or outpatient settings. Students are expected to augment their clinical experiences with a regular program of reading, concentrating on topics and problems they have encountered with their assigned patients. This course also includes assessment of knowledge and skills through standardized means, discussion of professional practice, and methods to advance competencies for the physician assistant profession in the following areas: medical knowledge, interpersonal and communication skills, patient care, professionalism, practice-based learning and improvement, and systems-based practice. Prerequisite: successful completion of the didactic phase of the physician assistant program.

**PA 850. Experiential Learning in Professionalism, Service, Research and Interprofessional Collaboration (0).** Encourages students to integrate and enhance personal development of key physician assistant competencies such as professionalism, interpersonal skills, patient care skills, compassion, sensitivity to diversity, and practice-based learning through experiential learning activities followed by reflection and discussion. Students engage in a variety of required and elective faculty-led and student-led activities within the categories of: (1) professionalism, (2) service-learning/community service, (3) research/evidence-based practice and lifelong learning, and (4) interprofessional patient-centered teamwork. *Course includes diversity content.* Graded *S/U.*

**PA 896. Directed Study in Research I (2).** First in a series of two courses in which students work with an assigned faculty advisor to plan and develop the required master's-level evidence-based project, paper, and oral defense. Prerequisite: admission to the PA professional program.

**PA 897. Directed Study in Research II (2).** Second in a series of two courses in which students work with an assigned faculty advisor to complete and finalize the required master's-level evidence-based project, paper, and oral defense. Prerequisites: PA 896, admission to the PA professional program.

**PA 899. Advanced Clinical Rotation VIII (7).** Supervised clinical experience that builds on pathophysiologic assessment, analysis, and application of the didactic coursework completed during the first year of the program. This includes: taking a history and performing physical exams, using laboratory and diagnostic studies, formulating the most likely diagnosis, recommending appropriate pharmaceutical therapies and other clinical interventions, and applying concepts of basic science. Clinical rotation sites may be in inpatient or outpatient settings. Students are expected to augment their clinical experiences with a regular program of reading, concentrating on topics and problems encountered with assigned patients, with the goal of advancing competencies for the PA profession in the following areas: medical knowledge, interpersonal and communication skills, patient care, professionalism, practice-based learning and improvement, and systems-based practice.

## Public Health Sciences (PHS)

**Graduate Faculty**

*Professors*: Ngoyi K. Bukonda, Peter A. Cohen, Richard D. Muma (associate vice president for academic affairs), Suzanne Hawley
*Associate Professor*: Nicole Rogers (chair)
*Assistant Professors*: Amy Chesser, Nicole Woods
*Instructors*: Amy Drassen-Ham, Ron Stephen
*Teaching Unclassified Professionals:* Sarah Taylor, Jacie Green

The Department of Public Health Sciences offers a Master of Arts in aging studies. A graduate certificate in public health is available for individuals whose primary goal is core public health training.

### Aging Studies (AGE)

The aging studies program offers the Master of Arts (MA) degree in aging studies, coursework for the Bachelor of Arts field major in aging studies, coursework for the Bachelor of General Studies with an emphasis in aging studies, an undergraduate minor in aging studies, and the administrator-in-training (AIT) for long-term care. Because aging studies is concerned with gaining and applying knowledge about all aspects of aging in a wide range of professional settings, it is by nature, multidisciplinary and interprofessional. Aging studies includes the perspectives of numerous disciplines concerned with the physical, mental and social aspects of life. Understanding the aging process is vital to understanding the aging workforce, planning, marketing and delivering services to people who are aging, and

educating individuals upon whom aging will have an impact.

### *Master of Arts in Aging Studies*

The MA in aging studies requires completion of 39 credit hours. Core courses comprise 21 credit hours. Additional hours are chosen within three curricular concentrations: social science*, public health, and administration. Students choose from one of three study options: thesis, internship, and coursework, to complete the program. The aging studies program provides quality distance education, enabling students to earn the MA from anywhere in the state or country.

Students maximize career potential by complementing their existing experience and educational background. Skill sets are diversified by a curriculum applicable to a wide range of professional settings. Students may transition a career/area of interest to an aging service position within another industry (e.g. social work, senior living, senior services, nursing home administration, fitness, nutrition, business). The aging studies curriculum incorporates a variety of perspectives from the numerous disciplines concerned with the physical, mental and social aspects of life.

*The social studies track is offered fully online.

#### *Admission Requirements*

1. Admission to the Graduate School at Wichita State University;

2. A grade point average of 2.750 (4.000 system), in the last 60 credit hours of their bachelor's degree; and

3. International applicants must have a score higher than 550 paper-based, or 79 Internet-based, on the TOEFL examination or an overall minimum band score of 6.5 on the IELTS examination.

Additional supporting documents:

1. Contact information for two professional references;

2. A personal statement reflective of their desire for admittance to the aging studies program; and

3. Documentation of computer literacy including word processing, email, file attachments and Internet searches. Students are highly encouraged to review the information found on the Wichita State Office of Online Learning website, paying particular attention to the Introduction to Online Learning, and Computer Skills and Preparation information.

To be reviewed for admission, applicants should do the following:

1. Submit the designated application for admission and supporting transcripts to the Graduate School ; and

2. Submit the additional supporting documents to the aging studies program director, email: agingstudies@wichita.edu (preferred);

or by mail:

Aging Studies Program Director
Wichita State University
1845 Fairmount, Campus Box 43
Wichita, Kansas 67260-0043

The application deadline is July 15 for fall admission; December 1st for spring admission. Applications are reviewed when the application and supporting documents are received by the program director. Applicants will be notified of their admission status by the Graduate School. Upon enrollment, he or she will be assessed a $50 nonrefundable acceptance fee. For additional details, please see the program website at wichita.edu/AGE.

#### *Degree Requirements*

*Core Courses ..... (21 hrs.)*

| | | |
|---|---|---|
| AGE 622 | Public Health and Aging | 3 |
| AGE 717 | Health Comm. & Aging | 3 |
| AGE 765 | The Medicare System | 3 |
| AGE 798 | Interprofessional Perspectives on Aging | 3 |
| AGE 804 | Aging Programs and Policies | 3 |
| AGE 818 | Biology of Aging | 3 |
| HP 800 | Research Methods for Evidence-Based Practice | 2 |
| HP 801 | Interprofessional Evidence-Based Practice | 1 |

#### *Concentrations*

*Social Science*

| | | |
|---|---|---|
| AGE 813 | Sociology of Aging | 3 |
| AGE 814 | Psychology of Aging | 3 |
| AGE elective | | 3 |
| AGE elective | | 3 |
| *Total Concentration Hours* | | *(12 hrs.)* |

*Public Health ..... (choose 12 hrs.)*

| | | |
|---|---|---|
| PHS 804 | Principles of Statistics in the Health Sciences | 3 |
| PHS 808 | Principles of Epidemiology | 3 |
| PHS 812 | Health Care Policy & Admin. | 3 |
| PHS 814 | Social & Behavioral Aspects of Public Health | 3 |
| PHS 816 | Environmental Health | 3 |

*Administration ..... (choose 12 hrs.)*

| | | |
|---|---|---|
| AGE 710 | Systems in Long-Term Care | 3 |
| PHS 804 | Principles of Statistics in the Health Sciences | 3 |
| PHS 812 | Health Care Policy and Administration | 3 |
| PHS 833 | Health Economics | 3 |
| PHS 841 | Leadership and Change Agency in Public Health | 3 |
| HMCD 621 | Supervisory Management in Health Care Organizations | 3 |
| HMCD 622 | Human Resources Mgmt. in Health Care Organizations | 3 |
| HMCD 642 | Financing Health Care Services | 3 |
| HMCD 648 | Concepts of Quality in Health Care | 3 |

#### *AGE Culminating Experience*

*Thesis*

| | | |
|---|---|---|
| AGE 895 | Thesis Research | 3 |
| AGE 899 | Thesis | 3 |

Total Culminating Experience Hours..... (6 hrs.)

*Internship*

| | | |
|---|---|---|
| AGE 810 | Aging Studies Practicum | 6 |
| *or* AGE 660 | Administrator-in-Training Prac. | 6 |

Total Culminating Experience Hours..... (6 hrs.)

*Coursework*

| | | |
|---|---|---|
| AGE elective | | 3 |
| AGE elective | | 3 |

Total Culminating Experience Hours..... (6 hrs.)

#### *AGE Electives*

| | |
|---|---|
| AGE 512 | Diversity and Aging |
| AGE 515 | Women and Aging |
| AGE 516 | Age, Work and Retirement |
| AGE 521 | Images of Aging in the Media |
| AGE 525 | Dying, Death and Bereavement |
| AGE 527 | Intro. to Sexuality and Aging |
| AGE 529 | Caregiving and Aging |
| AGE 550 | Selected Topics in Aging Studies |
| AGE 560 | Aging Network Seminar |
| AGE 663 | Economic Insecurity |
| AGE 710 | Systems in Long-Term Care |
| AGE 780 | Physical Dimensions of Aging |

Students are expected to meet with their faculty advisor and create their plan of study following the completion of 12 graduate credit hours, as discussed in the Graduate School section of the Graduate Catalog. The plan of study must include a minimum of 60 percent of the student's graduate hours at the 700–899 level.

### *Graduate Emphasis in Aging Studies*

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

#### Courses for Graduate/Undergraduate Credit

**AGE 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 aging studies credit and instructor's consent.

**AGE 512. Diversity and Aging (3).** Cross-listed as ETHS 512. Introduces students to issues in aging that are unique to minority older adults. Demonstrates differences in the aging experience by race/ethnicity and addresses the differential patterns of health and illness in later life in relation to race/ethnicity, gender and culture. In addition, the student develops an appreciation for how race/ethnicity affects mental and social dimensions of life. Attention is given to the impact on the social, financial and health aspects of those who speak a language other than English. Course perspective is interdisciplinary, taking into account the physical, psychological, interpersonal, and social influences which shape our understanding of the challenges older minorities face when relocating to the United States. *Course includes diversity content.*

**AGE 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.

**AGE 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 life span perspective. *Course includes diversity content.*

**AGE 516. Age, Work and Retirement (3).** Examines the basic implications of population aging on work life and retirement opportunities, now and in the future. Explores factors that may place individuals at risk for economic insecurity as they grow older. Topics covered include the current situation in the United States and other countries, examines the economic status of older Americans, addresses retirement policies in the private sector, social security and health care issues.

**AGE 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 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 biology that satisfies the general education requirements.

**AGE 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 these relate to the family life of older people. *Course includes diversity content.* Prerequisite: AGE 100, SOC 111, or junior standing.

**AGE 521. Images of Aging in the Media (3).** Explores the link between media and aging issues in the United States. Students examine several ways in which our experiences and beliefs about aging are influenced by mass media as well as how the media and marketing tactics influence and reflect the images of older people in society today. The theoretical and practical aspects of aging in the context of the media are addressed.

**AGE 525. Dying, Death and Bereavement (3).** A broad overview of the psychological aspects of death and dying in our society. Topics include attitudes toward and preparation for death, the understanding of and care for terminally ill patients, funeral rituals, burial, mourning and grief practices; suicide and euthanasia. The class involves experiential learning activities such as personal preparation for death and field trips such as visiting a funeral home. These learning activities are designed to help the student be better equipped to help those who must make such preparations for themselves or loved ones.

**AGE 527. Introduction to Sexuality and Aging (3).** Focuses on all aspects of sexuality and aging and the issues that arise with respect to sexual behavior as humans age. Examines human sexuality over the life course, focused on the experiences of those 65 and older and the impact of chronic disease, cognitive decline and physical disabilities on sexual attitudes and behaviors. Addresses key concerns regarding sexuality and aging, including misconceptions about sexuality and aging as well as the problems with sexuality that members of the aging population sometimes face. It also looks at solutions, treatments and techniques that can be applied to help address some of those problems. The course perspective is interdisciplinary, taking into account the physiological, psychological, interpersonal and social influences which shape our understanding of sexuality in the aged.

**AGE 529. Caregiving and Aging (3).** Explores caregivers' gender roles, cost of caregiving, managing stress, respite care, finding resources, financial and legal matters, emerging caregiving trends, and long distance caregiving. Caregiving is often stressful to the caregiver. Attention is given to caring for the caregiver, informal versus formal caregiving, the importance of various services for the health of the caregivers themselves, working with professional caregivers, and emerging trends in caregiving.

**AGE 543. Aging and Public Policy (3).** Cross-listed as SOC 543. Seminar-style course explores the impact of an aging population on social institutions, covers the history of American aging policies, the organization and financing of health care for the elderly, and discusses policy analysis as an evaluation tool for comparing public approaches to responding to the needs of an increasingly diverse aging population. Considers the process of policy formation, identifies key players and interest groups and contrasts political ideologies regarding federal, state and private responsibilities for older people. Emphasizes Social Security, the Older Americans Act, Medicare and Medicaid as policy examples. Also looks at the potential contributions of the older population to society (volunteer services, provision of family care, etc.) as affecting and affected by policy. *Course includes diversity content.* Prerequisite: SOC 111 or AGE 100 or junior standing.

**AGE 550. Selected Topics in Aging Studies (1–6).** Study in a specialized area of aging studies with the focus upon preprofessional programs and current issues in the field of aging. Emphasizing knowledge and skills in applied areas of aging studies as they relate to an emerging area of research and application. Repeatable up to 6 hours. Prerequisite: instructor's consent.

**AGE 560. Aging Network Seminar (3).** An overview of federal, state and local programs concerned with planning, managing or direct delivery of services to the older population. Prerequisite: 9 hours of aging studies credit or instructor's consent.

**AGE 622. Public Health and Aging (3).** Explores the study of aging and the range of health issues that older persons, their families, their providers and society will face in the next decade. Presents an overview on aging from different perspectives: demography, biology, epidemiology of disease, physical and mental health disorders, functional capacity and disability, social aspects of aging and ethical issues in the care of older individuals.

**AGE 660. Administrator in Training Long-Term Care Practicum (3 or 6).** An academic long-term care administrator training program. Develops a professional competency and personal code of ethics for the field of long care administration. Gives students the practical experience required by the state of Kansas in order to sit for the state and national nursing home administrator licensure examination. The required text is the study guide for the national exam. It is the student's responsibility to work through the study materials and seek guidance from their preceptor regarding questions over the material. The 480-clock-hour practicum is completed in a licensed long-term care facility under the guidance of an approved preceptor. Repeatable for a total of 6 hours credit. Prerequisite: instructor's consent.

**AGE 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. *Course includes diversity content.* Prerequisites: ECON 202 or instructor's consent, and junior standing.

**AGE 702. Research Methods (3).** Cross-listed as PADM 702. Acquaints students with applied public policy research methods. Emphasizes locating, collecting, appraising and using both primary and secondary sources of data of the type used in policy, planning and administrative research. Students must complete several short research projects. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership.

**AGE 710. Systems in Long-Term Care (3).** Analyzes long-term care in the U.S. as a response to chronic illness and disability emphasizing the diversity of long-term care systems and addressing the needs of persons of all ages. Addresses system and organizational aspects that affect organizational outcomes and quality of long-term care services. Considers long-term care policy and management issues. It explicitly applies a trajectory model of chronic illness, conceptualizing formal long-term care services as one series of responses to chronic illness and disability.

**AGE 715. Adult Development and Aging (3).** Explores theory and research related to the development of adults and to the aging process. Using an interactive, interdisciplinary perspective, the course examines the process of change, transition, growth and development across the adult life span. Prerequisite: AGE 798 or 6 hours of aging studies.

**AGE 717. Health Communications and Aging (3).** A multidisciplinary, empirically-based consideration of emotions, behaviors, beliefs and attitudes related to aging and the process of communicating with older adults. Topics include: approaches to communication and aging, current evidence about communication and the aging population, interpersonal and intergenerational communication, mass communication and aging, health and health care interactions (patient-physician communication, etc.), older adults and technology, and cultural change. Students develop applied skills and critical thinking. Applications to public health are explored throughout the course.

**AGE 720. Independent Readings (1–3).** Supervised study of special topics and problems relating to older adults. Repeatable up to 6 hours. Prerequisite: program consent.

**AGE 750. Workshop in Aging (1–3).** Provides specialized instruction, using a variable format in a gerontologically relevant subject. Repeatable for credit.

**AGE 765. The Medicare System (3).** Designed to explore the many intricacies of the Medicare and Medicaid programs. Emphasizes the application of course material to the development of the student's understanding of how these two programs affect the use of medical services among covered populations. Course format includes lecture, group and individual examination of the literature, and analysis of case studies.

**AGE 780. Physical Dimensions of Aging (3).** Cross-listed as HPS 780. Designed to assist the student in developing an understanding of the complex physiological changes that accompany advancing age and the effects of physical activity on these factors. In addition, the student develops an appreciation for how functional consequences affect mental and social dimensions of life. Attention is given to sensory, motor, cognitive and

psychological changes. Special emphasis is placed on factors associated with the preparation, implementation and evaluation of research projects involving older adult populations.

**AGE 781. Cooperative Education (3–6).** Provides practical field experience, under academic supervision, that is suitable for graduate credit and complements and enhances the student's academic program. Repeatable up to 6 hours. These 3 to 6 hours may meet degree requirements (if approved by the academic advisor) in place of AGE 810. AGE 781 is graded *Cr/NCr*, while AGE 810 is letter graded. Prerequisites: 12 hours of aging studies and instructor's consent.

**AGE 798. Interprofessional Perspectives on Aging (3).** Introduction to the advanced study of the process of aging from a multidisciplinary point of view. Not open to students with an undergraduate major or minor in aging studies. Prerequisite: admission to Graduate School.

### Courses for Graduate Students Only

**AGE 801. Field Research in Aging Studies (3).** An examination of the methods of participant observation and interview as approaches to understanding aging and the aged. Students gain practical experience in these methods through individual fieldwork projects. Prerequisite: AGE 798, 12 hours of aging studies credit, or instructor's consent.

**AGE 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.

**AGE 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: AGE 798, 12 hours of aging studies, or instructor's consent.

**AGE 810. Aging Studies Practicum (3–6).** Integrates academic aging studies and practical experience through supervised placement of students in an agency or organization engaging in planning, administering or providing direct services to older people. Practicum requires 160 contact hours for each 3 hours of credit. A practicum internship paper is also required. AGE 810 is a letter-graded course. Students may substitute the *S/U* course AGE 781, Cooperative Education, for AGE 810. Prerequisites: 12 hours of aging studies credit and instructor's consent prior to registration.

**AGE 813. Sociology of Aging (3).** Provides an overview of the significant sociological perspectives, social issues and social science research pertaining to the phenomenon of aging in society. Examines the major theories of social aging, analyzes the changing demographic trends and the political economy issues facing aging societies; describes how the broader societal context affects the nature of family relationships, community involvement, and the experiences of retirement and widowhood among older adults. Examines the current issues in health and social service delivery for care of older adults. Examines a substantive field which has major social policy as well as personal significance in contemporary life.

**AGE 814. Psychology of Aging (3).** Provides a comprehensive exploration of the psychology of aging. Students examine the issues surrounding the adult aging process. Topics include personality and intellectual change, mental health of older adults, and the psychological issues of extending human life. Teaches aspects of successful aging, normal aging and age-related illness such as dementia, Alzheimer's disease, cancer and heart conditions. Emphasizes the strengths of older adults and prevention of psychological problems of older adults.

**AGE 818. Biology of Aging (3).** Designed to provide students with the most up-to-date information on the current understanding of the aging process. Students develop an understanding of the biology of aging with a system-by-system description of aging phenomena. Students are expected to develop an understanding of the complexities of the aging process from various perspectives.

**AGE 850. Selected Topics in Aging Studies (1–6).** Advanced study in a specialized area of aging studies focusing upon professional programs and current issues in the field of aging. Emphasizes knowledge and skills in applied areas of aging studies as they relate to an emerging area of research and application. Repeatable up to 6 hours.

**AGE 870. Interprofessional Practicum Experience (1–3).** Internship experience designed to help students encounter a variety of age-related settings as well as integrating their academic aging studies and practical experience through supervised placement in multiple agencies or organizations. Internship requires 160 contact hours for each 3 hours of credit. Prerequisites: 9 hours of aging studies credit and instructor's consent prior to registration.

**AGE 895. Thesis Research (3).** Individual guidance in the development of a specific research problem. Potential thesis topics should be formulated by the student and discussed with their thesis advisor. May be repeated for a maximum of 6 hours credit. Prerequisite: completion of, or current enrollment in, all academic coursework for the master's degree.

**AGE 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.

**AGE 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. Repeatable. Prerequisite: graduate-level research methods class.

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

## Public Health Sciences

### *Master of Public Health Sciences (MPH)*

After due consideration, the university decided to suspend the MPH program at the conclusion of the spring 2006 semester. *No new applications will be considered for admissions.*

### *Administrator-in-Training (AIT) Practicum Placement Program*

The AIT is designed to place qualified applicants in a 6-credit-hour, 480-clock-hour practicum placement with a qualified nursing home administrator, as part of the preparation necessary for becoming a licensed nursing home administrator in the state of Kansas.

The AIT practicum placement program is available to individuals with a bachelor's degree, who have had coursework in aging studies or long-term care, management concepts, and finance or accounting. The required courses are available through the department of physician assistant, and the health services management and community development program, for those interested applicants who have not taken such coursework prior to considering a career as a nursing home administrator. The Bachelor of Science degree in health services management and community development, provides program majors with the coursework required for AIT placement. Interested program majors may pursue the AIT requirements while completing their degree programs. Additional information on the AIT is available through the HMCD program.

### *Graduate Certificate in Public Health Program*

A graduate certificate in public health provides documentation that a student has completed a core set of public health courses beyond the bachelor's degree level. Through the graduate certificate in public health program, graduates will bring population-based health knowledge to their work in health and medicine. The program covers principles and issues in health care policy and administration, the social and behavioral aspects of public health, epidemiology, environmental health, and biostatistics.

The required courses for this certificate are based on the five areas defined by the Council on Education for Public Health to be the basic areas of public health knowledge. The courses are offered on a fixed schedule so that all are taught once a year. Students can complete the coursework (15 credit hours) in one academic year. The courses are offered online, or at 4:30 p.m. or later to accommodate working professionals.

Admission to this graduate certificate program in public health requires that the applicant meets the following criteria:

1. Possess a bachelor's degree from a regionally accredited institution, or a foreign university with substantially equivalent requirements for the bachelor's degree, and have a minimum GPA of 2.750 in the last 60 hours of coursework;
2. Demonstrate evidence of training and/or experience indicative of adequate preparation for the curriculum. This could include a degree in a recognized health profession, one or more years of responsible work experience in the health field, or other relevant evidence; and
3. Submit an official report of completion of the Test of English as a Foreign Language (TOEFL) with a composite score of 570 or above, or overall band score of 7.0 on IELTS exam if the native language is not English. This report must be no more than two years old at the time it is reviewed by the certificate admissions committee.

The total number of credit hours required for the certificate in public health is 15, with a cumulative grade point average of 3.000 or above and no grade that generates less than 2.000 credit points per credit hour. Students must complete the following courses:

| *Course* | | *hrs.* |
|---|---|---|
| PHS 804 | Principles of Statistics in the Health Sciences | 3 |
| PHS 808 | Principles of Epidemiology | 3 |
| PHS 812 | Health Care Policy & Admin. | 3 |
| PHS 814 | Social & Behavioral Aspects of Public Health | 3 |
| PHS 816 | Environmental Health | 3 |

The deadline for guaranteed review of applications to the public health certificate program is June 1 for the fall semester, and November 1 for the spring semester.

### *Health Services Management and Community Development (HMCD) courses*

#### Courses for Graduate/Undergraduate Credit

**HMCD 616. Environmental Health (3).** Introduces students to the importance of the environment to human health by examining the causes and controls of major environmental health problems. Topics are structured around the things we do as individuals and societies that result in environmental health hazards including energy production, industry, food production, and the modern lifestyle as viewed through both a local and global lens. Special emphasis is placed on environmental risk factors to susceptible populations and how they translate into public health policy and prevention. Students learn what they can do to protect and enhance their health, and to influence the quality of the environment. Includes lecture, film, group analysis and discussion. For undergraduate credit only.

**HMCD 621. Supervisory Management in Health Care Organizations (3).** A study of supervisory management concepts and techniques that apply to health care organizations and programs. Emphasis is on understanding the health care environment and its various health care settings, the identification of issues facing front-line employees, supervisors and mid-level managers, and the development of administrative and leadership skills necessary to successfully lead health care work teams. Identifies, analyzes and solves problems that clinical department heads, supervisors and other health related mid-management personnel encounter in their work. The principles of effective management techniques—planning, decision making, organizing, budgeting, time management, leadership, direction, delegation, communication, motivation, discipline, performance appraisal, management of change, teamwork, effective meetings, working with unions, quality improvement and career development—are covered. Prerequisite: HMCD 310.

**HMCD 622. Human Resources Management in Health Care Organizations (3).** Intended for clinical health care professionals who have responsibility for managing people in health care organizations. Also intended for health care management students who will have responsibility for managing people in health services organizations. An introduction to the essential theories, components and issues of human resources management in the health care field. Includes the study of the effectiveness of the human resources management function, employee recruitment, selection, training, performance appraisal, benefits and compensation, employee relations and other relevant legal requirements affecting employment. Covers issues of contemporary relevance for human health services resources departments such as employee health and safety, employee assistance programs, occupational stress and job burnout, violence in the workplace and work/family issues. Students are required to learn and to demonstrate the ability to analyze human resources problems and to present sound solutions. Students are expected to learn and demonstrate effective group working skills as they join small groups and engage in collaboratively solving a number of human resources management problems.

**HMCD 624. Community Development Methods (3).** Builds on the foundation of public health by examining a variety of advanced methods, theories and skills used for community development. Students familiarize themselves with the approaches used to assess and improve health outcomes in a community context and familiarize themselves with how to effectively apply these approaches. Includes lecture, group and individual projects, fieldwork and visiting lectures from practicing community development professionals.

**HMCD 625. Special Topics in Health Services (3).** Designed to provide students with the opportunity to explore, in detail, a selected current topic relevant to health services management and community development. Students review current research related to the selected topic, provide weekly presentations, engage in discussion and produce a term paper. Also includes lecture and guest arrangements from outside the department and the institution.

**HMCD 642. Financing Health Care Services (3).** Examines the principles of financial analysis and management used in health care institutions, which are most useful to nonfinancial personnel. Emphasizes understanding and application of general financial concepts crucial to the health setting; considers financial organization, sources of operating revenues, budgeting and cost allocation methods. Uses examples for various types of health service organizations. Prerequisite: senior standing in the HMCD program, or instructor's consent.

**HMCD 644. Program Planning and Evaluation (3).** Introduces students to the planning, development and evaluation of health programs through the use of lecture, group projects and individual presentations. Students familiarize themselves with a variety of approaches available in the field of program planning. Emphasizes the application of this material to the development of a program plan.

**HMCD 648. Concepts of Quality In Health Care (3).** Addresses quality management in health services organizations, with a focus on a systematic approach to meet the Institute of Medicine's aim to provide care that is *safe, effective, patient-centered, timely, efficient and equitable*. The history and current status of quality management initiatives, as well as the role of quality in organizational strategic management are presented. Students learn the role of quality from theory to application in a broad base of organizational settings.

### *Public Health Sciences (PHS) courses*

#### Courses for Graduate Students Only

**PHS 804. Principles of Statistics in the Health Sciences (3).** Introductory statistics for graduate students in the social and health sciences with little or no background in statistics. Provides first year (or equivalent) MPH students with a basic understanding of certain statistical techniques, the appropriate application of these techniques, and use of the software package, SPSS.

**PHS 808. Principles of Epidemiology (3).** An introductory graduate-level course concerning epidemiological principles and how these form the scientific basis for public health.

**PHS 812. Health Care Policy and Administration (3).** An in-depth look at policy and management issues in the health system from a public health perspective. Topics include health policy, trends in the health care system, and administrative issues. Topics are critiqued with regard to public health goals, the interests of consumers and providers, and ethics.

**PHS 814. Social and Behavioral Aspects of Public Health (3).** Examines the characteristics, beliefs and behaviors of individuals and groups involved in the process of health care. Draws on concepts and principles of the social, behavioral and clinical sciences, especially dynamics that define the interactions of providers and consumers of health care. Explores why people react to perceived symptoms the way they do, the reasons providers respond as they do to patients with different social attributes, the factors which predispose individual reactions to illness and its correlates, and the effects on health of societal agreements and expectations.

**PHS 816. Environmental Health (3).** A survey course in environmental health designed to provide an understanding of the fundamental theory and methods for the control of disease. Includes environmental law, disease systems, water supplies, plumbing, waste water treatment, food sanitation, vector control, recreation sanitation, solid waste disposal, housing sanitation and air pollution.

**PHS 818. Fundamental Research Methods in Public Health (3).** Stresses mastery of basic concepts and techniques of research methodology used in the health professions. Focuses on acquisition of the generic tools of research design and their application to the real-world problems confronting those who deliver health care, those who facilitate and/or manage the delivery of care, those who conduct clinical and health services studies, and those who make policy affecting the delivery arrangements. Prerequisites: PHS 804, 808.

**PHS 821. Community Assessment & Development (3).** This community epidemiology course introduces public health theories and methods used to conduct community assessments and to apply the results to positive social change. Students examine the meaning of the key terms *community*, *community-building*, and *community development* within historical and contemporary perspectives. Students learn the importance of starting with such questions as *whose community?*, *whose health?*, *whose assessment?*, and *for whose benefit?* Students review strategies for community mapping, issue selection, community organizing and coalition building. They study several approaches for identifying community needs, including organizing and coalition building. Several approaches for identifying community needs are studied, including the use of secondary data sources, interview methods, focus groups and surveys. Finally, students apply their work to the design (or revision) of a study of the assets and needs of a local target community in regard to a health-related issue.

**PHS 824. Cultural Competency in Health Care (3).** Uses a community epidemiology approach to examine the changing demographics in 21st century United States, and to analyze the effects of those changes on our health care system. Students explore differences in the distribution of disease among various cultural

groups, taking into account the social, biological and political causes behind those differences. They look at gaps between ethnic groups in service availability and access, in therapy options, and in treatment outcomes. Examines how culture affects lifestyle choices, attitudes toward health and illness, help-seeking behaviors, and service utilization.

**PHS 826. Politics of Health Policy Making (3).** Covers the basic principles of public policy making in health care and public health. Offers the opportunity to students to apply that knowledge in a community-based attempt to impact a positive public health policy development. Skills-based course that demonstrates why things happen as they do in policy-making arenas and what can be done to ensure desired policy outcomes.

**PHS 831. Essentials of Health Insurance and Managed Care (3).** Health insurance is one of the most powerful ingredients in the U.S. health care system and yet the majority of the general public misunderstands it. It is important for those who currently work, and those who are planning to work, in the health care field to understand the underlying dynamic of the insurance process. The student is introduced to the concept of risk and the role of insurance in handling risk. Examines health care expenditures as an insurable event; health insurance and managed care as a form of risk handling.

**PHS 833. Health Economics (3).** An application of classical economic theories, principles and concepts to traditional U.S. medical care. Both the traditional and unique determinants of demand and supply are considered with emphasis on the role of need for care, provider-induced demand, and health insurance. The legitimate role of government in health care is also considered.

**PHS 838. Applied Data Analysis (3).** Teaches: (1) the practical skills necessary to analyze and manage data using the SPSS software; (2) the application of statistical tools introduced in the MPH program's introductory courses in biostatistics; and (3) an introduction to regression analysis.

**PHS 841. Leadership and Change Agency in Public Health (3).** Explores the essential leadership competencies and characteristics necessary to effectively promote innovation and facilitate adaptation in today's complex and rapidly evolving health care system. Combines classic theory and cutting edge concepts to ground students in the principles which underpin the current emphasis on leaders as change agents. Explores and applies strategies for effective change in the thinking and behavior of people, the design and vision of organization, and the health and well-being of communities. Emphasizes the generalizability of leadership principles across the various sectors of public health.

**PHS 842. Public Health Applications to the World Wide Web (2).** Documents the creation and evolution of the Internet and World Wide Web and applications that allow these tools to be of relevance to public health and preventive medicine in the community setting. There are no official prerequisites other than an understanding of biostatistics and familiarity with computer systems.

**PHS 843. Health Program Planning (3).** Development and practice of planning and evaluation skills through the development of a health program in a community of interest.

**PHS 845. Coalitions in Health Care (3).** Designed to familiarize students with the factors influencing successful collaboration in public health. Emphasizes the application of this material to the development of community-based coalitions/alliances/committees/partnerships. Course format includes lecture, group and individual examination of the literature, analysis of case studies, and fieldwork.

**PHS 876. Directed Study (1–3).** Individual study of the various aspects and problems within public health. Repeatable for credit with departmental consent. A maximum of 3 credit hours may count toward degree requirements. Prerequisites: faculty advisor and instructor's consent.

# School of Nursing (NURS)

**Graduate Faculty**

*Professors:* Alicia Huckstadt (director of graduate program), Betty Smith-Campbell, Elaine Steinke

*Associate Professors:* Mary Koehn, Betty Elder, Barbara Morrison, Victoria Mosack (chairperson), Susan Parsons

*Assistant Professors:* Wendy Dusenbury, Karen Hayes, Peggy Hernandez, Debra Pile

*Instructors:* Carol Bett, Jolynn Dowling, Caleb Edigar, Mary Faragher, Linda Moody, Jennifer Rodgers, Jennifer Sebes

*Teaching Unclassified Professionals:* Patricia Dwyer, Janell Mayer

*Lecturers:* Belinda Childs, Debbie Hinnen

## Master of Science in Nursing (MSN)

The program is individualized to meet the needs and professional goals of each student. The curriculum has been developed to accommodate part-time study ( 8 or fewer credit hours), as well as full-time study (9–12 credit hours). The purpose of the graduate program is to prepare nurses for advanced roles in indirect and direct care, e.g., administrators and educators.

### Admission Requirements

In addition to the general university requirements for admission to graduate studies (see the Admission to Graduate Study section for full details), the School of Nursing requires:

1. A bachelor's degree with a major in nursing from a nationally accredited (NLN or CCNE) school;
2. Admission to the Graduate School at Wichita State University;
3. A cumulative grade point average of 3.000 or higher in the last 60 hours of undergraduate coursework;
4. School of Nursing approval;
5. Evidence of registered nurse licensure in the United States or its territories;
6. Coverage by professional liability insurance in the minimum amount of $1/3 million individual/aggregate, to be renewed annually;
7. One year of nursing practice following professional licensure is highly recommended but not required;
8. Computer literacy including word processing, email and Internet searches;
9. A clinical learning background check is required. The School of Nursing can provide details for obtaining the background check; and
10. Evidence of meeting the technical standards as identified by the School of Nursing graduate program.

Students may be admitted conditionally until all requirements for admission are completed.

### Comprehensive Examination

A comprehensive written examination, thesis or research project is required of all MSN nursing students. The exam is completed within the student's last two semesters.

### Degree Requirements

All students must identify their concentration through the school of nursing admission process and take all required courses with a minimum total of 36 hours for leadership/administration, and a minimum of 37 hours for education MSN degrees.

*Please contact the nursing graduate program office for the most recent information regarding curriculum.*

#### *Nursing Education*

*Core Curriculum*

| | | |
|---|---|---|
| NURS 703 | Theoretical Foundation of Adv. Nursing Practice | 3 |
| NURS 801 | Health Care Systems: Policy and Politics | 3 |
| NURS 806 | Evidence-Based Nursing Pract. & Outcomes of Care | 3 |
| NURS 826 | Evidence-Based Nursing Proj. I | 2 |
| NURS 871 | Leadership & Emerging Issues in Nursing | 3 |
| Graduate level statistics course | | 3 |
| *Total Core* | | *(17 hrs.)* |

*Nursing Education (Direct Care)*

| | | |
|---|---|---|
| NURS 793 | Advanced Pathophysiology I | 4 |
| NURS 795 | Applied Drug Therapy | 3 |
| NURS 701 | Advanced Health Assessment | 2 |
| NURS 702 | Adv. Health Assessment Lab | 1 |
| NURS 723 | Foundations of Nursing Ed. | 3 |
| NURS 757 | Teaching Strategies for Nursing Education | 3 |
| NURS 724 | Nursing Ed. Practicum | 2 |
| NURS 872 | Clinical Focus Ed. Practicum | 2 |
| *Total Concentration and Core* | | *(37 hrs.)* |

#### *Nursing Leadership and Administration*

*Core Curriculum*

| | | |
|---|---|---|
| NURS 703 | Theoretical Foundation of Adv. Nursing Practice | 3 |
| NURS 801 | Health Care Systems: Policy and Politics | 3 |
| NURS 806 | Evidence-Based Nursing Pract. & Outcomes of Care | 3 |
| NURS 826 | Evidence-Based Nursing Proj. I | 2 |
| NURS 871 | Leadership & Emerging Issues in Nursing | 3 |
| *Total Core* | | *(17 hrs.)* |

*Nursing Leadership and Administration (Indirect Care)*

| | | |
|---|---|---|
| HMCD 642 | Financing Health Care Services | 3 |

| | | |
|---|---|---|
| PHS 812 | Health Care Policy & Admin. | 3 |
| NURS 812 | Nursing & Health Care Sys. Administration Practicum | 4 |

*Electives (Select two of the following courses for a total of 6 hrs.)*

| | | |
|---|---|---|
| HMCD 621 | Supervisory Mgmt. in Health Care Org. | 3 |
| HMCD 648 | Concepts of Quality in Health Care | 3 |
| PHS 841 | Leadership & Change Agency in Public Health | 3 |

*Total Concentration and Core ..... (36 hrs.)*

## Graduate Certificates

***Postmaster's Certificate***

Students already admitted to the DNP degree program or alumni from a CCNE accredited DNP degree program may select 25 additional credit hours in a postmaster's specialization offered by WSU. Please contact the graduate nursing programs office for further information.

# Doctor of Nursing Practice

This program is intended to provide advanced education in many areas beyond that provided by the MSN program.

Some areas of advanced content are: critical thinking and leadership in the health care system, and health policy.

There are two entry points for this program. Those who have completed either the BSN or the MSN may apply.

## Doctor of Nursing Practice (DNP) Degree—Postbaccalaureate

***Admission Requirements***

1. An approved graduate-level statistics course taken within the last six years;
2. A Bachelor of Science in Nursing from a nationally accredited school (NLN or CCNE);
3. A GPA of 3.000 or higher in the following areas:
   a. Last 60 hours of undergraduate coursework
   b. All undergraduate nursing courses
   c. Any graduate-level courses taken
   d. The following four science courses taken with an overall GPA of at least 3.000 and no grade that generates less than 2.000 credit points per credit hour in any one course: anatomy/physiology, microbiology, pathophysiology and pharmacology
4. Two applications must be submitted: a Graduate School application and a School of Nursing application. Both applications must be submitted by May 1 (fall admission only);
5. All students will request entrance to a specific specialization upon application. Please see choices below;
6. Evidence of license as a registered nurse in *Kansas*;
7. Coverage by professional liability insurance. CNS and NP students must have NP student coverage prior to enrollment in practicum coursework. Minimum coverage required: $1,000,000 single incident/$3,000,000 aggregate;
8. Computer literacy is an expectation of the graduate nursing program. Skills should include: word processing, email, file attachments, and Internet searches. If courses require Blackboard, students are highly encouraged to complete the Blackboard orientation. Students may elect to take Personal Computing 105, or another basic computer skills course, to fulfill the computer literacy expectation; and
9. Technical standards must be met.

***Credit Hours***

Students who enter with the BSN degree complete a minimum of 74 credit hours for the entire DNP degree. An MSN degree is not awarded.

Students who enter with the MSN degree complete a minimum of 29 credit hours for the DNP degree.

***Final Project***

Students complete a project within the DNP program culminating with the residency course. (See DNP Project, page 128).

***Specializations***

All students request entrance to a specific specialization upon application. The internal School of Nursing admission process includes this placement. Admission into a specialization for DNP applicants with a BSN degree is maintained as students successfully complete coursework on their plan of study. Those who do not successfully complete coursework compatible with their plan of study are not continued in the DNP program. Admission for MSN candidates is to the clinical (or administrative) specialization area in which their MSN was completed. Any exception is determined by individual review.

Students choose from the following individual/family focus specialties:

*Individual/Family Focus Specialties:*

Nurse Practitioner
- Adult—Gerontology Acute Care
- Family
- Psychiatric/Mental Health

## Nurse Practitioner

***Adult–Gerontology Acute Care Nurse Practitioner (AG/ACNP) ..... (74 hrs.)***

*Core and Preparatory Courses*

| | | |
|---|---|---|
| NURS 701 | Adv. Health Assessment | 2 |
| NURS 702 | Adv. Health Assessment Lab | 1 |
| NURS 703 | Theoretical Foundations of Adv. Nursing Practice | 3 |
| NURS 715 | Adv. Nursing Practice Roles | 1 |
| NURS 793 | Advanced Pathophysiology I | 4 |
| HS 710 | Applied Clinical Pharmacology | 3 |
| HS 711 | Pharmacological Mgmt. of Acute & Chronic Diseases | 3 |
| NURS 801 | Health Care Systems: Policy & Politics | 3 |
| NURS 806 | Evidence-Based Nursing Practice & Outcomes of Care | 3 |
| NURS 824 | Advanced Pathophysiology II | 2 |
| NURS 826 | Evidence-Based Nursing Project I | 2 |
| NURS 828 | Evidence-Based Nursing Project II | 2 |
| NURS 901 | Organizational Systems & Leadership | 3 |
| NURS 902 | Population & Social Determinates of Health | 3 |

*Specialization Courses*

| | | |
|---|---|---|
| NURS 728 | Adv. Practice Technology & Skills | 3 |
| NURS 874 | Adult/Older Adult ACNP Practicum I | 4 |
| NURS 840 | Pathophysiology & Mgmt. of Adult/Older Adult Acute Care Problems I | 3 |
| NURS 842 | Transition to the ACNP Adv. Practice Role I | 1 |
| NURS 909 | Pathophysiology & Management of Adult/Older Adult Acute Care Problems II | 3 |
| NURS 910 | Adult/Older Adult ACNP Practicum II | 4 |
| NURS 911 | Transition to the ACNP Adv. Practice Role II | 1 |
| NURS 912 | Management of Acute & Critical Problems of Adult/Older Adult Populations | 3 |
| NURS 952 | Advanced Nursing Practice Preceptorship | 3 |
| Graduate Nursing Elective | | 3 |

*Capstone Courses*

| | | |
|---|---|---|
| NURS 956 | Practice Management | 2 |
| NURS 959 | Evidence-Based Nursing Project III | 3 |
| NURS 960 | Residency | 6 |

***Family Nurse Practitioner (FNP) ..... (74 hrs.)***

*Core and Preparatory Courses*

| | | |
|---|---|---|
| NURS 701 | Advanced Health Assessment | 2 |
| NURS 702 | Adv. Health Assessment Lab | 1 |
| NURS 703 | Theoretical Foundations of Advanced Nursing Practice | 3 |
| NURS 715 | Adv. Nursing Practice Roles | 1 |
| NURS 793 | Advanced Pathophysiology I | 4 |
| NURS 795A | Applied Drug Therapy I | 3 |
| NURS 795B | Applied Drug Therapy II | 3 |
| NURS 801 | Health Care Systems: Policy & Politics | 3 |
| NURS 806 | Evidence-Based Nursing Pract. & Outcomes of Care | 3 |
| NURS 824 | Advanced Pathophysiology II | 2 |
| NURS 826 | Evidence-Based Nursing Project I | 2 |
| NURS 828 | Evidence-Based Nursing Project II | 2 |
| NURS 901 | Organizational Systems & Leadership | 3 |
| NURS 902 | Population & Social Determinates of Health | 3 |

*Specialization Courses*

| | | |
|---|---|---|
| NURS 728 | Advanced Practice Technology and Skills | 3 |

NURS 803 FNP Primary Care I....3
NURS 804 FNP Primary Care Practicum I....4
NURS 830 FNP Management & Clinical Application I....1
NURS 838 Transition to FNP Advanced Practice Role I....1
NURS 903 FNP Primary Care II....3
NURS 904 FNP Primary Care Practicum II..4
NURS 905 FNP Management & Clinical Application II....2
NURS 906 Transition to FNP Advanced Practice Role II....1
NURS 952 Advanced Nursing Practice Preceptorship....3
Graduate Nursing Elective....3
*Capstone Courses*
NURS 956 Practice Management....2
NURS 959 Evidence-Based Nursing Project III....3
NURS 960 Residency....6

***Psychiatric/Mental Health Nurse Practitioner (PMHNP) .... (74 hrs.)***

*Core and Specialization Preparatory Courses*
NURS 701 Advanced Health Assessment....2
NURS 702 Adv. Health Assessment Lab....1
NURS 703 Theoretical Foundations of Advanced Nursing Practice....3
NURS 715 Advanced Nursing Practice Roles....1
NURS 793 Advanced Pathophysiology I....4
NURS 795A Applied Drug Therapy I....3
NURS 795B Applied Drug Therapy II....3
NURS 801 Health Care Systems: Policy & Politics....3
NURS 806 Evidence-Based Nursing Pract. & Outcomes of Care....3
NURS 824 Advanced Pathophysiology II....2
NURS 826 Evidence-Based Nursing Project I....2
NURS 828 Evidence-Based Nursing Project II....2
NURS 901 Organizational Systems & Leadership....3
NURS 902 Population & Social Determinates of Health....3
*Specialization Courses*
NURS 728 Adv. Practice Technology and Skills....3
NURS 854 Diagnosis and Management of Mental Disorders....3
*(Must be taken prior to NURS 819)*
NURS 819 Foundations of Psychiatric/ Mental Health Nursing....3
NURS 822 Psychiatric/Mental Health Nursing Practicum I....4
NURS 856 Transition to PMHNP Adv. Practice Role I....1
NURS 921 Complex Issues in Psychiatric/ Mental Health Nursing....3
NURS 922 Psychiatric/Mental Health Nursing Practicum II....4
NURS 923 Transition to PMHNP Adv. Practice Role II....1
NURS 952 Advanced Nursing Practice Preceptorship....3
Graduate Nursing Elective....3
*Capstone Courses*
NURS 956 Practice Management....2
NURS 959 Evidence-Based Nursing Project III....3
NURS 960 Residency....6

***Elective Courses:***

Elective coursework is available in many topic areas, including education, diabetes, human lactation, genetics, dermatology and low back pain. Students should see their advisor for assistance with elective choices.

## Doctor of Nursing Practice (DNP) Degree—Postmaster's

***Admission Requirements***

1. An approved graduate-level statistics course taken within the last six years;
2. A nursing master's degree from an accredited school, with a GPA of 3.250 or higher in all master's work;
3. Individual/Family focus applicants are required to:
   a. Present proof of APRN licensure in *Kansas*, and
   b. Present proof of, or eligibility for, national certification as a nurse practitioner or clinical nurse specialist;
4. Some latitude may be given in the following GPA requirements on an individual basis (3.000 or higher in the following areas):
   a. Last 60 hours of undergraduate coursework
   b. All undergraduate nursing courses
   c. Any graduate-level courses taken
   d. The following four science courses taken with an overall GPA of at least 3.000 and no grade that generates less than 2.000 credit points per credit hour in any one course: anatomy/ physiology, microbiology, pathophysiology and pharmacology
5. There are two applications in the process, the Graduate School and the School of Nursing. Both applications must be submitted by October 15 (spring admission only); and
6. Admission for postmaster's applicants will be to the practice specialization area in which their nursing master's degrees were completed.

***Individual/Family Focus .... (29 hrs.)***

*Core and Specialization Preparatory Courses*
NURS 824 Advanced Pathophysiology II....2
NURS 899A Special Topics: Health Care Sys. Policy & Politics Update....1
NURS 899B Special Topics: Evidence-Based Nursing Practice Update....1
NURS 899C Special Topics: Management of Care Update....2
NURS 901 Organizational Systems & Leadership....3
NURS 902 Population & Social Determinates of Health....3
NURS 924 Advanced Pharmacotherapy for Advanced Practice Nursing....3
Graduate Nursing Elective....3
*Capstone Courses*
NURS 956 Practice Management....2
NURS 959 Evidence-Based Nursing Project III....3
NURS 960 Residency....6

***DNP Project***

Students complete an evidenced-based project that stems from a series of courses (Evidence-Based Nursing Practice and Outcomes of Care; Evidence-Based Practice Nursing Project I & II). Students work collaboratively with at least one graduate nursing faculty member who is chairperson of their committee and one other graduate faculty member to identify an evidence-based practice problem and plan the implementation to address the problem. Successful defense of the evidence-based project proposal is the expected outcome within the Evidence-Based Project III course. After successful completion and defense of the Evidence-Based Project III proposal, the candidate may enroll in residency hours. The residency allows the student to complete and disseminate the results of the project, and develop a portfolio documenting practice scholarship. The residency hours may be taken in 2-, 4-, or 6-hour increments and may be repeated until requirements are met. The candidate completes an oral defense of the project at the end of the residency.

**Courses for Graduate/Undergraduate Credit**

**NURS 505. Directed Study in Nursing (1–4).** Elective. Individual study of the various aspects and/or problems of professional nursing. Repeatable. Prerequisite: departmental consent.

**NURS 543. Women and Health Care (3).** Cross-listed as WOMS 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 nonnursing majors. *Course includes diversity content.*

**NURS 566. Perspectives on Self-Help Groups (3).** Cross-listed as PSY 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 issue. Reviews contemporary theory and research, explaining the attractiveness and effectiveness of self-help groups. Panels of support group members share their experiences with self-help groups on such topics as addiction, cancer and other illnesses, eating disorders, bereavement, mental illness and parenting.

**NURS 567. Psychology of Helping Relationships (3).** Cross-listed as PSY 506 and SOC 506. Introduces students to a psychological perspective on helping relationships that is useful in both practice and research. Topics covered include the definition of relationship and identification of the ways in which the roles of helper and help-seeker can be structured to maximize

effectiveness: e.g., power, distance, similarity and reciprocity. Relationships of interest include: counseling and psychotherapy, nursing and doctoring, family caregiving, mentoring, self-help/mutual aid, and volunteering. The emerging topic of *relationship-centered care models* in the education of health care professionals is discussed. Prerequisite: 6 hours in psychology including PSY 111 or instructor's consent.

**NURS 701. Advanced Health Assessment (2).** Designed to assist students to refine history taking, psychosocial assessment and physical assessment skills. Focuses on assessment of individuals throughout the life span. Emphasis is placed on detailed health history taking, differentiation, interpretation and documentation of normal and abnormal findings. Course includes lecture, discussion, and integrated history-taking and physical assessment assignments. Prerequisite: admission to graduate nursing program. May be taken concurrently with or prior to NURS 702.

**NURS 702. Advanced Health Assessment Laboratory (1).** Companion course for NURS 701. Apply history-taking and assessment skills within a laboratory setting. Emphasizes differentiation, interpretation and documentation of normal and abnormal findings. Requires a complete history and physical examination of a client. Prerequisite: admission to graduate nursing program. May be taken concurrently with, or within one year of completion of, NURS 701.

**NURS 703. Theoretical Foundations of Advanced Nursing Practice (3).** Emphasizes the role of theory in developing knowledge-based advanced nursing practice. Relationships among theory, research and practice are addressed. The application of selected theories, models and frameworks to advanced practice nursing is discussed. Prerequisite: admission to graduate nursing program.

**NURS 705. Scientific Inquiry II (3).** Builds on NURS 703. Discusses the research process in relationship to concepts, frameworks/theories. Explores various methodological approaches to research. Considers current issues in nursing research. Demonstrates the research process in a preliminary proposal related to student's practice area. Prerequisites: NURS 703 or departmental consent and admission to graduate nursing program.

**NURS 707. Alternative and Complementary Health Care (3).** Analyzes the theoretical and empirical basis for various alternative and complementary modalities. Includes an exploration of issues involved with the use of specific modalities within today's health care environment. Research-based discussion focuses on how to best prepare the health care professional to provide guidance to a client and the family to best achieve a physiological, mental, emotional and spiritual state most responsive to therapeutic interventions. Emphasizes total evaluation and support of health influences on lifestyle, environment, culture and other cognitive, safety and affective factors. Open to nonnursing majors. *Course includes diversity content.*

**NURS 715. Advanced Nursing Practice Roles (1).** Designed for the student preparing for advanced practice nursing. The historical development of the advanced practice role, as well as current and future professional and legal descriptions of advanced practice nursing roles is explored. Prerequisite: admission to graduate nursing program.

**NURS 718. Advanced Technologies (2).** Focuses on application of clinical skills and interpretation of technologies used in a variety of clinical settings. Nurse practitioner students practice these skills in laboratory and/or clinical settings. Prerequisites: admission to one of the NP specializations and departmental consent. Enrollment is limited.

**NURS 720. Human Lactation (3–4).** For the graduate student preparing for practice as a lactation consultant. Provides an in-depth focus on the anatomical and physiological basis of lactation and breastfeeding. Explores factors that impact maintenance of health during lactation and clinical decisions for disease prevention. Addresses preparation for lactation consultant certification. Students work on case studies, develop a paper for publication and take a final examination via the Internet. Open to nonnursing majors. Prerequisite: admission to graduate program.

**NURS 723. Foundations of Nursing Education (3).** Assists the student to explore theoretical and practical aspects of curriculum development, and teaching of nursing in higher education and continuing education. Prerequisite: departmental consent.

**NURS 724. Nursing Education Practicum (1–3).** Students, under professional guidance, become directly involved in clinical and classroom teaching, curriculum development and participation in other faculty functions in higher education and continuing education, or patient education. A seminar and directed observation of a master teacher accompanies the field experience. Repeatable for a total of 6 credits. Prerequisite: departmental consent. Pre- or corequisite: NURS 723.

**NURS 726. Common Dermatological Conditions in Primary Care (1–3).** Interactive online course guides students through an instructional program with a profile of common dermatological conditions encountered in primary care. Information is presented in brief case scenarios; students identify the condition. Resource links are available for in-depth study of each condition. For clinical use, patient education links are provided. Cases give the didactic information needed to make clinical decisions. Prerequisite: senior rule or admission to the Graduate School or instructor's consent.

**NURS 727. Low Back Pain (1–3).** Interactive online course guides students through an instructional program based on the low back pain guidelines from the Agency for Health Care Policy and Research. Case study format stimulates critical thinking. Linked information gives information needed to make clinical decisions. Prerequisite: senior rule or admission to the Graduate School or instructor's consent.

**NURS 728. Advanced Practice Technology and Skills (3).** Focuses on application of clinical skills, advanced health assessment, and interpretation of technologies used in a variety of clinical settings. Students practice these skills in laboratory and clinical settings. Students practice history-taking and physical examination, with emphasis on differentiation, interpretation and documentation of normal and abnormal findings. A 40-hour precepted experience is included.

**NURS 731. Psychopharmacology (3).** Basic brain biology, brain disorders and psychopharmacology are reviewed as a basis for assessment and administration of psychopharmacologic medications and education of clients. Prerequisite: admission to graduate program.

**NURS 733. Diabetes Mellitus Nursing (3).** Exploration of clinical theories; identifies and studies appropriate nursing systems for clients with diabetes mellitus. Emphasizes attaining and maintaining optimal levels of functioning and the psychological adjustment of the client and family to a potentially devastating disease. Open to nonnursing majors.

**NURS 734. Diabetes Mellitus Nursing Practicum (3).** An intensive clinical experience; the student studies, designs and implements nursing systems for individuals or groups in the area of diabetes mellitus nursing management. A weekly one-hour seminar accompanies the practicum. Open to nonnursing majors.

**NURS 750. Workshops in Nursing (1–4).** An opportunity for intensive study of special topics related to nursing practice, education or research. Open to nonnursing majors.

**NURS 757. Teaching Strategies for Nursing Education (3).** Analysis of teaching strategies for the nurse educator to accommodate the changing health care scene. Teaching methods, including technology appropriate for a variety of learners, and learning environments are discussed. Roles of the nurse educator across the scope of learning environments are investigated: nursing education, in-service and patients/clients/families. Current issues and trends influencing nursing education are explored. The course focuses on the use of research-based evidence to guide teaching strategies. Pre- or corequisite: NURS 723. May be taken by graduate nursing students or undergraduate nursing students with senior standing.

**NURS 775. Health Care Information Systems (3).** Examines information systems as they relate to health care. Analyzes information systems in clinical management, administration, education and research. Emphasizes issues surrounding information systems and hands-on experience with selected health care information management exercises.

**NURS 776. Health Care Information Systems Practicum (3).** Provides an individualized opportunity to apply the concepts/theories of information systems to a health care setting. Includes analyzing existing information programs, identifying applications for automation, and undertaking small-scale development efforts. Pre- or corequisite: NURS 775.

**NURS 781. Pathophysiology for Acute and Critical Care (3).** Examines pathophysiological concepts relevant to acute and critical care nursing practice. Explores the scientific knowledge base for selected clinical problems in acute care. Emphasizes pathophysiological mechanisms of disease and the relevance to clinical decision making. Prerequisite: admission to graduate program.

**NURS 783. Assessment in Psychiatric/Mental Health Nursing (3).** For the student preparing for advanced practice in psychiatric/mental health nursing. Explores current diagnostic issues in psychiatric nursing practice. Emphasizes application of current biological, psychological, social and other relevant theories and knowledge within the nursing and related fields to the assessment and planning of interventions for psychiatric clients. Prerequisite: admission to graduate program.

**NURS 786. Advanced Health Assessment Practicum (2).** A concentrated assessment practicum focusing on application of knowledge from advanced health assessment courses. Students apply history-taking and assessment skills in a specified setting. Emphasizes differentiation, interpretation and documentation of normal and abnormal findings. Graded *S/U*. Prerequisites: NURS 701, 702, departmental consent, admission to one of the NP specializations.

**NURS 791. Special Studies in Nursing (1–6).** Students engage in extensive study of particular content and skills directly or indirectly related to nursing practice. Repeatable. Open to graduate or undergraduate students. Prerequisite: departmental consent.

**NURS 793. Advanced Pathophysiology I (4).** Explores in depth scientific knowledge base relevant to selected pathophysiological states confronted in advanced nursing practice. Provides the basis for the foundation of clinical decisions related to diagnostic tests and the initiation of therapeutic regimens. Age-specific and developmental alterations are correlated with clinical diagnosis and management. Application is made through age-appropriate examples and case studies. Prerequisite: admission to graduate nursing program or instructor's consent.

**NURS 795. Applied Drug Therapy (3).** Discusses the clinical application of specific categories of drugs commonly encountered in primary care settings. Explains the use of protocols, prescription writing, and the ethical/legal and economic issues surrounding the advanced nurse's role in prescribing and monitoring pharmacologic therapies in the ambulatory setting. Discusses factors such as age-appropriate content related to pharmacokinetics, dosages, expected outcomes and side effects of the drugs. Addresses first line versus second line drugs, alternate drugs, drug interactions, adjusting drug dosages, patient education and compliance issues related to drug therapy. Explores the nurse's role and responsibility related to data collection, problem identification and consultation with the physician. Application is made through age-appropriate case studies. Prerequisites: admission to graduate nursing program and departmental consent.

**NURS 795A. Applied Drug Therapy I (3).** Discusses the clinical application of specific categories of drugs commonly encountered in primary care settings. Explains the use of protocols, prescription writing, and the ethical/legal and economic issues surrounding the advanced nurse's role in prescribing and monitoring pharmacologic therapies in the ambulatory setting. Discusses factors such as age-appropriate content related to pharmacokinetics, dosages, expected outcomes and side effects of the drugs. Addresses first line versus second line drugs, alternate drugs, drug interactions, adjusting drug dosages, patient education and compliance issues related to drug therapy. Explores the nurse practitioner's role and responsibility related to data collection, problem identification and consultation with the physician. Application is made through age-appropriate case studies. Prerequisites: admission to graduate nursing program and departmental consent.

**NURS 795B. Applied Drug Therapy II (3).** Expands the clinical application of drug therapy in the primary care setting. Employs evidence-based medicine to determine the proper management of the various disease states discussed. Application is made through age appropriate case studies including complex patients. Prerequisites: NURS 795A, admission to graduate nursing program.

**NURS 796. Nursing Practicum in Special Settings (1–6).** Opportunity for directed practice in various settings including clinical specialties, nursing administration, nursing education and consultation. Prerequisite: departmental consent.

**NURS 799. Directed Readings in Nursing (1–2).** Student engages in critical search of the literature in areas related to the profession and practice of nursing. Prerequisite: departmental consent.

### Courses for Graduate Students Only

**NURS 801. Health Care Systems: Policy and Politics (3).** Designed to provide an overview of policies that make up the U.S. health system, and the influence policy has on advanced practice nursing and health care. Focuses on how to analyze policies relevant to advanced practice nurses and advocacy strategies, particularly politics, to influence policy implementation and evaluations. Prerequisite: admission to the graduate nursing program. Prerequisite: admission to the graduate nursing program.

**NURS 803. FNP Primary Care I (3).** Focuses on common health problems seen in individuals and families throughout the life span using a primary care focus. Emphasis on applications of research and theory-based interventions appropriate for management by advanced practice registered nurses. Emphasizes strategies and protocols to manage common problems in urban and rural patients, interventions to restore individual and family levels of pre-illness health, and positive behaviors. Prerequisites: NURS 728, and admission to the FNP specialization. Corequisites: NURS 804, 830, 838.

**NURS 804. FNP Primary Care Practicum I (4).** Concentrated clinical practicum in a primary care setting that addresses individuals and families throughout the life span within the context of the community. Theory and research used in clinical settings. Health promotion, maintenance and prevention interventions emphasized. Prerequisites: NURS 728, admission to the FNP specialization. Corequisites: NURS 803, 830, 838.

**NURS 805. Health Promotion through the Life Span (3).** Focuses on the wellness of individuals and families through the life span seeking to maintain or improve health and prevent illness. Interventions reflect a preventative framework, enhanced by theory and research, that provides an understanding of health and lifestyle behaviors. Prerequisite: NURS 703. Pre- or corequisite: NURS 705.

**NURS 806. Evidence-Based Nursing Practice and Outcomes of Care (3).** Evidence-based practice is the integration of the best research evidence with clinical expertise and patient values to facilitate clinical decision making. Focuses on identifying and evaluating evidence for its relevance in nursing practice. Prerequisite: admission to the graduate nursing program. Pre- or Corequisite: NURS 703 or departmental consent.

**NURS 809. Primary Care II: Management of Complex Health Problems through the Life Span (3).** Focuses on complex problems seen in individuals and families through the life span. Stresses applications of current research and theory-based interventions appropriate for management by advanced registered nurse practitioners. Emphasizes strategies and protocols to manage complex patient problems in urban and rural patients, interventions to restore individual and family levels of pre-illness health, including secondary and tertiary prevention. Prerequisites: NURS 703, 803, 804 and admission to the FNP specialization. Corequisite: NURS 904.

**NURS 810. Primary Care II: Practicum (4).** Emphasizes assessment and management of common health problems across the life span based upon knowledge of theory and research. Primary care clients with common conditions affecting major body systems assessed and managed. Weekly seminars focus on analysis and evaluation of clinical situations and cases. Prerequisites: admission to the FNP specialization, NURS 703. Corequisite: NURS 903.

**NURS 811. Foundations of Nursing and Health Care Systems Administration (3).** Assists students in acquiring conceptual and practical knowledge of the theories, conceptual models and research that serve as a basis for the design and administration of health care organizations. Attention is paid to the operation of these theories in an environment of rapidly changing technology, financial incentives, political forces, workforce expectations, and interpersonal and organizational interdependencies. Pre- or corequisites: NURS 703, 715 826 or instructor's consent.

**NURS 812. Nursing and Health Care Systems Administration Practicum (2–6).** Practicum in a health care setting; students, under professional guidance, become directly involved in existing leadership, administrative and management systems. Types of experience may include roles in nursing service administration, nursing education, mid-level nursing administration/management, staff development, community health, or other related area as arranged. Repeatable for credit up to a maximum of 6 hours. (180 practice hours for 3 credit hours.) Pre- or corequisite: departmental consent or 24 hours of graduate work.

**NURS 819. Foundations of Psychiatric/Mental Health Nursing (3).** Focuses on common mental health problems found in individuals and families throughout the life span. Emphasis on application of theory-based interventions appropriate for management of mental disorders by psychiatric/mental health nurse practitioners. Prerequisites: all NP core courses, NURS 854 or departmental consent.

**NURS 821. Thesis (1–6).** The student, in conjunction with the academic advisor and a three-member thesis committee, designs and conducts a formal research project. Graded *S/U*. Prerequisites: admission to graduate nursing program and departmental consent, NURS 703.

**NURS 822. Psychiatric/Mental Health Nursing Practicum I (4).** Intensive clinical experience in which students plan, implement and evaluate nurse-therapist strategies with psychiatric patients across the life span. Emphasis is on the performance of individual psychotherapy as well as psychiatric assessment which includes interpretation of relevant data, differential diagnosis and development and implementation of treatment plans. Appropriate interventions to promote the therapeutic process are emphasized. Prerequisites: all NP core courses and NURS 854 or departmental consent.

**NURS 823. Graduate Project: Alternative to Thesis (1–3).** An opportunity to develop and pursue a scholarly project other than a thesis. This may take the form of a position paper, a historical study, a philosophical paper or other type project developed in conjunction with the student's faculty advisor. Repeatable up to 6 credit hours. Graded *S/U*. Prerequisites: admission to graduate nursing program, departmental consent and 12 hours of graduate coursework, including NURS 703, 705.

**NURS 824. Advanced Pathophysiology II (2).** Analyzes the cellular and molecular pathophysiology and management of health problems through the life span. Emphasis is placed on the scientific underpinnings used to enhance clinical decision-making skills including differentiation of disease states. The major themes address normal physiology, pathophysiology, assessment and evaluation of disease states. Prerequisites: admission to DNP, completion of at least one clinical course in specialty area.

**NURS 825. Independent Study (1–6).** Provides opportunity for the student to develop, in collaboration with a school faculty member, objectives and protocols for independent work related to the practice of nursing. Repeatable up to 6 credit hours. Prerequisites: admission to graduate nursing program and departmental consent, NURS 703.

**NURS 826. Evidence-Based Nursing Project I (2).** Focuses on evidence-based practice and quality improvement initiatives in health care. Current evidence is used to

drive clinical practice decision making. Interprofessional collaboration is used to develop recommendations for improving individual and population health outcomes. Prerequisite: NURS 806 or departmental consent.

**NURS 827. Resource Management in Nursing (3).** Focuses on the assessment of human and material resources and informational systems needed to manage nursing care delivery. Nurse scheduling, budgeting for nursing services, patient classification systems, costing out of nursing services, information management in nursing, program and strategic planning, and marketing are emphasized. Prerequisites: NURS 703, 715, 806, or instructor's consent.

**NURS 828. Evidence-Based Nursing Project II (2).** Management of clinical data including data analysis techniques with spreadsheet and statistical manipulation. Students use existing data to determine health care outcomes and to evaluate delivery of care. Extensive computer use in laboratory setting with technical support. Computer literacy is expected. Prerequisite: NURS 826 or departmental consent.

**NURS 830. FNP Management and Clinical Application I (1).** Students engage in extensive clinical case discussion emphasizing pathophysiology principles and clinical management of primary care common health problems across the life span. Emphasis is on incorporation of theory and evidence-based practice in clinical decision making and problem solving while providing cost-effective care. Prerequisites: NURS 728 and admission to the FNP specialization. Corequisites: NURS 803, 804, 838.

**NURS 834. Adult/Older CNS Practicum I (4).** An intensive clinical experience in which the student is expected to design, implement and evaluate nursing care for adult/older adult populations. Specialized areas of study are selected and may involve health promotion, health maintenance or illness care of acutely or chronically ill adults. Corequisites: NURS 840, 866.

**NURS 838. Transition to FNP Advanced Practice Role I (1).** Focuses on the application of theoretical models of practice, FNP role, evidence-based nursing practice, outcomes of care, and practice issues. Case discussions emphasize the application of physiologic principles and clinical management of common health problems of primary care populations across the life span. Prerequisites: NURS 728 and admission to the FNP specialization. Corequisites: NURS 803, 804, 830.

**NURS 839. Management of Acute and Chronic Health Problems of the Adult (3).** Examines clinical concepts and issues related to major disruptions in the health status of adults. Emphasis is placed on assessment, measurement and interventions related to acute and chronic health problems. Prerequisites: all core courses, NURS 703, 781, 805, HS 711.

**NURS 840. Pathophysiology and Management of Adult/Older Adult Acute Care Problems I (3).** First of two courses that examines pathophysiology and management of acute, chronic and multisystem health problems in adult/older adult populations. Emphasis is on the scientific underpinnings for clinical decision making and practice issues. The major themes address normal physiology, pathophysiology, age-related changes, assessment, diagnosis, and management of acute, critical, and exacerbation of chronic disease states. Health promotion and disease prevention are emphasized. Prerequisites: NURS 793 and admission to ACNP or Adult CNS specialization. Corequisite: NURS 866.

**NURS 842. Transition to the ACNP Advanced Practice Role I (1).** Focuses on the application of theoretical models of practice, ACNP role, evidence-based nursing practice, outcomes of care, and practice issues. Case discussions emphasize the application of physiologic principles and clinical management of acute, critical and exacerbation of chronic health problems of adult/older adult populations. Corequisites: NURS 840, 874.

**NURS 843. Perspectives in Psychiatric/Mental Health Nursing (3).** A critical examination of the delivery of mental health nursing. Emphasizes practitioner roles and therapeutic nursing modalities. Analyzes the effect of historical, social, political, economic and ethical-legal factors. Prerequisites: NURS 703, 819. Corequisite: NURS 922.

**NURS 844. Psychiatric/Mental Health Nursing: Practicum II (3).** An intensive clinical experience; the student analyzes group processes and dynamics, initiates and evaluates therapeutic strategies. Prerequisites: NURS 703, 819, 822. Corequisite: NURS 921.

**NURS 854. Diagnosis and Management of Mental Disorders (3).** Explores current diagnostic and psychopharmacological strategies in advanced psychiatric nursing practice. Emphasis is on diagnostic reasoning and the management of mental health problems across the life span. Prerequisites: Admission to the graduate nursing program and departmental consent.

**NURS 856. Transition to PMHNP Advanced Practice Role I (1).** Focuses on the application of theoretical models used in practice, the role of the psychiatric/mental health nurse practitioner, practice issues, and case scenario presentations with interactive discussions based on the use of established protocols and guidelines. Prerequisites: all core courses and NURS 854. Corequisites: NURS 819, 822.

**NURS 866. Transition to the Adult/Older Adult CNS Advanced Practice Role I (1).** Focuses on the application of theoretical models in practice, CNS role development, outcomes of care, practice issues, change process, and health system leadership. Corequisites: NURS 834, 840.

**NURS 871. Leadership and Emerging Issues in Nursing (3).** Covers key current topics for advanced nurses in leadership and direct care roles. Topics in technology, quality improvement, health professional roles, and other emerging areas of interest are discussed and analyzed as they relate to individual and population health and health outcomes. Prerequisite: admission to the MSN program or departmental consent.

**NURS 872. Clinical Focus Education Practicum (2, 4 or 6).** Advanced clinical nursing experience in which the student develops clinical expertise for a population of interest or a specific role. Experiences are designed to strengthen patient care delivery skills, system assessment and intervention. May be repeated for a total of 6 credits. Pre- or Corequisite: NURS 723.

**NURS 874. Adult/Older Adult ACNP Practicum I (4).** A clinical experience that builds on pathophysiology and clinical management coursework, emphasizing evidence-based practice. Students participate in a medical rotation that is supervised by an ACNP or physician preceptor in the acute care setting. Emphasis is placed on physical assessment, interpretation of data, differential diagnosis, development and implementation of management plans, and performing relevant procedures with adult/older adult populations. Patient and family education, health promotion and prevention are emphasized. Prerequisite: NURS 728. Corequisites: 840, 842.

**NURS 899. Special Topics (1–3).** Provides a topic-specific update for those who hold a master's degree in nursing (MN or MSN) and who require additional knowledge in the Doctor of Nursing Practice (DNP) program. Repeatable for credit. Prerequisite: admission to the DNP—postmaster's graduate nursing program.

**NURS 901. Organizational Systems & Leadership (3).** Focuses on the application of theories of leadership and leadership development in changing and diverse health care organizations. Emphasis is on examining the impact of the art and science of leadership principles and practices on diverse health care organizations. Prerequisite: completion of one specialty practicum course or departmental consent.

**NURS 902. Population and Social Determinants of Health (3).** Provides an analysis of major social variables that affect population health. Students examine health consequences of various social and economic factors. Emphasizes evidence-based practice strategies for populations. Prerequisite: completion of one specialty practicum course or departmental consent.

**NURS 903. FNP Primary Care II (3).** Focuses on complex problems seen in individuals and families through the life span using a primary care focus. Stresses applications of current research and theory-based interventions appropriate for management by advanced practice registered nurses. Emphasizes strategies and protocols to manage complex patient problems in urban and rural patients, interventions to restore individual and family levels of pre-illness health, including secondary and tertiary prevention. Prerequisites: NURS 803, 804, 830, 838. Corequisites: NURS 904, 905, 906.

**NURS 904. FNP Primary Care Practicum II (4).** Emphasizes assessment and management of health problems across the life span, based on knowledge of theory and research. Primary care clients with conditions affecting major body systems assessed and managed. Prerequisites: NURS 803, 804, 830, 838. Corequisites: NURS 903, 905, 906.

**NURS 905. FNP Management and Clinical Application II (2).** Students engage in extensive discussion and application of the pathophysiology and management of primary care complex health problems in individuals across the life span. Emphasis is on the use of theory and evidence-based practice for clinical decision making and problem solving while providing cost effective care. Prerequisites: NURS 803, 804, 830, 838. Corequisites: NURS 903, 904, 906.

**NURS 906. Transition to FNP Advanced Practice Role II (1).** Focuses on collaborative practice, outcomes of care, practice issues, and case discussion. Emphasis is on developing collaborative relationships with other health professionals. Case discussions emphasize the application of physiologic and clinical management of complex health problems in primary care. Prerequisites: NURS 803, 804, 830, 838. Corequisites: NURS 903, 904, 905.

**NURS 909. Pathophysiology and Management of Adult/Older Adult Acute Care Problems II (3).** The second of two courses that examine pathophysiology and management of acute, chronic and multisystem health problems in adult/older adult populations. Emphasis is placed on the scientific underpinnings for clinical decision making and practice issues. Major themes address normal physiology, pathophysiology, age-related changes, assessment, diagnosis and management of acute, critical and exacerbation of chronic disease states. Health promotion and disease

prevention are emphasized. Prerequisites: NURSE 793, 840. Corequisites: NURS 910, 911, 927, 928.

**NURS 910. Adult/Older Adult ACNP Practicum II (4).** Advanced clinical experience that is a continuation of NURS 874. Students participate in surgical and/or emergency department rotations supervised by an ACNP or physician preceptor in the acute care setting. Emphasis is placed on physical assessment, interpretation of data, differential diagnosis, development and implementation of management plans, and performing relevant procedures with adult/older adult populations. Patient and family education, health promotion and prevention are emphasized. Prerequisite: NURS 842, 874. Corequisites: NURS 909, 911.

**NURS 911. Transition to the ACNP Advanced Practice Role II (1).** Focuses on collaborative practice, outcomes of care, practice issues and case discussion. Emphasis is placed on developing collaborative relationships with other health professionals. Case discussions emphasize the application of physiologic principles and clinical management of acute health problems of adult/older adult populations. Corequisites: NURS 909, 910.

**NURS 912. Management of Acute and Critical Problems of Adult/Older Adult Populations (3).** Examines advanced nursing interventions focused on client stabilization and management of complications in the acutely and critically ill adult/older adult populations. Emphasis is placed on diagnostic reasoning and the management of the adult with complex health problems. Interventions focus on application of advanced practice nursing care to the restoration of health/well-being. Prerequisites: NURS 909, 910.

**NURS 921. Complex Issues in Psychiatric/Mental Health Nursing (3).** Examines management of chronic and multisystem mental health issues across the life span. Focuses on complex mental health problems seen in individuals and families. Application of theory-based interventions appropriate for management by psychiatric/mental health nurse practitioners emphasized. Health promotion and disease prevention emphasized. Prerequisites: NURS 819, 822, 856. Corequisites: NURS 922, 923.

**NURS 922. Psychiatric/Mental Health Nursing Practicum II (4).** An intensive clinical experience in which students analyze group processes and initiate and evaluate therapeutic strategies with groups across the life span. Emphasis on the performance of group therapy as well as psychiatric assessment which includes interpretation of relevant data, differential diagnosis, and development and implementation of management plans. Appropriate interventions to promote the group process are emphasized. Prerequisites: NURS 819, 822, 856.

**NURS 923. Transition to PMHNP Advanced Practice Role II (1).** Focuses on the critical analysis of therapeutic strategies used in the role of the psychiatric/mental health nurse practitioner. Prerequisites: NURS 819, 822, 856.

**NURS 924. Advanced Pharmacotherapy for Advanced Practice Nursing (3).** Updates the knowledge base for the advanced practice nurse for more informed prescribing for the complex patient throughout the life span. Presents pharmacokinetics/pharmacodynamics, pharmacogenomics, pharmacoeconomics and pharmacoethics as they apply in the clinical setting. Discusses drug development and the use of new drugs in the clinical setting. Facilitates clinical application of this knowledge through case studies, lectures and reviews of the latest medical literature. Prerequisite: admission to postmaster's DNP program or nationally certified APRN with program approval.

**NURS 927. Transition to the Adult/Older Adult CNS Advanced Practice Role II (1).** Focuses on continued CNS role development, case management, outcomes of care, evidence-based practice and practice issues. Corequisites: NURS 909, 928.

**NURS 928. Adult CNS Practicum II (4).** An intensive clinical experience in which the student is expected to design, implement and evaluate nursing care for adults. Emphasizes application of case management principles and health promotion strategies for a selected population. Corequisites: NURS 909, 927.

**NURS 952. Advanced Nursing Practice Preceptorship (3).** Concentrated clinical practicum in the student's specialization health care setting that emphasizes the management of care for individuals. Students synthesize concepts and principles from previous classes and clinical experiences, applying theoretical and research content to acute, chronic, urgent and/or common health problems. Preceptorship is in a clinical agency appropriate to the student's clinical interests. Prerequisites: completion of all core and specialization courses in the NP option, departmental consent.

**NURS 956. Practice Management (2).** Management and analysis of professional issues including business skills necessary for advanced nursing practice. Emphasizes business practices needed for advanced nursing practice including contract negotiation and strategies for outcomes evaluation. Prerequisite: completion of two specialty practicums or departmental consent.

**NURS 959. Evidence-Based Nursing Project III (3).** Evidence-based project includes needs assessment, problem identification and the development of a project proposal. The student works collaboratively with a graduate nursing faculty member to develop the project for a practice setting. Prerequisite: NURS 828 or departmental consent.

**NURS 960. Residency (2, 4, or 6).** An extensive, advanced-level learning experience tailored for the student and mentored by at least one graduate nursing faculty member and one other graduate faculty member. The post-baccalaureate DNP student will take a portion of the residency hours (not to exceed 4 hours) as a clinical residency. The final residency hours allow the student to complete and disseminate the results of the project developed in NURS 959. At the end of the residency, the student submits a DNP portfolio including the evidenced-based project manuscript or abstract and other student-authored manuscripts, clinical innovations, critically analyzed case studies, documented advanced nursing practice, evidence of practice management and quality assurance principles, and other scholarly work. Repeatable for a minimum of 6 credit hours, until requirements are met. Graded *S/U*. Prerequisite: NURS 952 or departmental consent. Postmaster's DNP students must complete all other required courses prior to this course and must be nationally certified in their specialization.

## School of Oral Health

The School of Oral Health consists of the department of dental hygiene, and the advanced education in general dentistry residency program. The School of Oral Health offers degree programs leading to a Bachelor of Science in dental hygiene, and a postdoctoral certificate in advanced education in general dentistry.

For more information on the postdoctoral certificate, contact Dean Elledge, program director, at (316) 978-8350.

# Fairmount College of Liberal Arts and Sciences

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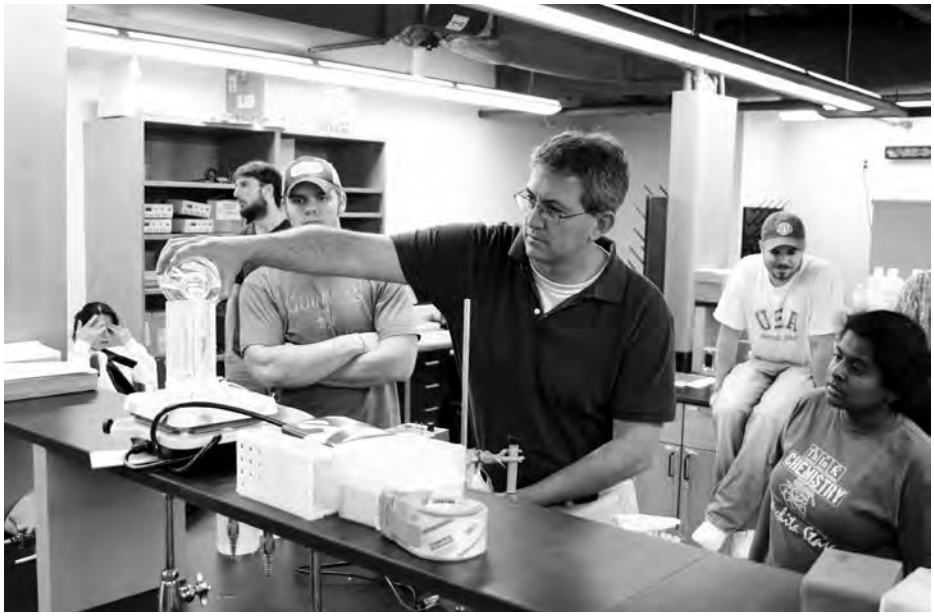
**Public Affairs, Hugo Wall School of,** (316) 978-7240—Nancy McCarthy Snyder, *director*
**Environmental Finance Center**, (316) 978-7240 — Angela Buzard, *director*



**Kansas Public Finance Center,** (316) 978-7240—Kenneth Kriz, *director*
**Public Administration,** (316) 978-7240—Samuel Yeager, *graduate coordinator*
**Public Policy and Management Center,** (316) 978-7240—Misty Bruckner, *director*
**Religion,** (316) 978-3108—Stuart Lasine, *director*
**Social Work, School of** (316) 978-7250—Brien Bolin, *director*
**Sociology,** (316) 978-3280—Jodie Hertzog, *chairperson*; Jennifer Pearson, *graduate coordinator*
**Women's Studies,** (316) 978-7164—Deborah Gordon, *chairperson*

## Graduate Certificate Contacts

**Applied Communication,** (316) 978-6059—Lisa Parcell, *graduate coordinator*
**City/County Management,** (316) 978-6693—Sam Yeager, *graduate coordinator*
**Economic Development,** (316) 978-6693—Sam Yeager, *graduate coordinator*
**Museum Studies,** (316) 978-3195—Rachelle Meinecke, *director of Holmes Museum*
**Nonprofit Management,** (316) 978-6693—Sam Yeager, *graduate coordinator*
**Public Finance,** (316) 978-6693—Sam Yeager, *graduate coordinator*

## Anthropology (ANTH)

**Graduate Faculty**
*Professors*: Donald Blakeslee, Peer Moore-Jansen (chairperson)
*Associate Professors:* David Hughes (graduate coordinator), Jens Kreinath
*Assistant Professors:* Angela Demovic, Sarah Taylor

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 credit hours in anthropology to include courses in the 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 4.000 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 graduate 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 Studies in Cultural Anthropology. Graduate enrollment in ANTH 770, Advanced 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 a graduate seminar (ANTH 801, 802, 820, 837 or 848) a student must have full graduate standing and 6 hours of graduate coursework in anthropology, including the core course (ANTH 736,

746 or 756) in the same subfield as the seminar. To enroll in ANTH 871–872, ANTH 873–874, or ANTH 875–876, graduate students must have successfully completed ANTH 736, 746 and 756 and have their final project (thesis, project or internship) approved by their committee.

A master's degree in anthropology requires 36 hours of graduate study, of which 60 percent (22 hours) must be numbered 700 or above. All students are required to take core courses in archaeological anthropology (ANTH 736), sociocultural anthropology, (ANTH 746) and biological anthropology (ANTH 756), two seminars (ANTH 801, 802, 820, 837 or 848), and two semesters of Colloquium in Anthropology (ANTH 847). Students in all tracks are required to complete the core course in a particular subfield (cultural, biological or archaeological anthropology) prior to registering for any seminar in the same subfield, and students must complete seminars in two subfields. Students interested in multidisciplinary topics may, with the consent of their committee, count up to 12 hours of graduate-level credit from other disciplines toward their degree.

***Track 1*** requires satisfying all the general requirements listed above and the completion of written comprehensive exams, 4 hours of thesis including 2 hours each of ANTH 875 and 876, and the presentation of a thesis. Students must also satisfy a statistics requirement.

Comprehensive exams are graded by all full-time teaching faculty in the department.

***Track 2*** requires satisfying all the general requirements listed above, the completion of a project approved by the student's project committee, and the presentation of a project report. Track 2 students must take 2 hours each of ANTH 873 and 874.

***Track 3*** requires satisfying all the general requirements listed above, the completion of an internship approved by the student's internship committee, and the presentation of an internship report. Track 3 students must take 2 hours each of ANTH 871 and 872.

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. This committee must be formed prior to, or upon the completion of, 18 hours of graduate study. Students must present to their committee a proposal for their thesis, project or internship. The committee approves these proposals and also the oral defense of all theses, project reports and internship reports. Theses, project reports and internship reports must be submitted to the committee at least 10 working days prior to the date of the actual defense.

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 written comprehensive examination. Students must have completed a minimum of 15 credit hours of graduate work in anthropology, including ANTH 736, 746 and 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 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.

### *Certificate in Museum Studies*

This interdisciplinary program prepares students for careers in the museum field. Drawing on courses from anthropology, the School of Art, Design and Creative Industries (SADCI), nonprofit management (public administration), history and education, students gain an overview of museum practice including administration, collections, exhibits and presentation, and education (such as exhibition, workshops, interpretation, guided tours, and school groups). The advisory board periodically refines the content. There is one advisor for all students seeking the certificate program in museum studies. The advisory board designates this individual.

The program consists of 15 credit hours.

***Degree Requirements:*** To complete the certificate program, students take the following management-based core courses:

| | | |
|---|---|---|
| ANTH 606 | Museum Methods | 3 |
| ANTH 607 | Museum Exhibition | 3 |
| HIST 703 | Museum Administration | 3 |
| PADM 870 | Fundraising and Financial Management in Nonprofit Organizations | 3 |
| *Total* | | *(12 hrs.)* |

Plus 3 hours of practice that could include any of the following

| | | |
|---|---|---|
| ARTH 540A | Concepts in Creative Industries: Planning and Preparatorship | 3 |
| ARTH 540B | Concepts in Creative Industries: Research and Interpretation | 3 |
| ARTH 540C | Concepts in Creative Industries: Audiences and Outreach | 3 |
| ARTH 540D | Concepts in Creative Industries: Funding and Promotion | 3 |
| PADM 725 | Public Management of Human Resources | 3 |
| HIST 701 | Intro. to Local and Community History | 3 |
| Internship/Independent Study | | 1–3 |

Under the guidance of the student advisor, students may fulfill this requirement by taking existing internship and/or independent study courses from any of the participating programs involved with museums in the community.

In addition, all students are encouraged to develop a portfolio of work products that may include, for example, exhibitions and publications.

For information and application procedures, please contact: Director, Lowell D. Holmes Museum, (316) 978-3195.

**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 ceramic and lithic artifacts and other remains. Prerequisite: ANTH 305.

**ANTH 506. Peoples of the Pacific (3).** A survey of the populations, languages and cultures of nonliterate peoples of Polynesia, Micronesia and Indonesia. *Course includes diversity content.*

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

**ANTH 509. Cultures of Ancient Mexico (3).** Archaeological and ethnohistoric survey of the numerous civilizations of ancient Mexico from earliest inhabitants to the period of the Spanish invasion. The cultures covered include Olmec, Teotihuacan, Zapotec and Aztec. Explores the environmental, social and political conditions that led to the rise and fall of societies across Mexico. Prerequisite: ANTH 103.

**ANTH 510. Archaeology of the Ancient Maya (3).** Development of the tropical Lowland Maya civilization in Mesoamerica from the origins of agriculture through the Spanish Conquest. Topics include the rise of divine kingship, the Maya calendar and hieroglyphic writing, interstate conflict and warfare, and Maya religion. Explores archaeological, ethnohistorical and linguistic data and accounts. Prerequisite: ANTH 103.

**ANTH 511. The Indians of North America (3).** A survey of tribal societies and native confederations north of Mexico from the protohistoric through the historic period. *Course includes diversity content.* Prerequisite: ANTH 102.

**ANTH 515. China (3).** 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. *Course includes diversity content.*

**ANTH 516. Japan: People and Culture (3).** 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. *Course includes diversity content.*

**ANTH 517. Anthropology of Islam (3).** Designed to enhance undergraduate and graduate studies in the diversity of Islamic traditions as they are practiced in various geographic areas and social settings around the world. Covers some of the most prominent theoretical approaches in the social and cultural anthropology, which are scrutinized by in depth ethnographic accounts

of Islamic practices in various sociopolitical contexts. *Course includes diversity content.* Prerequisite: ANTH 102.

**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).** A survey of the visual and performing arts of non-Western peoples with special attention to their relationships in the cultural setting. *Course includes diversity content.* 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. *Course includes diversity content.* Prerequisite: 6 hours of anthropology.

**ANTH 528. Medical Anthropology (3).** 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 540. The Indians of the United States: Conquest and Survival (3).** An anthropological inquiry into four centuries of cultural contact, conflict, resistance and renascence. Prerequisite: ANTH 102 or instructor's consent.

**ANTH 542. Women in Other Cultures (3).** Cross-listed as WOMS 542. 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. *Course includes diversity content.*

**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 210 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 nonhuman 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. Repeatable up to 6 credit hours. Prerequisites: ANTH 101, 106, 356 or 557.

**ANTH 611. Southwestern Archaeology (3).** 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 protohistoric period to the present. *Course includes diversity content.* Prerequisites: 6 hours of anthropology and departmental consent.

**ANTH 613. Archaeology of the Great Plains (3).** 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 662. Topics in Spatial Analysis (3).** Explores ways, means, techniques and methods to analyze geospatial data. Geographic analysis with GIS can identify patterns, relationships and trends that lead to better decision making. The class begins with six of the most common geographic analysis tasks: mapping where things are, mapping the most and least, mapping density, finding a boundary and what is inside the boundary, finding what is nearby, and mapping what has changed. The second half of the class covers analytical topics that range from identifying patterns and clusters, to analyzing geographic relationships. Prerequisites: grade of *C* or better in the elementary GIS course or instructor's consent. Knowledge of the Microsoft Windows operating system and Microsoft Office software suite is also a must.

**ANTH 690. Field Methods in Anthropology (3–6).** A maximum of 6 hours can be counted toward either the BA or MA degree in anthropology. 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 750. Workshop (1–4).** Short-term courses focusing on anthropological problems. Prerequisite: instructor's consent.

**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, method and theory in biological anthropology. Prerequisites: graduate standing and 6 hours of anthropology (must include ANTH 101 or instructor's consent).

**ANTH 770. Advanced Readings (2–3).** Provides opportunities for additional student research and reading on concepts and topics covered in the core graduate courses, ANTH 736, Advanced Studies in Archeology and Ethnohistory; ANTH 746, Advanced Studies in Cultural Anthropology; and ANTH 756, Advanced Studies in Biological Anthropology. Repeatable up to 6 hours. Prerequisites: full graduate standing, completion of one core course (ANTH 736, 746 or 756), departmental consent.

**ANTH 781. Cooperative Education (1–4).** Provides practical experience that complements the student's academic program. Requires consultation with, and approval by, an appropriate faculty sponsor. May not be used to satisfy degree requirements. Repeatable for credit. Graded *Cr/NCr*. Prerequisite: graduate status.

**ANTH 798. Introduction to Research (3).** Research methodology in anthropology, including bibliography, research design and the philosophy of research. Prerequisites: full graduate standing and completion of at least one of the following core courses: ANTH 736, 746, or 756.

### Courses for Graduate Students Only

**ANTH 801. Seminar in Archaeology (3).** Comprehensive analysis of archaeological data emphasizing theoretical problems of interpretation and reconstruction. Repeatable up to 6 hours.

**ANTH 802. Methods in Anthropology (2–3).** Develops abilities in the conception and investigation of anthropological problems, and interview and observation techniques, as well as more specialized methods such as photography, mapping and tape recording. Repeatable up to 6 hours. Prerequisite: departmental consent.

**ANTH 820. Seminar in Biological Anthropology (3).** Analysis and discussion of ancient fossil, prehistoric, historic and recent/modern biological variation in an anthropological perspective. Can include advanced studies of human variation and skeletal biology, demography and population genetics in anthropology, advanced studies in paleoanthropology and issues in the debate over micro and macro levels of evolution, and quantitative applications to the study of human variation in anthropological contexts. Repeatable up to 6 hours. Prerequisite: departmental consent.

**ANTH 837. Seminar 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).** Seminar-style experience in recent research in all of the subfields of anthropology. Allows those students preparing their first papers for presentation at professional conferences to present them before a critical but friendly audience. May be repeated once for additional credit. *S/U* grade only. 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 870. Independent Reading (2–3).** Repeatable up to 6 hours. Prerequisite: departmental consent.

**ANTH 871–872. Internship in Anthropology (2–2).** Students following applied or multidisciplinary tracks, such as museology, 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 requires a written report. Prerequisite: full graduate standing, completion of ANTH 736, 746, 756, and committee consent.

**ANTH 873–874. Advanced Project 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). Prerequisite: full graduate standing, completion of ANTH 736, 746, 756, and committee consent.

**ANTH 875–876. Thesis (2–2).** Prerequisite: full graduate standing, completion of ANTH 736, 746, 756 and committee consent.

# Biological Sciences (BIOL)

**Graduate Faculty**

*Distinguished Professor:* George R. Bousfield (Dr. Lawrence M. Jones Distinguished Professor)

*Professors:* William J. Hendry III (chairperson), J. David McDonald, Christopher M. Rogers, Mark A. Schneegurt

*Associate Professors:* Gregory Houseman, Mary Liz Jameson, Leland Russell (graduate coordinator), Bin Shuai

*Assistant Professors:* James Beck, Li Yao

*Research Faculty:* Jeffrey May, Shang-You Yang

## Master of Science and Areas of Specialization

The Master of Science (MS) program offered by the department of biological sciences provides an advanced education with either a research thesis or nonthesis option. A variety of specializations in the broad areas of ecology, molecular biology, microbiology, cell biology and environmental biology are available. All incoming students are assigned to a temporary graduate advisor; typically by the end of the first semester, students choose a permanent graduate advisor and committee. The advisors work with the student to develop a plan of study that meets the student's educational goals.

### Admission Requirements

Completed application forms and two official transcripts of all previous academic work must be submitted to the Graduate School by March 1 for fall semester admission, and by October 1 for spring semester admission. Admission as a full-standing student requires: (1) the completion of 24 credit hours in biological sciences and 15 credit hours in chemistry; (2) an overall grade point average of at least 2.750 (4.000 scale) for the most recent 60 credit hours completed; (3) a grade point average of at least 3.000 (4.000 scale) for all undergraduate biological sciences courses; (4) a one-page statement of purpose that addresses the student's areas of interest in biology; (5) three letters of reference from science faculty; and (6) acceptable TOEFL or IELTS scores if English is not the student's first language. Students who do not meet requirements 1–3 but who wish to begin graduate coursework may qualify for conditional acceptance into a nondegree category.

### Degree Requirements

Students accepted into the MS program in biology may pursue either the thesis option or nonthesis option for their MS degree. All MS graduate students in biology must earn at least 16 credit hours from the department of biological sciences. A maximum of 6 credit hours can be transferred from other institutions and a total of 9 credit hours can be from departments outside of biological sciences. All MS graduate students must enroll in BIOL 797 (Departmental Seminar) and give professional presentations in this course in two semesters. Even when graduate students are not enrolled in BIOL 797, attendance at departmental seminars is expected. All graduate students must complete the department of biological sciences' requirement for training in professional and scholarly integrity by the end of the student's first semester in the program.

***Thesis option.*** Students selecting the thesis option must complete 30 hours of graduate coursework. These 30 hours must include at least 18 hours of courses numbered 700 or greater. Graduate students pursuing the thesis option may include up to 10 hours of BIOL 890 among the 30 hours of coursework and must enroll in BIOL 891 in the semester in which the student defends their thesis. Students must complete an oral defense of their thesis prospectus and a presentation and oral defense of the results of their original research.

***Nonthesis option.*** Students selecting the nonthesis option must complete 33 hours of graduate coursework. These 33 hours must include at least 20 hours of courses numbered 700 or greater. Graduate students pursuing the nonthesis option must include 4–6 hours of BIOL 890, BIOL 781 or BIOL 781N among the 33 hours of coursework. Nonthesis MS graduate students must successfully defend a capstone project that may consist of a library research project, participation in research in a faculty member's lab, a cooperative education experience or an internship experience.

#### Courses for Graduate/Undergraduate Credit

**BIOL 502. Vascular Plants (4). 2R; 4L.** An introduction to the structure, reproduction and evolution of the major groups of living and extinct vascular plants. Includes an introduction to flowering plant systematics. Students earning graduate credit perform a primary literature survey on a topic selected in consultation with the instructor and deliver a 30-minute oral presentation to the class. Prerequisites: BIOL 204 (no longer offered) or 211, CHEM 212.

**BIOL 503. Taxonomy and Geography of Flowering Plants (4).** An introduction to the principles and methods of plant taxonomy and to the study of the patterns of plant distribution and the origin of these patterns. Class time is divided among lectures, laboratories and field work. Field trips throughout Sedgwick County and to the Flint and Chautauqua Hills provide an opportunity to collect specimens and to observe ecology and distribution of native species of flowering plants. Prerequisites: BIOL 204 (no longer offered) or 211, CHEM 212, or instructor's consent.

**BIOL 518. Biology of Aging (3).** Cross-listed as AGE 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 523. Freshwater Invertebrates (4). 2R; 4L.** Emphasizes the ecology, taxonomy, form and function of free-living, freshwater invertebrates. Half of the course deals with arthropods. Includes methods of collecting, culturing and preserving specimens. Part of the course grade is based on a collection of invertebrates correctly prepared and identified. For graduate credit, students submit a term paper or a more extensive collection within a given taxon. Prerequisites: BIOL 211, CHEM 212.

**BIOL 524. Vertebrate Zoology (3).** Evolution, distribution, 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 (no longer offered) or 211, 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 (no longer offered) or 211, 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 (no longer offered) or 211, CHEM 212.

**BIOL 528. Parasitology (4). 2R; 4L.** Studies 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 (no longer offered) or 211, CHEM 212.

**BIOL 530. Applied and Environmental Microbiology (3).** A characterization of the roles of microbes in natural 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 (no longer offered) or 211, 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 systematics project. Prerequisites: BIOL 204 (no longer offered) or 211, CHEM 212.

**BIOL 534. Human Physiology (3).** An organ systems approach to 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 human physiology chosen in consultation with the instructor. Prerequisites: BIOL 204 (no longer offered) or 211, CHEM 531, or instructor's consent.

**BIOL 535. Human Physiology Laboratory (2). 4L.** An empirical approach to human 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. Pre- 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 (no longer offered) or 211, 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 30-minute lecture over one of the topics covered in this course. Prerequisites: BIOL 418 and CHEM 212 or instructor's consent.

**BIOL 561. Plant Ecology Laboratory (2).** Laboratory component of BIOL 560. Field trips are an integral part of the course. Emphasizes an experimental approach to plant ecology. For graduate credit, a student must present the results of the library/laboratory project orally, as well as in writing. Prerequisite: prior or current enrollment in BIOL 560.

**BIOL 570. Conservation Biology (3).** Examines the application of fundamental concepts in ecology, evolutionary biology and genetics to the preservation of biological diversity at the levels of genotypes, species and ecosystems. Topics covered include (1) how biologists quantify biological diversity, (2) threats to biological diversity, (3) tools used to evaluate the level of threat to individual species and to design species management plans, and (4) concepts and considerations for preserve design. Decisions related to biodiversity conservation often have social and economic consequences, students explore these complexities through case studies. Skills developed in this course include critical reading of primary scientific literature, scientific writing and oral presentation. Prerequisite: BIOL 418.

**BIOL 575. Field Ecology (3). 9L.** Techniques for analysis of systems consisting of living organisms and their environments. Field trips are required. Students earning graduate 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 (no longer offered) or 211, 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 (no longer offered) or 211, CHEM 212, or instructor's consent.

**BIOL 610. Topics in Botany (3–4).** Selected offerings in botany. Consult the Schedule of Courses for current offering(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. Repeatable. Prerequisites: BIOL 204 (no longer offered) or 211, CHEM 212 and instructor's consent.

**BIOL 626. Reproductive Biology (3).** Covers the basic organization and function of vertebrate reproductive systems. Includes current concepts and contemporary research from the molecular to the population level. Students earning graduate credit prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: BIOL 420. BIOL 526 is strongly recommended.

**BIOL 630. Behavioral Ecology (3).** Studies the biological basis of social behavior, stressing the underlying evolutionary and ecological mechanisms. Lectures examine altruism and kin selection, kin recognition mechanisms, sexual behavior, sexual selection and mate choice, mating systems, and reproductive strategies from the perspective of natural selection. Students earning graduate credit write a term paper based on the technical literature and present this in a class seminar. Prerequisite: BIOL 418.

**BIOL 640. Topics in Zoology (3–4).** Selected offerings in zoology. Consult the Schedule of Courses for the current offering(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. Repeatable. Prerequisites: BIOL 204 (no longer offered) or 211, CHEM 212 and instructor's consent.

**BIOL 660. Topics in Microbiology (2–3).** See BIOL 610. Prerequisites: BIOL 330 and instructor's consent.

**BIOL 666. 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 (no longer offered) or 211, CHEM 662 and 663.

**BIOL 669. Research in Biochemistry (2).** Cross-listed as CHEM 669. Primarily for students who choose the biochemistry field major. Requires participation in a biochemistry research project under the direction of a faculty member and a written report summarizing the results. May be repeated once for credit. Graded *Cr/NCr*. Prerequisites: BIOL 420 and CHEM 662 or 663, and CHEM 664 and instructor's consent.

**BIOL 710. 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 prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: BIOL 420.

**BIOL 725. Biodiversity Analyses (3).** Surveys the theory, principles, metrics and applications of biodiversity sciences including systematics, biogeography and phylogeny. The pervasive role of phylogenetic data in evolutionary biology (e.g., biogeography, coevolution, speciation, conservation) and other fields (e.g., epidemiology, anthropology, agriculture) are highlighted. Species diversity, species radiations, structure of the *tree of life*, the wealth of comparative data (from genes to proteins and morphology) and the role of systematics in conservation biology are discussed. Offered fall, even years.

**BIOL 730. Cancer Biology (3).** The basic mechanisms of carcinogenesis are covered by discussing the control of normal and abnormal cell growth in several model systems. Students earning graduate credit also submit a term paper dealing with a specific topic to be determined by discussion with the instructor. Prerequisite: BIOL 420.

**BIOL 737. 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. 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 418 or equivalent, CHEM 531 or equivalent, or instructor's consent.

**BIOL 738. Plant and Animal Interactions (3).** Develops and expands basic ecological and evolutionary concepts presented in earlier biology courses including natural selection, coevolution, population growth and factors structuring ecological communities. Applies these concepts to the study of herbivory, pollination by animals and seed dispersal by animals. Designed to improve students' abilities to read current primary scientific literature critically with particular emphasis on identifying and evaluating evidence for hypotheses in ecology and evolutionary biology. Introduces the peer review process and hones students' scientific writing skills. Students write a mini-review article of a current hypothesis in the field of plant-animal interaction. An oral presentation based on the findings of the mini-review is also required. Prerequisites: BIOL 418 or equivalent general ecology course.

**BIOL 740. Topics in Graduate Biology (2–4).** Lecture, laboratory, field techniques, selected readings or discussion course pertaining to a specific biological topic not available in the regular curriculum. May include oral presentations(s) and/or written paper(s). Topics are developed by individual faculty members and reflect current topics, in-depth analysis and biological specialties. May be taken more than once for credit up to 6 hours. Prerequisites: any two of the following three courses: BIOL 418, 419, 420; and instructor's consent.

**BIOL 760. Experimental Molecular Biology (4). 2R; 4L.** 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 mechanism 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 526 or 534 or their equivalents, and instructor's consent.

**BIOL 773. Statistical Applications in Biology (3).** Introduction to experimental designs and statistical analyses that are commonly used in biological research. Focuses on univariate statistical analyses including t-tests, analysis of variance, nonparametric equivalents of ANOVA, linear regression, goodness-of-fit tests and categorical data analysis. Applications to research questions that arise in biological research, including the students' own research, are emphasized. Students also receive training in the use of statistical analysis computer software. Previous enrollment in STAT 370 is recommended.

**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.

**BIOL 781. Cooperative Education in Biology (1–4).** Students pursuing the nonthesis MS degree may gain practical professional experience, under academic supervision, that complements the student's academic program. BIOL 781 is specifically for paid internships that last longer than one semester. The professional experience to be used for credit must be approved by the student's graduate capstone project committee. An academic product from the experience, such as a written summary and/or oral presentation is assigned by the graduate capstone committee. Students may enroll in BIOL 781 for up to two semesters. Graded *Cr/NCr*. Prerequisite: acceptance into MS program.

**BIOL 781N. Internship in Biology (1–4).** Students pursuing the nonthesis MS degree may gain practical professional experience, under academic supervision, that complements the student's academic program. BIOL 781N is for internships that last no more than one semester or summer and may be unpaid. The intern experience to be used for credit must be approved by the student's graduate capstone project committee. An academic product from the experience, such as a written summary and/or oral presentation is assigned by the graduate capstone committee. Graded *Cr/NCr*. Prerequisite: acceptance into MS program.

**BIOL 797. Departmental Seminar (1).** Forum for the weekly presentation and discussion of research projects performed by invited scientists from outside departments and institutions, departmental faculty and graduate students. All MS degree-bound graduate students are required to attend the seminar each semester and must enroll in the course for credit during two semesters. Students enrolled in the course must attend all seminars presented in the course, fill out an evaluation of each seminar and make one 15 minute *professional-meeting style* presentation of their research. Graded *S/U*. Prerequisite: acceptance into MS program.

### Courses for Graduate Students Only

**BIOL 890. Research (2–5).** Students performing research toward an MS degree in biology should enroll for an appropriate number of hours. A brief written summary of research progress during the semester in which the student is enrolled must be submitted to the student's advisor before a grade is assigned. Graded *S/U*.

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

# Chemistry (CHEM)

**Graduate Faculty**

*Distinguished Professor:* William C. Groutas (WSU Foundation Distinguished Professor of Chemistry)

*Professors:* Dennis H. Burns (graduate coordinator), David M. Eichhorn (chairperson), D. Paul Rillema, Kandategе Wimalasena

*Associate Professors:* James G. Bann, Douglas S. English

*Assistant Professors*: Moriah R. Beck, Maojun Gong, Katie R. Mitchell-Koch, Alexandre A. Shvartsburg

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, analytical, inorganic, organic and physical 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, or 79 Internet-based, or an overall band score of 6.5 on the IELTS. 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, however, all application materials required by the chemistry department must be submitted by April 1st for consideration for the following fall semester, and September 1st for consideration for the following spring semester.

## Assessment Exam Requirements for the MS and PhD Degrees

All entering Master of Science and Doctor of Philosophy students are required to take assessment exams in analytical, inorganic, organic, physical chemistry and biochemistry at the beginning of their first semester in the program. 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 two times a year—fall and spring.

## Master of Science Requirements

All MS students are required to satisfactorily complete the Professional and Scholarly Integrity Training by the end of their first year in the program.

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 890. Also, at least 15 credit hours in chemistry courses numbered above 701 must be taken, including Instrumental Methods for Research (CHEM 734) and at least three of the graduate chemistry core courses (CHEM 715–722). Students must complete one enrollment in Chemistry Seminar (CHEM 700) and must enroll in Chemistry Colloquium (CHEM 701) each semester of their degree program. Additional courses are selected by students in consultation with their major advisor and the department's graduate affairs 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 satisfactorily complete the Professional and Scholarly Integrity Training by the end of their first year in the program.

All PhD students are required to take 24 hours of graduate chemistry courses comprising core courses and focused courses. The required core courses for the PhD include Advanced Spectroscopy I (CHEM 715), Modern Synthetic Methods (CHEM 719), Advanced Biochemistry (CHEM 721), Advanced Physical Chemistry (CHEM 722), and Instrumental Methods for Research (CHEM 734). The remaining 9 hours may be satisfied by Advanced Spectroscopy II (CHEM 717) and/or two to three focused courses numbered above 701. Students must complete two enrollments in Chemistry Seminar (CHEM 700) and must enroll in Chemistry Colloquium (CHEM 701) each semester of their degree program. Students must pass six cumulative examinations out of 16 attempts to remain in the program. During their fifth semester, students must develop and orally defend an original research proposal. After passing the cumulative exams and successfully defending the original research proposal, the student will have qualified as a candidate for the PhD in chemistry and must be enrolled in at least 2 hours of Research (CHEM 990) each semester for the duration of the program. 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).** 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 grade higher than *C*-. CHEM 531 strongly suggested but not required.

**CHEM 523. Analytical Chemistry (4). 2R; 6L.** Lab fee. Evaluation of data, theory and application of gravimetric analysis and precipitation, neutralization and oxidation-reduction volumetric analysis. Prerequisite: CHEM 212 with a grade higher than *C*-.

**CHEM 524. Instrumental Methods of Chemical Analysis (4). 2R; 6L.** Lab fee. Introduction to spectroscopic techniques (UV-Visible atomic absorption, molecular absorption, infrared, mass spectrometry and NMR), electrochemical techniques (potentiometry, voltammetry and coulometry) and separation techniques (gas chromatography and HPLC). Applications of computer and automated methods of analysis also covered. Prerequisite: CHEM 531. CHEM 532 strongly recommended but not required.

**CHEM 531. Organic Chemistry I (5). 3R; 6L.** Lab fee. Introduction to the study of carbon compounds emphasizing reaction mechanisms, stereochemistry and spectrographic analysis. Credit is not allowed for both CHEM 531 and 535. Prerequisite: CHEM 212 with a grade higher than *C*-.

**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. Credit is not allowed for both CHEM 532 and 536. Prerequisite: CHEM 531 with a grade higher than *C*-.

**CHEM 533. Elementary Organic Chemistry (3).** A one semester survey of organic chemistry, examining various classes of organic compounds, organic reactions and reaction mechanisms. The goal of the course is to establish an understanding of the relationship between structure and reactivity, with particular emphasis on the importance of organic chemistry to the health sciences and biomedical engineering. Credit is not allowed for both CHEM 533 and 531. This course does not meet the needs of chemistry majors or premed students. Prerequisite: CHEM 212 with a grade higher than *C*-.

**CHEM 535. Organic Chemistry I (3).** Introduction to the study of carbon compounds emphasizing reaction mechanisms, stereochemistry and spectrographic analysis. Credit is not allowed for both CHEM 535 and 531. This course does not include a lab, is open only to biomedical engineering majors and does not meet the needs of chemistry majors or premed students. Prerequisites: must be a biomedical engineering major and have completed CHEM 212 with a grade higher than *C*-.

**CHEM 536. Organic Chemistry II (3).** Continuation of CHEM 535 emphasizing the structure and reactions of principal functional groups and compounds of biological interest. Credit is not allowed for both CHEM 536 and 532. This course does not include a lab, is open only to biomedical engineering majors and does not meet the needs of chemistry majors or premed students. Prerequisites: must be a biomedical engineering major and have completed CHEM 531 or 535 with a grade higher than *C*-.

**CHEM 545. Physical Chemistry I (3).** Introduction to the fundamentals of thermodynamics with the goal of understanding the driving forces behind chemical and physical changes and equilibria. Covers the laws of thermodynamics and explores concepts involving work, heat and simple mechanical processes. Helmholtz and Gibbs energy are introduced as thermodynamic indicators of spontaneity/equilibria. The last portion of the course applies these concepts to the study of phase changes, chemical equilibria, ideal and non-ideal solutions, electrolytes and chemical kinetics. Prerequisites: CHEM 212 with a grade higher than *C*-, one year of college physics, MATH 344 or its equivalent.

**CHEM 546. Physical Chemistry II (3).** Covers elementary quantum mechanics and its applications to chemistry. Begins with a historical comparison between classical and quantum mechanics, then builds from the postulates of quantum mechanics to explore the Schrödinger equation and its use in solving problems involving particles, rotating bodies and vibrations. Special emphasis on spectroscopy and approximation methods relevant to chemistry. Prerequisites: CHEM 212 with a grade higher than *C*-, one year of college physics, and MATH 344 or its equivalent.

**CHEM 547. Physical Chemistry Laboratory (2). 6L.** Lab fee. Laboratory experiments and exercises that reinforce physical chemistry concepts of thermodynamics, equilibrium, spectroscopy and error analysis. Students gain practical, hands-on experience with computerized data acquisition and learn computational techniques for data reduction and analysis. Pre- or corequisites: CHEM 545, 546.

**CHEM 605. Medicinal Chemistry (3).** For students interested in chemistry related to the design, development and mode of action of drugs. Describes those organic substances used as medicinal agents and explains 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. Prerequisite: 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. Prerequisite: CHEM 514. Pre- or Corequisite: CHEM 546.

**CHEM 616. Inorganic Chemistry Laboratory (2). 6L.** Lab fee. Experimental methods of inorganic chemistry. Pre- or corequisite: CHEM 615.

**CHEM 661. Introductory Biochemistry (3).** An introductory course for chemistry majors including chemistry/business majors and students in life sciences. Not recommended for the BS in chemistry—premedicine 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, carbohydrates, lipids and nucleic acids; enzyme kinetics, photosynthesis and transfer of genetic information. Prerequisite: CHEM 532, 533, or 536. Credit is not granted for both CHEM 661 and 662.

**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. Credit is not granted for both CHEM 661 and 662.

**CHEM 663. Biochemistry II (3).** Study of metabolism and control of carbohydrates, lipids, phosphoglycerides, spingolipids, sterols, amino acids and proteins; synthesis of porphyrins, amides and polyamines; 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 with a grade higher than *C-*.

**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 molecular cloning techniques. Prerequisite: CHEM 532. Pre- or corequisite: CHEM 662 or 663.

**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, CHEM 662, 663.

**CHEM 669. Research in Biochemistry (2).** Cross-listed as BIOL 669. 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. Graded *Cr/NCr*. Prerequisites: BIOL 420, 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).** Students give seminars on either papers recently published in the literature or on their own research. Repeatable for credit. *S/U* grade only.

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

**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 715. Advanced Spectroscopy I (3).** An introduction to $^{1}H$ and $^{13}C$ NMR spectroscopy including basic concepts such as integration, chemical shifts, diamagnetic shielding, magnetic anisotropy, spin-spin coupling (first and second-order), coupling constants, proton decoupled $^{13}C$ NMR interpretation of $^{1}H$ and $^{13}C$ NMR spectra. More advanced topics include NOE and protein structural mapping, and multidimensional techniques such as COSY, DEPT, INEPT, molecular motion by NMR, coupling to I>0 metal centers, including those with <100 percent natural abundance, virtual coupling in metal complexes, NMR of paramagnetic systems and use of paramagnetic shift reagents. An introduction to mass spectroscopy including instrumentation—magnetic sector, quadrupole, ion trap, MS-MS; sample preparation and interfaces—GC-MS, LC-MS, electrospray, MALDI; methods of ionization—electron impact, chemical ionization, electrospray, interpretation of mass spectra—basic concepts, fragmentation patterns. An introduction to the interpretation of mid-infrared spectroscopy of complex molecules and ionic compounds followed by the synthesis of results from NMR, MS and mid IR spectra to determine structure. Emphasis on interpretation of results for understanding electronic and molecular properties of chemical compounds related to their symmetry. Prerequisite: CHEM 532 or equivalent; or admission to a chemistry graduate program.

**CHEM 717. Advanced Spectroscopy II (3).** An introduction to electronic and vibrational spectroscopy, EPR and magnetic properties of compounds. A study of the electric field interaction of radiation, electronic and vibrational spectroscopy, and the magnetic field interaction of radiation, EPR and magnetism, with molecular systems examining the different changes in state that molecules can undergo. Emphasis on interpretation of results for understanding electronic and molecular properties of chemical compounds related to their symmetry and structure. Prerequisites: CHEM 532, 546, 615, or their equivalents; or admission to a chemistry graduate program.

**CHEM 719. Modern Synthetic Methods (3).** An introduction to modern synthetic methods in chemistry. A detailed investigation of the synthetic chemistry of anions is followed by a detailed survey of functional group interconversions, then oxidation and reduction reactions. The topic of retrosynthetic analysis is introduced. Topics in inorganic synthesis include organometallic bond forming and breaking reactions, ligand synthesis and replacement, solid state synthesis and topics in bioinorganic synthesis. Prerequisites: CHEM 532 and 615, or their equivalents; or admission to a chemistry graduate program.

**CHEM 721. Advanced Biochemistry (3).** An introduction to advanced biochemical concepts, processes and techniques. A comprehensive survey of structure and functions of biomolecules including proteins, nucleic acids, lipids, DNA replication and translation, biological membrane and membrane transport are covered. Enzyme mechanisms and kinetics and protein structure/function are discussed in detail. Biochemical, molecular biological, biophysical and chemical techniques that are commonly used in the study of biochemical processes are introduced and discussed. Prerequisite: CHEM 661 or 663 or their equivalents; or admission to a chemistry graduate program.

**CHEM 722. Advanced Physical Chemistry (3).** An in-depth overview of the fundamentals of thermodynamics, kinetics, quantum mechanics and statistical mechanics as they apply to chemistry. Special emphasis is placed on solution thermodynamics, kinetics of coupled reactions, statistical mechanics of macromolecules and quantum mechanics as it applies to spectroscopy. Prerequisites: CHEM 545 and 546, or their equivalents; or admission to a chemistry graduate program.

**CHEM 734. Instrumental Methods for Research (3).** Designed to prepare graduate students or other researchers to perform spectroscopy experiments relevant to their research. The identity of organic compounds can be determined by the information provided by several types of spectra: mass, infrared, nuclear magnetic resonance, fluorescence and ultraviolet. Students learn to operate such instruments as the Varian 2200 GC/MS mass spectrometer, the ThermoNicolet Avatar FTIR spectrophotometer, the Varian Mercury 300 and Inova 400 NMR spectrometers, the Fluorolog fluorescence spectrophotometer and the Hitachi U-2010 and Varian Cary 100 UV-Vis spectrophotometers in the department's NMR and analytical facilities. The focus of this class is technique and not the interpretation of spectra. On successful completion of this course, students are authorized to use departmental instruments. Prerequisite: CHEM 524 or equivalent, or departmental consent, or admission to a chemistry graduate program.

**CHEM 738. Structure Determination and Spectral Analysis of Organic Compounds (3).** Discusses chiroptical techniques, infrared, ultraviolet, nuclear magnetic and electron spin resonance and mass spectroscopy, and their practical use 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).

### 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. Bio-inorganic 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, 663 or equivalents.

**CHEM 835. Bio-organic Chemistry (3).** Includes the chemistry of amino acids and peptides, enzyme structure and function, and inhibitor design. Prerequisites: CHEM 532, 661, or CHEM 663 or equivalent.

**CHEM 843. Statistical Thermodynamics (3).** Develops Boltzmann, Fermi-Dirac, and Boise-Einstein statistical mechanics with applications to gaseous-state and solid-state chemical problems. Emphasizes the relationship of statistical mechanics and thermodynamics. Considers applications of statistical thermodynamics to polymers. Prerequisites: CHEM 545, 845 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, 211, and CHEM 662 or 663 or equivalents.

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

**CHEM 990. Research in Chemistry (2–16).** Research for the student planning to receive the PhD. Research is directed by a faculty member. Repeatable for credit. *S/U* grade only.

# Communication, Elliott School of (COMM)

**Graduate Faculty**

*Distinguished Professors:* Deborah Ballard-Reisch (Kansas Health Foundation Distinguished Chair in Strategic Communication), Patricia Dooley (Betty and Oliver Elliott Professor of Communication)

*Professor*: Matt Cecil, director

*Associate Professors:* Richard Armstrong, Dan Close, Kevin Hager, Lisa Parcell (graduate coordinator)

*Assistant Professors:* Jessica Bertapelle, Jennifer Tiernan

## Master of Arts in Communication, Areas of Emphasis

The Master of Arts in communication degree program at Wichita State is designed to provide students with a multidisciplinary foundation in human communication that will serve a broad spectrum of interests and needs in many fields of endeavor. The program is based upon integration and synthesis of academic resources in communication.

### Admission Requirements

In addition to the general Graduate School admission requirements, applicants for full-standing status must have a 3.000 GPA over their last 60 hours of coursework and must write a statement of purpose for pursuing the Master of Arts in communication. International students must score at least 600 paper-based, or 100 Internet-based on the TOEFL, or a minimum overall band score of 7.5 on the IELTS and, if applying for a graduate teaching assistantship, must score a 28 or higher on the speaking portion of the Internet based TOEFL, or 55 on the SPEAK test.

### Degree Requirements

The Master of Arts in communication requires 36 hours of coursework—15 hours of core courses and 21 hours of electives. Students selecting the thesis option must take 6 hours of thesis credit; students selecting the project option will devote either 3 or 6 hours of directed study credit toward the required 36-hour total.

*Program Core (Required) Courses ..... (15 hrs.)*

| | | |
|---|---|---|
| COMM 801 | Introduction to Communication Research | 3 |
| COMM 803 | Empirical/Quantitative Research Methodology in Comm. | 3 |
| COMM 812 | Contemporary Theories of Communication | 3 |

Qualitative Methods: select two of the 3-credit 800-level qualitative methods courses offered by the department. 6

*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 this 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.

#### Courses for Graduate/Undergraduate Credit

**COMM 500. Advanced News and Feature Writing (3). 1R; 4L.** Focuses on journalistic techniques for reporting and writing the more complex and important types of news and feature stories. Students work in various forms of traditional and emerging journalism. Emphasizes creating comprehensive content by integrating print, broadcast, Web, social media and other delivery methods. Prerequisites: junior standing, COMM 301 with a *C* or better, and COMM 401.

**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, COMM 450, 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. 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: organizational, interpersonal, small group and public; and contemporary topics and issues. Prerequisite: COMM 130 or 190, or instructor's consent.

**COMM 512. Principles of Video Production (3).** Examines the concepts and technology necessary for effective production of video communication. Topics include camera operation, video editing and the role of light, sound and sequencing in video production. Prerequisite: COMM 306.

**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 301, 324 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 535. Communication Analysis and Criticism (3).** Introduces the methods used for the analysis and critique of various linguistic, pictorial and aural elements of communication to become more discerning consumers of the various forms of public and mass-mediated messages. Analysis includes print advertisements, radio and television messages, newspaper features and public speeches. Prerequisites: junior standing and COMM 301 with a *C-* or better or instructor's consent.

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

**COMM 555. News and Information Design (3).** Examines contemporary theories of publication layout and the visual presentation of quantitative information. Students investigate methods for combining type, graphics and photographs to convey information and tell stories. Prerequisites: COMM 301, 305.

**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, 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 effective video productions in a field setting. Prerequisite: COMM 512.

**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 teachers 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, 450, 525, or instructor's consent.

**COMM 630. Communication Law and Responsibility (3).** Emphasizes both oral and written aspects of communication law and responsibility. Addresses general functions of the law including the right to communicate, broadcast law and law of the press. Includes discussion of First Amendment rights, libel, privacy, copyright, advertising, obscenity, pornography and corporate communication concerns. Prerequisite: COMM 301 with a *C-* or better or instructor's consent.

**COMM 631. Historical and Theoretical Issues in Communication (3).** Examines the development of various issues in communication in historical context. Emphasizes different humanistic and scientific theories of communication and the historical development of mediated communication. Uses selected theories to generate critiques of specific communication events. Prerequisites: junior standing and COMM 130 or 190, 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; departmental consent.

**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 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).** Cross-listed as THEA 675. Individual study or projects. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

**COMM 690. Communication Internship (1–2).** Credit for professional experience that integrates theory with a planned and supervised professional experience designed to complement and enhance an 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/NCr*. Prerequisite: departmental 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.

### Courses for Graduate Students Only

**COMM 801. Introduction to Communication Research (3).** An integrative approach to understanding the nature and scope of communication research. 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.

**COMM 802. Qualitative Methodologies in Applied Communication Research (3).** Exploration of methodologies, including observational research, focus groups and key information interviews, which are commonly used in applied communication projects. 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 850. Effectively Instructing and Managing the Basic Communication Course (1).** Instruction on effective oral communication teaching methods and on effectively managing the basic communication course. *Course includes diversity content*. Repeatable for a maximum of 4 credit hours. Prerequisite: departmental consent.

**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 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 and ethnic studies 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*: Andra Bannister (director, RCPTI), Michael Birzer (director, School of Community Affairs and graduate coordinator), Michael Palmiotto

*Associate Professor:* Martha Smith

*Assistant Professors:* Jodie Beeson, Yumi Suzuki, Szde Yu

*Fairmount Lecturer:* Allison McKenney-Brown (coordinator, forensic sciences program)

### 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; and (2) a brief autobiographical statement describing particular interests, experiences and goals

related to academic and professional work in criminal justice.

Applicants are evaluated with respect to (1) undergraduate grade point average (a minimum GPA of 3.000 based on the last 60 hours is required for consideration of admission to degree status); (2) amount, type and scope of undergraduate preparation; and (3) reference letters.

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.

Effective fall semester 2015, the Master of Arts in criminal justice may be completed as an option entirely online. See wichita.edu/cjonline.

## Degree Requirements

Students pursuing the MA degree in criminal justice may follow either a thesis or nonthesis option. Both program options require a minimum of 36 hours, including 24 hours taken in courses numbered 700 or above.

***Core Curriculum.*** All degree candidates are required to complete the core courses listed below with a grade of *B* or better in each course. All core courses should be completed in the first two semesters of study. Students selecting the thesis option may count up to 6 hours of thesis credit toward the required 36-hour total.

| *Core Courses* | *(12 hrs.)* |
|---|---|
| CJ 802 | Quantitative Methods for Public Sector Professionals....3 |
| CJ 893 | Seminar on the Application of Criminological Theory....3 |
| CJ 894 | Proseminar in Criminal Justice....3 |
| CJ 897 | Advanced Research Methods....3 |

*Electives* *24 hours to be selected from the following*

CJ 501, 513, 515, 516, 517, 518, 551, 610, 641, 643, 651, 652, 692, 781, 783, 784, 796, 797, 816, 820, 850, 853, 861, 873, 874, 882, 891, 895, 896

Students following the thesis track are recommended to enroll in CJ 874, and must enroll in 6 credit hours of CJ 900, Master's Thesis, and must complete an oral defense of their thesis.

## Examinations

Students selecting the thesis option must pass an oral defense of the thesis.

### Courses for Graduate/Undergraduate Credit

**CJ 501. Integrity in Public Service (3).** Cross-listed as PADM 501. Exposes students to basic principles of personal and professional integrity and how those principles apply to their daily lives as a members of the community and as employees of a government or social service agency. Employs a case study method, using cases and examples from a wide range of government and nonprofit 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).** 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. Provides 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 are required. Prerequisite: CJ 191.

**CJ 515. Sex Crimes (3).** Examines and defines what are classified as criminal forms of sexual behavior and the unique challenges they present to the criminal justice system. Examines the extent and nature of sex crimes, sexual predator laws, sexual harassment and the victims of such crimes. 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 is 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).** 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 provides students with instruction on elements of a film genre. American and European films are considered.

**CJ 520. Drug and Alcohol Issues in Criminal Justice (3).** Overview of issues related to substance abuse in the criminal justice system. Covers the impact of drug and alcohol dependency in society, biological and psychological factors of drug and alcohol dependency, and various treatment modalities used in the criminal justice system for drug and alcohol dependent offenders.

**CJ 521. Forensic Social Work (3).** Cross-listed as SCWK 521. Introduction to and overview of the field of forensic social work. Content focuses on the role of social workers in forensic arenas, and the issues related to recent practice trends, relevant theoretical frameworks, collaborative team roles, and multisystem interactions. Psychosocial and legal issues are explored, with particular focus on intersections with family and social services, education, child welfare, mental health, substance abuse, criminal justice, diversity and human rights. Prerequisite: 6 hours of social sciences.

**CJ 530. Private Security (3).** Provides students with a fundamental understanding of the contemporary principles of security and crime prevention. Course materials and discussions explore fundamentals of physical security, security personnel and education, loss prevention, crime prevention and zones of protection.

**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 formats in relevant criminal justice subjects. Repeatable for credit up to 6 hours.

**CJ 593. Crime Causation and Criminal Justice Policy (3).** 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, 394, 407, 593, 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. Prerequisites: 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. Prerequisites: 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. Prerequisites: 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 intergroup and interorganization relations and dispute resolution techniques. Analyzes case studies. Prerequisites: 15 hours of criminal justice courses including CJ 191, or junior, senior or graduate standing.

**CJ 652. Juvenile Justice and Social Policy (3).** Analyzes decision-making processes in juvenile justice and the content of juvenile law and Supreme Court decisions affecting juvenile justice, and selected problems in juvenile justice. Reviews the juvenile justice reform movement. Covers delinquency prevention and control, and ethical issues associated with juvenile justice. Prerequisite: CJ 191.

**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, 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. Graded *Cr/NCr*.

**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, junior, senior or graduate standing.

**CJ 796. Criminal Typologies (3).** Introduces an area of criminology that categorizes large amounts of information into mutually exclusive categories. Analyzes the various categories of crimes, the situations under which they are committed, the offenders who commit them and the victims of those offenses. Examines the offenses of homicide, rape/sexual assault, aggravated assault, robbery/armed robbery, burglary, auto theft/carjacking, prostitution, drugs, gambling, cybercrime, white collar crime/occupational crime, arson and hate crimes.

**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 AGE 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 816. Correctional Administration (3) .** Analyzes basic methods utilized in the organization and accomplishment of objectives in correctional institutions. Reviews methods utilized in traditional correctional institutions, diagnostic centers, halfway houses, and other treatment models.

**CJ 817. Crime in Popular Culture (3).** Analyzes film as an expression of popular culture; focuses on films dealing with the 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. 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 formats 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 873. Advanced Criminal Law (3).** Presents students with a greater understanding of the complex structure of penal codes in the United States. Traditional issues covered in a criminal law course, such as actus reus (the act requirement), mens rea (the mental element), and punishment philosophy are addressed. Challenges students to integrate these elements into a workable penal code that fits into the larger framework of the purposes that punishment serves.

**CJ 874. Seminar in Qualitative Methods (3).** Practical introduction to qualitative research methods and their applicability in the social sciences. Provides an overview of the theoretical and philosophical perspectives informing qualitative research. Methods (design, data collection, data analysis and reporting) used in qualitative research for criminal justice and criminology are examined and applied.

**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 with 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 AGE 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. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership.

**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.

**CJ 900. Thesis (1–6).** Prerequisite: consent of graduate advisor.

## Ethnic Studies (ETHS)

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 communication and Master of Arts in liberal studies. See requirements for these programs in the Elliott School of Communication and Master of Arts in liberal studies sections of the Graduate Catalog.

### Courses for Graduate/Undergraduate Credit

**ETHS 512. Diversity and Aging (3).** Cross-listed as AGE 512. Introduces students to issues in aging that are unique to minority older adults. Demonstrates differences in the aging experience by race/ethnicity and addresses the differential patterns of health and illness in later life in relation to race/ethnicity, gender and culture. In addition, the student develops an appreciation for how race/ethnicity affects mental and social dimensions of life. Attention is given to the impact on the social, financial and health aspects of those who speak a language other than English. Course perspective is interdisciplinary, taking into account the physical, psychological, interpersonal and social influences which shape our understanding of the challenges older

minorities face when relocating to the United States. *Course includes diversity content.*

**ETHS 540. Advanced Cross-Cultural Communication (3).** Special topics in human relations. *Course includes diversity content.* Prerequisite: ETHS 210.

**ETHS 545. Cross-Cultural Communication Theory (3).** An examination of current cross-cultural communication theory and its impact on contemporary cross-cultural issues. *Course includes diversity content.*

**ETHS 579. Asian Women in Modern History (3).** Cross-listed as HIST 579 and WOMS 579. Examines women's historical and contemporary experiences in Asian America and eight major countries in modern Asia. Covers topics on Asian women's activism in relation to nationalism and women's rights. Investigates Asian women's roles and statuses in the family and society and their educational attainment and contributions to the export-oriented industrialization of the Asia-Pacific region. Examines the intra-regional migration of female guest workers among various countries in Asia. Traces the ways in which the changes in immigration laws during the 20th century affect patterns of Asian women's migration to the United States. Introduces writing that integrates Asian women's lives and Asian American experiences into the discourses on ethnicity, national origin, class, gender and sexual orientation in the United States and the Asia-Pacific region. *Course includes diversity content.*

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

**ETHS 725. Concepts of Cross-Cultural Communication (3).** A critical survey of the concepts of cross-cultural communication. An in-depth examination of the rationale used to evaluate different ethnic groups' language and behavior. Provides a conceptual understanding of special implications and necessary adaptations of communication to, between and among diverse ethnic groups in our society. *Course includes diversity content.*

# Earth, Environmental and Physical Sciences (EEPS)

**Graduate Faculty**

*Professors:* Elizabeth C. Behrman, William D. Bischoff (graduate coordinator), Jason Ferguson, Hussein Hamdeh, Nick Solomey

*Associate Professors:* Collette D. Burke, William Parcell (chairperson, geology), Syed Taher

*Assistant Professors:* Keith Gray, Andrew Swindle

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 master'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 use 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 interrelated disciplines: geology, environmental science and physics. Multidisciplinary and interdisciplinary education for a candidate in EEPS will be achieved through specially designed coursework, research and other learning opportunities. Four required courses (EEPS 700, 701, 702 and 721) will provide knowledge and skills in scientific methodology, research design, and scientific writing and presentation. Follow-up courses (e.g., EEPS 710) and discipline-specific graduate courses will enable students to master advanced knowledge and skills in the field chosen by the student; discipline-specific or interdisciplinary research projects will foster the student's ability to conduct independent research, make scientific presentations and prepare quality scientific manuscripts.

The program is coadministered by the departments of geology and physics. It offers a variety of options for students pursuing a master's degree in EEPS—thesis, nonthesis 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 or 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 Admission to Graduate Study section of this catalog or at the Graduate School website: wichita.edu/gradschool.

## 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 700–899 courses, among which at least 8 hours must be EEPS required courses (including 2 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 requirements of differing career goals, students may choose a thesis, internship or nonthesis 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 choosing thesis research must present a research proposal to the EEPS faculty to ensure that the research has merit and can be completed in a reasonable period of time. After completing the written thesis, the student must give it a public oral defense.

A total of 30 credit hours is required, among which a maximum of 6 thesis credit hours can be counted toward the degree.

***Internship Option:*** Students wishing to gain interdisciplinary and/or professional skills in the fields covered by the EEPS program can participate in applied and/or basic research internship projects with 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.

A total of 33 credit hours is required, among which a maximum of 6 internship credit hours can be counted toward the degree.

***Nonthesis Option:*** This option is an alternative to thesis research or internship for degree requirements. Two plans of study are available under this option:

Plan A—Students are not required to take research courses, and a total of 36 credit hours is required. This plan is recommended for students who do not desire a career in industry or postsecondary education.

Plan B—Students are required to take research courses and conduct research under the supervision of an EEPS faculty member. A faculty-reviewed, final report is required. A total of 33 credit hours is required, among which a maximum of 3 research credit hours can be counted toward the degree.

**Courses for Undergraduate/Graduate Credit**

**EEPS 700. Technical Sessions (1).** Through seminar presentations by students, faculty and guest lectures, students critically analyze essential elements and skills of effective oral presentation of scientific research methodology, data and results to audiences of diverse backgrounds; learn techniques of effective use 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) 1R; 4L.** Survey of computer applications commonly used by scientists, emphasizing nonstatistical applications. Includes computer-assisted instruction, data management, presentation packages, Internet resources, digital image analysis, graphics 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. Prerequisite: graduate standing or instructor's consent.

**EEPS 702. Research Methods (1).** Essential elements and principles in scientific research, such as project design, funding, literature research, publication practices and issues of conflict of interest and commitment. Also addresses research misconduct and ethical issues in data acquisition, management, sharing and ownership. May include speakers 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. *Course includes diversity content.* Prerequisite: graduate standing 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. 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. *Course includes diversity content.* Prerequisite: EEPS 710 or instructor's consent.

**EEPS 760. Whole Earth Geophysics (3).** Examines the principles of physics as applied to both surface features and the interior configuration of the earth. Studies include an understanding and measurement of the physical properties of magnetism, heat flow, seismicity and gravity. These physical parameters are used to determine the internal structure and to explain the active processes of the earth. Prerequisites: GEOL 111, MATH 243 and PHYS 214 or equivalent, or instructor's consent.

# English (ENGL)

**Graduate Faculty**

*Distinguished Professors:* Albert Goldbarth (Adele B. Davis Distinguished Professor of Humanities), Mary A. Waters (M.V. Hughes Professor of English and chairperson)

*Professor:* Christopher K. Brooks

*Associate Professors:* Margaret Dawe (creative writing director), Darren Defrain (director of writing program), Kimberly Engber (Honors College dean), Jean Griffith

*Assistant Professors:* Rebeccah Bechtold (graduate coordinator), T.J. Boynton, Francis Connor (undergraduate coordinator), Danielle Koupf, Sam B. Taylor

Both the Master of Arts (MA) degree in English and the Master of Fine Arts (MFA) degree in creative writing are offered by the English department at Wichita State University.

## Dual/Accelerated Bachelor's to Master's degree Program

The dual/accelerated bachelor's to master's program in English is a coordinated program leading to both a bachelor's and master's degree. Admission requirements for the program are given in the Undergraduate Catalog. A student admitted to the dual/accelerated program in English as an undergraduate may take up to 9 joint degree credit hours that are applied toward both the bachelor's degree and master's degree program requirements. A course taken for joint credit must be so identified at the time of enrollment in the course. A student in the dual/accelerated program will be admitted to the MA program in English upon being awarded the bachelor's degree if all admission requirements for the master's program are satisfied at that time and the student has made continued satisfactory progress.

## Master of Arts

The Master of Arts (MA) program in English equips graduate students with the knowledge and skills necessary both to the outstanding teacher and to the well-prepared candidate for further graduate study. The graduate committee of the department accordingly requires its master's candidates to follow a course of advanced study that leads to a comprehensive knowledge of English and American literature. Candidates are also given training in the principles of literary criticism and in the use of bibliographic tools so that they will have a general competence in criticism and research.

### Admission Requirements

Applicants must meet the general requirements of the Graduate School, with the additional requirement that they have a 3.000 grade point average in their previous work in English courses. The coordinator of graduate studies in English will then evaluate the applicant's transcript, prescribing additional undergraduate hours for those who have fewer than 24 credit hours in English and American literature or in other work acceptable to the department of 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.

In addition to Graduate School application materials, applicants to the English MA program should submit a 500 word statement of purpose explaining their goals or reasons for pursuing an MA in English as well as their skills, accomplishments or experiences that suggest they will be able to succeed in the program. The English department Master of Arts program accepts applications for admission on an ongoing basis.

Applicants who have earned degrees at institutions in countries in which English is not the native language must score at least 600 paper-based, or 100 Internet-based on the TOEFL (Test of English as a Foreign Language) Examination, or an overall band score of 7.5 on the IELTS before being admitted to the MA degree program in English.

***Academic Advising.*** All MA candidates in English are advised by the graduate coordinator in English. The coordinator and the student establish a plan of study that takes into account the student's interests and future vocational plans.

***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 and Plan C programs and up to 6 hours of credit on Plan B. 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. Credit for transfer courses will not count toward the required number of courses at the 700 level or above, unless the transfer hours are of appropriate level from Kansas Board of Regents institutions.

***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 completion with a grade of *C-* or better of at least 15 hours of undergraduate work in a single foreign language or the equivalent as defined by 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 completion of 6 hours of linguistics with a grade of *C-* or better.

### Degree Requirements

ENGL 700, Introduction to Graduate Study in English, normally should be included in the student's first semester of graduate study.

At least seven courses toward all degree plans must be at the 700 level or above. The remaining hours may be taken at any level 500 or above. Candidates completing 500- or 600-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 and consists of 33 credit hours, is especially designed for teachers. Plan B, a 30-credit-hour plan which requires the student to submit a master's thesis, places more emphasis on research, scholarly writing and the independent study of literature. Plan C, which emphasizes a comprehensive and cohesive study of literature, also requires 33 credit hours and is designed for students who wish to pursue advanced study of literature through coursework.

All three degree plans require the following core literature coursework: ENGL 700, Introduction to Graduate Study in English; two major author(s), genre or special topics classes (ENGL 508, 512, 513, 514, 515, 516, 520, 536, 540, 546, 580, 712, 713, 714, 715, 816, 840, 860); two courses from British literature before 1900 (521, 522, 524, 526, 527, 720, 721, 722, 724, 726, 730, 814); one course in American literature before WWI (503, 504, 703, 704); and one course in 20th/21st century studies—British, American or Anglophone (532, 533, 705, 728, 733).

With graduate coordinator approval, courses with a minimum of 80 percent of the content meeting a requirement can occasionally be used to satisfy a requirement other than the one for which they are listed. No single course can be used to satisfy more than one requirement. A major author(s) course cannot be used to satisfy a period requirement. With approval of the graduate coordinator, a course can be repeated once for credit if at least 80 percent of the content is different. At least seven courses must be taken at or above the 700 level. All English department classes at the 500 level or above not taken to meet another requirement can earn credit as an elective provided that student has sufficient coursework at the 700 level or above. With graduate coordinator approval, one elective may be taken in another department or college, such as the College of Education.

In addition to the above core requirements, each degree plan has additional requirements as follows:

***Plan A*** requires the completion of the core requirements plus one course in composition theory and pedagogy (ENGL 680, 780); and three elective classes in linguistics, literature or methods of teaching English. A master's thesis is not required, but students must take a comprehensive examination guided by their coursework and a standard suggested reading list. A Plan A student will be examined on two literary periods, one American, one British. At least one of the two literary periods must cover literature before 1900. Students in Plan A will also be tested on a question drawn from composition and rhetoric pedagogy. Students may take either the December or May comprehensive examination by informing the graduate coordinator of intent to do so.

***Plan B*** requires the core requirements plus two elective classes in linguistics, literature or methods of teaching English; and a master's thesis (ENGL 890). A maximum of 3 hours of ENGL 890 can be applied toward the degree. Plan B also requires a written comprehensive examination and an oral thesis defense. The oral defense committee includes the director of the thesis, a graduate faculty member from the English department, and a reader from outside the English department who is a graduate faculty member. The written comprehensive examination will be guided by their coursework and a standard suggested reading list. A Plan B student will be examined on three literary periods, with at least one each from American and British. At least one of the three literary periods must cover literature before 1900. Students may take either the December or May comprehensive examination by informing the graduate coordinator of intent to do so.

***Plan C*** requires the completion of the core requirements plus four elective classes in linguistics, literature or methods of teaching English chosen in consultation with the graduate coordinator. Plan C students must take a written comprehensive examination guided by their coursework and a standard suggested reading list. A Plan C student will be examined on three literary periods, with at least one each from American and British. At least one of the three literary periods must cover literature before 1900. Students may take either the December or May comprehensive examination by informing the graduate coordinator of intent to do so.

## 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 coursework 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 coursework to allow for a variety of possible interests.

All MFA students are required to take ENGL 700, Introduction to Graduate Study in English. Teaching assistants must take ENGL 681, Editing American English, 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 3.000 grade point average in their previous coursework 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 coursework 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. Deadline for application: February 1. Admission will be for fall only.

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, or 100 Internet-based on the TOEFL (Test of English as a Foreign Language) Examination or an overall band score of 7.5 on the IELTS 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.

***Advising.*** 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 credit 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 credit 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 credit hours;
2. Three (3) hours in ENGL 700, Introduction to Graduate Study in English, or the equivalent, required of all graduate students. ENGL 700 normally should be included in the student's first semester of graduate study;
3. Three (3) hours in ENGL 712, Graduate Studies in Fiction; 713, Graduate Studies in Poetry; or ENGL 714, Graduate Studies in Drama. With departmental consent, each course may be repeated for a maximum of 6 hours credit;
4. Three (3) hours in ENGL 733, Seminar 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 (2) 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, fine arts or other discipline outside English. The choice is contingent upon the student's having the proper prerequisites; and
7. Graduate teaching assistants are required to take ENGL 681, Editing American English, and 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 800 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 and 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 chairperson. 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 850, 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 the project director and a second reader, both creative writing faculty members in the student's genre, will examine the work and determine whether or not the project meets the standards of acceptance.

### Courses for Graduate/Undergraduate Credit

**ENGL 503. 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. Prerequisites: junior standing and one college literature course.

**ENGL 504. 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. Prerequisites: junior standing and one college literature course.

**ENGL 508. Critical Studies in Film (3).** Subjects announced each semester. Intensive analysis of a particular film genre, period, director or theme, giving special attention to the historical, cultural, theoretical and technical contexts in which the films were made. Repeatable once for credit with a change of content. Prerequisites: ENGL 102, one college-level literature or film course.

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

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

**ENGL 514. Studies in Drama (3).** Subjects announced each semester. Repeatable once for credit. Prerequisites: 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 516. Studies in a Major Author (3).** Designed to allow in-depth study of the works of a major American or British author, emphasizing the development of that author's art and considering the work from a variety of critical perspectives.

**ENGL 517–518. Scriptwriting 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 scriptwriting. If possible, the scripts are given in-class readings by actors. Prerequisite: instructor's consent.

**ENGL 520. Epic and Romance (3).** Readings in classic and early Western narratives, beginning with Homer's Bronze-Age epic and ending with late medieval romance. Examines the literary conventions and cultural assumptions that typify these works. Pays particular attention to the historical shift in interest from epic to romance as a reflection of broad changes, not only in literary form and content, but also in social customs and worldview. Prerequisites: junior standing and one college literature course.

**ENGL 521. Medieval Literature (3).** Works by writers of the eighth to 15th centuries, often thematically or historically focused. Readings may include lyric poetry, epic, romance, saga and drama. Prerequisites: junior standing and one college literature course, or instructor's consent.

**ENGL 522. Renaissance Literature (3).** Works by writers of the 16th through the mid-17th centuries, often thematically or historically focused. Readings may include poetry, drama, fiction and nonfiction prose. Prerequisites: junior standing and one college literature course, or instructor's consent.

**ENGL 524. Restoration and 18th Century Literature (3).** Works by writers of the late 17th through the 18th centuries, often thematically or historically focused. Readings may include poetry, fiction, drama and nonfictional prose. Prerequisites: junior standing and one college literature course, or instructor's consent.

**ENGL 526. Romantic Literature (3).** Works by writers of the late 18th and/or early 19th centuries, often thematically or historically focused. Readings may include fiction, poetry, drama, and/or literary criticism or other nonfiction prose. Prerequisites: junior standing and one college literature course, or instructor's consent.

**ENGL 527. Victorian Literature (3).** Works by writers of the mid to late 19th century, often thematically or historically focused. Readings may include fiction, poetry, drama, and/or literary criticism or other nonfiction prose. Prerequisites: junior standing and one college literature course, or instructor's consent.

**ENGL 532. Modern British Literature (3).** Irish and English literature of the 20th century. Subjects announced each semester. Repeatable once for credit with change of topic. Prerequisites: junior standing and one college literature course.

**ENGL 533. 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 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. *Course includes diversity content.*

**ENGL 540. Introduction to Critical Theory (3).** Introduces students to critical literary theory. Topics may include readings in gender theory, historicism, psychoanalytical theory, cultural criticism, Marxism, reader-response theory and deconstruction. May also offer a survey of

classical and early-modern critical methodologies from Plato to the formalist schools of the early 20th century. Prerequisites: English 102 and/or instructor's consent.

**ENGL 546. Studies in Ethnic Literature (3).** The study of literature by a specific ethnic group or groups in the United States or Great Britain. Content varies by instructor, and subjects are announced each semester. Fosters an appreciation for the unique literary tradition of a distinct ethnic group or groups and gives students some understanding of the larger historical and national contexts in which that tradition emerged. Repeatable once for credit with a change in topic. *Course includes diversity content.* Prerequisites: junior standing and one college-level literature course.

**ENGL 550. Independent Reading (1–3).** For majors and nonmajors who wish to pursue special reading or research projects in areas not normally covered in coursework. Repeatable once for credit. Prerequisites: ENGL 102 and departmental consent.

**ENGL 576. Advanced Studies in the Graphic Novel (3).** Designed to allow in-depth study of the graphic novel with special emphasis on critical responses. Readings may be thematically or historically focused. Prerequisites: junior standing, ENGL 377, and at least one other college literature course or instructor's consent.

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

**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. Repeatable for credit. Graded *S/U*. Prerequisite: appointment as a graduate teaching assistant in the department of English.

**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.

**ENGL 590. Senior Seminar (3).** In-depth study of a specialized literary topic. Emphasis is on focused readings, interactive debate, individual research and the presentation of research reports and essays. Topics vary according to the specialization of the instructor. This is a required capstone course for the English major and should be taken during a student's final year of study. Prerequisite: completion of 18 hours toward the major. Not available for graduate 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 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. Designed especially for prospective and practicing teachers; may not be taken for credit by students with credit in ENGL 780.

**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, 102.

**ENGL 686. Professional, Technical and Scientific Writing and Editing (3).** Introduces students to editing and writing in professional, scientific, technical and medical fields. Through careful reading and analysis of exemplary technical and scientific documents, students gain exposure to numerous writing genres produced for different audiences and contexts. They practice writing in several forms, which may include research summaries, press releases, procedures, specifications, infographics, public service announcements, fact sheets and popular science writing. Assignments help strengthen students' rhetorical awareness, as well as the precision, clarity and readability of their writing.

**ENGL 700. 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 interpretative and research essays. Maintains a balance between criticism and research throughout the semester.

**ENGL 703. Seminar in American Literature I (3).** Advanced study of major issues and themes in fiction, poetry and nonfiction prose from the early American period to the Civil War, with attention to the social and cultural contexts that shaped the literary history of the colonial period and the early nation. Repeatable once for credit with a change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 704. Seminar in American Literature II (3).** Advanced study of major issues and themes in fiction, poetry and nonfiction prose from the postbellum period to 1920, with attention to the social and cultural contexts that shaped such trends as realism and modernism. Repeatable once for credit with a change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 705. Seminar in American Literature III (3).** From 1920 to 1970. Advanced study of major issues and themes in fiction, poetry and nonfiction prose from 1920 to the contemporary period, with attention to the social and cultural contexts that shaped such trends as modernism and postmodernism. Repeatable once for credit with a change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 712. Graduate Studies in Fiction (3).** Selected topics in the development of the form and content of prose fiction. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 713. Graduate Studies in Poetry (3).** Selected topics in forms, techniques and history of poetry. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 714. Graduate Studies in Drama (3).** Selected topics in the history and nature of dramatic literature. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 715. Seminar in Chaucer (3).** Advanced study of Chaucer's major works. Readings are in Middle English and include selections from the *Canterbury Tales*, *Troilus and Criseyde*, the dream visions, the lyrics, and a limited number of comparative readings in other late 14th century authors such as Langland, the Gawain-Poet and Gower. Emphasis is placed on close reading and interpretation of the text, and on the historical context of Chaucer's work, which involves study of subjects such as the black plague, the peasants' revolt, guilds, fairs, chivalry, trade and healing. Repeatable once for credit with a change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 720. Seminar in Old English (3).** Cross-listed as LING 720. Advanced course in Old English language and literature. Studies the Old English language in enough detail to enable the reading of some prose and poetry, including parts of *Beowulf* and the elegiac poems in the original. Some literature, including all of *Beowulf*, is read in translation. Particular attention is given to close reading and interpretation of the text, and to important literary and cultural features of the period and its Norse heritage. Repeatable once for credit with a change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 721. Seminar in Medieval Literature (3).** Advanced study of selected works from old and middle English literature and continental literature of the medieval period, with an emphasis on close reading as well as the social and cultural context of the readings. Content varies at the discretion of the instructor. Readings may include epic, romance, drama, lyric and satire, as well as examples of discourse—oratory, history, memoir, political writings, philosophy—and major works and authors such as *Beowulf*, Cynewulf, Wulfstan, Chretien de Troyes, Marie de France, Chaucer, the Gawain-Poet and Malory. Repeatable once for credit with a change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 722. Seminar in Renaissance Literature (3).** Advanced study of works by important writers of the 16th and earlier 17th centuries. Content varies at the discretion of the instructor. Offerings may be thematically or historically focused, and may include poetry, drama, fiction or nonfiction prose. Repeatable once for credit with a change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 724. Seminar in Restoration and 18th Century British Literature (3).** Advanced study of major selected

works and authors of the period between 1660 and 1789, covering the crucial genres of drama, poetry, the essay and the novel. Content varies at the discretion of the instructor. Study may include satire, political discourse, comedy, tragedy, parody, and/or innovative forms such as the novel and fictionalized biography. Canonical figures such as Congreve, Dryden, Pope, Swift, Fielding and Johnson may figure prominently. Historical contexts are emphasized. Repeatable once for credit with a change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 726. Seminar in Romantic Literature (3).** Advanced study of the authors, genres, themes and/or movements in late 18th and early 19th century literature, with content varying at the discretion of the instructor. Possible topics might include Romantic-era women writers, the historical contexts of the French Revolution and British imperialism, the rise of the novel, the canonical Romantic poets (Blake, Wordsworth, Coleridge, Shelley, Byron and Keats), the development of mass print culture, and/or representations of sublime landscapes, solitary meditation and European travel. Repeatable once for credit with a change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 728. Seminar in Modern British Literature (3).** Advanced study of the authors, genres, themes and/or movements in British literature (1900 to 1980). Possible topics may include the British novelists (Conrad, Lawrence, Woolf, Forster, Joyce, Waugh, Greene, Amis, Durrell, Burgess, etc.); the British poets (Housman, Yeats, Lawrence, Eliot, Auden, Thomas, Hughes, etc.); the playwrights (Shaw, Beckett, Eliot, Coward, Maugham, etc.). The seminar may also focus on additional poets, novelists and dramatists, such as modernism, postmodernism, etc. Repeatable once for credit with change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 730. Seminar in Victorian Literature (3).** Advanced study of the authors, genres, themes and/or movements in Victorian literature (1832–1900). Possible topics might include the Victorian novelists (William Thackeray, Charles Dickens, George Eliot, Anthony Trollope, Thomas Hardy, Rudyard Kipling, etc.); the Victorian poets (Tennyson, Browning, Arnold, Arthur Hugh Clough, Dante, Gabriel Rossetti, Christina Rossetti, George Meredith, Algernon Charles Swinburne, etc.); the Victorian prose writers (Carlyle, Mill, Newman, Ruskin, Arnold, Pater, etc.). The seminar may also focus on themes within Victorian literature, such as the Young England movement, the Higher Criticism and its effects, the Woman Question, industrialization and labor, or the Victorian Empire. Repeatable once for credit with a change of content and departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 733. Seminar 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. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**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.

**ENGL 781. Graduate Cooperative Education (1–3).** Similar to ENGL 481 in design and content, this course provides the student with practical experience, under academic supervision, that complements and enhances the student's academic program. Individual programs must be formulated in consultation with appropriate faculty sponsors and approved by departmental consent. Prerequisites: ENGL 700 and at least 12 total hours in graduate English courses.

### Courses for Graduate Students Only

**ENGL 801. Creative Writing: Fiction (3).** Advanced work in creative writing: literary fiction. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. 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. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Repeatable for credit. Prerequisite: consent of creative writing director.

**ENGL 808. Graduate Studies in Film (3).** Examines film as a literary form while acknowledging its unique status as a visual medium. Subjects the film medium to the standard tools of literary criticism and critical theory to fully comprehend exactly how film functions as a narrative form. Students are directed to develop a vocabulary of film terminology and to understand how film functions as a story-telling medium. Emphasis is placed on interpretive strategies. Prerequisites: graduate standing, completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**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 may include the rise of the novel, the changing role of poetry, and the evolution of drama, or similar topics. Repeatable once for credit with a change of content. Prerequisites: graduate standing and completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 816. Graduate Studies in Major Author(s) (3).** Careful study of the works of a major author with readings in secondary sources. Assignments may include reports, discussions and papers. Occasionally an appropriate pairing of major authors may be offered. Repeatable for credit with change of content. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 825. Theories of Rhetoric: Classical (3).** An intensive study of the rhetorical theories of classical writers from 466 B.C. to the decline of Roman oratory. Emphasizes Isocrates, Plato, Aristotle, Quintilian, Cicero and Longinus.

**ENGL 826. Theories of Rhetoric: Renaissance to Early Modern (3).** Cross-listed as COMM 831. A study of the emerging patterns of rhetoric from the Second Sophistic to modern times. Analyzes the rhetorical systems associated with such figures as Augustine, Fenelon, Bulwer, Sheridan, Steele, Rush, John Quincy Adams, Blair, Campbell and Whately.

**ENGL 840. Graduate Studies in Criticism (3).** Selected topics in the theory and practice of literary criticism. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 850. Directed Reading (2–3).** For graduate students who want to pursue special research in areas not normally covered in coursework. A directed reading prospectus must be approved by the directing faculty and the graduate coordinator before registering. Repeatable for credit with departmental consent. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**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. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

**ENGL 875. MFA Final Writing Project (1–6).**

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

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

**ENGL 885. Craft of Fiction (3).** Subject announced each semester. Advanced study in the forms and techniques in literary fiction such as plot, setting or voice. Repeatable once for credit with creative writing program director's consent. Prerequisite: students not enrolled in the MFA program must receive permission from the instructor. A student may not take more than one craft course per semester.

**ENGL 886. Craft of Poetry (3).** Subject announced each semester. Advanced study in the forms and techniques in literary poetry such as the poetic line, image or rhythm. Repeatable once for credit with creative writing program director's consent. Prerequisite: students not enrolled in the MFA program must receive permission from the instructor. A student may not take more than one craft course per semester.

**ENGL 890. Master's Thesis (3).** May be repeated, but a maximum of three credit hours of ENGL 890 can be applied toward the degree requirements. A thesis prospectus must be approved by the thesis advisor and the graduate coordinator before the student may register for 890. Graded *S*/*U*. Prerequisite: completion of or concurrent enrollment in ENGL 700, or permission of English graduate coordinator.

## Ethnic Studies

See Community Affairs, School of, page 142.

# Geography (GEOG)

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

**Courses for Graduate/Undergraduate Credit**

**GEOG 510. World Geography (3).** A study of world regions including an analysis of each region's physical, political, economic, historical and cultural geography. Focus on a specific geographical problem for in-depth study and analysis. May not be taken if credit has been received for GEOG 210. Prerequisite: instructor's consent.

**GEOG 530. Geography of Latin America (3).** Physical, political, economic, historical and human geography of Latin America.

**GEOG 542. Geography of Europe (3).** Physical, political, economic, historical and human geography of Europe.

**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**

*Professor*: William D. Bischoff (graduate coordinator, EEPS)

*Associate Professors:* Collette D. Burke, William Parcell (chairperson)

*Assistant Professors:* Keith Gray, Andrew Swindle

Students interested in graduate studies in geology should see the separate section in this catalog for the earth, environmental, and physical sciences (EEPS) Master of Science program for details. This program offers advanced training in research, knowledge and skills in geology, environmental science or physics. For students concentrating their efforts in geology, the following courses are available for graduate credit in this degree program.

**Courses for Graduate/Undergraduate Credit**

**GEOL 526. Sedimentary Geology (3). 2R; 2L.** Origin, classification, primary structures and physiochemical 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 (3). 6L.** Field mapping methods with special reference to use of level, compass, barometer, alidade and airphotos. Field trips required. Prerequisite: GEOL 102 (with lab) or 111 or GEOL/GEOG 201.

**GEOL 544. Structural Geology (3). 2R; 2L.** 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; 2L.** 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 sequency stratigraphy, measurement and correlation of stratigraphic sections in outcrops. Requires field trips. Prerequisites: GEOL 312, 526.

**GEOL 562. Regional Geology of the United States (2).** A detailed regional survey of the general geology, geomorphology, stratigraphy and structural geology of the U.S., including its national parks, and their interrelationships. Requires field trips (instructor's option). Prerequisite: GEOL 102 or 111 or GEOL/GEOG 201.

**GEOL 564. Remote Sensing Interpretation (3). 2R; 2L.** 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; 2L.** Systematic survey of major fossil biogeological materials, analysis of the origin and evolution of life, and paleoecological interpretation of ancient environments and climates. Includes handlens and binocular microscopic examination of major fossil biogeological materials. Includes application of analyzed fossil data to the solution of problems in biogeochronology, paleoecology, paleoclimatology and paleogeography. Cites examples from fields of invertebrate, vertebrate and micropaleontology, and palynology. May require museum and field trips. Prerequisite: GEOL 312.

**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 211; or instructor's consent.

**GEOL 630. Field Studies in Geology (2–6). (A) Geology of Kansas (1–3); (B) Geology and Natural History of Tropical Marine Environments (3).** 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. Prerequisite: GEOL 324, 540, 544, 552.

**GEOL 650. Geohydrology (3). 2R; 2L.** Capstone course. The hydrologic cycle, physical and chemical properties of water; fluid flow through permeable media, exploration for and evaluation of groundwater, water quality and pollution, and water law. Prerequisites: GEOL 552, MATH 242 and 243; or instructor's consent.

**GEOL 657. Earth Science Instructional Methods (3).** Practice in teaching an introductory course in the earth sciences. Developing and presenting the latest scientific laboratory techniques and evaluating their effectiveness. May be taken more than once if content and objectives differ. Prerequisite: senior standing and department chairperson's permission.

**GEOL 678. Geologic Perspectives on Climactic Change (3).** Capstone course. Modern climate and climactic changes and analysis of climactic deterioration; systematic study of geologic evidence of climate change through time. Emphasizes theoretical causes, feedback mechanisms and recognition of effects on climactic perturbations in the rock record. Prerequisites: GEOL 312 , 526.

**GEOL 680. Geologic Resources and the Environment (3). 2R; 2L.** 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; 2L.** 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, 552.

**GEOL 684. Methods of Subsurface Analysis (2). 1R; 2L.** 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, 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, (i) stratigraphy, (j) geophysics, and (k) petroleum. Requires a written final report. Prerequisite: consent of sponsoring faculty.

**GEOL 702. Environmental Science I (5). 3R; 4L.** Advanced theoretical and applied principles of the interdisciplinary study of environmental science. Includes chemical cycling, atmospheric chemistry, aquatic chemistry and phase interactions. 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 EEPS master's program. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Prerequisite: acceptance in the EEPS master's program or instructor's consent.

**GEOL 703. Environmental Science II (5). 3R; 4L.** Advanced theoretical and applied principles of the interdisciplinary study of environmental science. Includes

environmental chemical analysis, environmental toxicology, aquatic microbial biochemistry, 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 EEPS master's program. Prerequisite: GEOL 702 or instructor's consent.

**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 726. Carbonate Sedimentology (3). 2R; 2L.** 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; 2L.** 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 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 seven-day field trip. Prerequisites: GEOL 312, 526, 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. Covers the mass transport in both the saturated and vadose zones as well as the occurrence and movement of nonaqueous 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. Prerequisites: GEOL 650, 681, MATH 344, or instructor's consent.

**GEOL 752. Climactic Evolution of the Earth (3).** Basics of climatology and paleoclimatology, and recognition of paleoclimatic indicators in the rock record. Climatic changes at different scales in Earth history and possible causes, and nature of climactic records. Roles of climate change on the evolution of Earth's biosphere, hydrosphere, atmosphere and lithosphere. Field trip(s) may be required. Prerequisite: GEOL 721, graduate standing, or instructor's consent.

**GEOL 760. Exploration 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 techniques. Prerequisites: completion of geology undergraduate math and physics requirements; MATH 344 or 555; GEOL 324, 544, 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; the application of linear and nonlinear discriminate analysis, various factor analytic techniques, hard and fuzzy clustering, linear and nonlinear 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.

**GEOL 795. Earth and Space Physics (3).** Cross-listed as PHYS 795. An introduction to the geosciences and astrophysics of the solar system. Topics include the surface, interior and atmospheres of the planets with a comparative planetology approach, and the sun-planet system including solar physics and the effect of the sun on the earth's environment and geologic history. Prerequisites: PHYS 313–314, and MATH 242, or EEPS 721, or instructor's consent.

### Courses for Graduate Students Only

**GEOL 800. Research in Geology (3). 9L.** Research in special areas of geology: (a) general, (b) mineralogy, (c) petrology, (d) structural, (e) paleontology, (f) economic geology, (g) sedimentation, (i) stratigraphy, (j) geophysics, and (k) 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. May require field trips. Repeatable for credit when content differs. Prerequisites: graduate standing, instructor's consent and two years of professional postgraduate practice in geology.

**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. Where appropriate, travel, lodging and board costs are charged. Repeatable for credit when locality and content differ. 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 890. Thesis (1–6).** Prerequisite: departmental consent.

# History (HIST)

**Graduate Faculty**

*Distinguished Professor:* Robert E. Weems, Jr. (Willard W. Garvey Distinguished Professor of Business History)

*Professors:* John E. Dreifort, Keith H. Pickus (liaison to WSU Foundation), Jay M. Price (chairperson and director of local and community history program)

*Associate Professors:* George Dehner, Robin Henry, Ariel Loftus, Robert Owens (graduate coordinator), Craig L. Torbenson

*Assistant Professors:* Jeff Hayton, Helen Hundley

## Master of Arts and Areas of Specialization

The history department offers courses of study leading to the Master of Arts (MA) degree with specializations in U.S. history, the ancient and medieval world, European history, and local and community history.

### Admission Requirements

Admission to the MA program in history requires completion of an undergraduate major in history, or a minimum of 18 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 average in history may be granted a probationary admission. Applicants must submit a one page *Statement of Purpose,* and a writing sample of no more than 20 pages to the graduate coordinator. International students are required to have a minimum TOEFL score of 600 paper-based, or 100 Internet-based, or an overall band score of 7.5 on the IELTS. The application deadline for domestic and U.S. resident students for fall admission is March 15, and October 1 for spring admission. For international students, the deadlines are April 1 and August 1, respectively.

### 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 Methods | 3 |
| HIST 727 | Readings in History | 3 |
| HIST 730, 733 | Seminars | 9 |
| HIST 500- and 600-level courses | | 12 |
| HIST 801 | Thesis Research | 2 |
| HIST 802 | Thesis | 2 |
| *Total* | | *(31 hrs.)* |

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 Methods | 3 |
| HIST 727 | Readings in History | 6 |
| HIST 730, 733 | Seminars | 12 |
| HIST 500- and 600-level courses | | 12 |
| *Total* | | *(33 hrs.)* |

Students must pass written examinations in two comprehensive fields.

***Thesis Program in Local and Community History***

| *Course* | | *hrs.* |
|---|---|---|
| HIST 701 | Introduction to Local and Community History | 3 |
| One course selected from the following | | 3 |
| HIST 702 | Hist. Preservation | |
| HIST 703 | Museum Admin. | |
| HIST 705 | Intro. to Archives | |
| HIST 803* | Internship in Public History | |
| One course from the following | | 3 |
| HIST 528 | History of Wichita | |
| HIST 535 | History of Kansas | |
| HIST 725 | Advanced Historical Methods | 3 |
| HIST 730, 733 | Seminars | 6 |
| HIST 500- and 600-level courses | | 12 |
| HIST 801 | Thesis Research | 2 |
| HIST 802 | Thesis | 2 |
| *Total* | | *(34 hrs.)* |

*HIST 781, Cooperative Education in History, may be substituted for HIST 803 with the consent of the director of the local and community history program.

***Comprehensive Fields.*** Students may select from the following areas for their comprehensive examinations:

U.S. History
The Ancient and Medieval Worlds
Modern Europe
Local and Community History

Written examinations will be scheduled to take place during a two week period following the spring and fall breaks.

**Courses for Graduate/Undergraduate Credit**

**HIST 501. The American Colonies (3).** Colonization of the New World emphasizing the British colonists and their development.

**HIST 502. The American Revolution and the Early Republic (3).** Examination of selected phases of the Revolutionary, Confederation and Federal periods.

**HIST 503. The Age of Jefferson and Jackson (3).** 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).** Explores the origins and history of the bloodiest war this nation has ever fought. Students study antebellum America, focusing on the sectional differences between North and South, the institution of slavery, the abolitionist crusade, and the battlefields of the Civil War.

**HIST 505. The United States, 1865 to 1920 (3).** Examines the political, economic, social and cultural developments during the Gilded Age and Progressive Era. Students read articles, books, and primary documents to trace the experiences of the American nation and people as they transform from a growing nation into a global power with special focus on topics such as Reconstruction, political and economic corruption and reform, industrialization, the development and mechanization of the trans-Mississippi West; the rise of corporations, railroads, cities and the American State; and the challenges of African Americans, immigrants and women. In the end, students should walk away from the course with a better, more in-depth understanding of the history of, and major historical debates concerning, the Gilded Age and Progressive Era in the United States.

**HIST 506. The Vietnam Conflict (3).** Studies U.S. participation in Vietnam. Includes the French experience in Indochina, U.S. troop buildup, the Tet Offensive in 1968, and the anti-war movement at home. Examines political factors as well as military strategy, tactics and major battles.

**HIST 507. The United States, 1900–1945 (3).** Major topics explored 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 is a major component of this course. The emphasis, however, is "history from the bottom up" as the lives of ordinary Americans are examined.

**HIST 508. The United States Since 1945 (3).** 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 Vietnam also produced social, economic and political repercussions in the United Sates. 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 509. The African-American Historical Experience (3).** Provides a panoramic examination of the African-American experience. Chronologically, it covers life in Africa before the trans-Atlantic slave trade to the present day. It focuses on the social, political and economic development of the transplanted Africans in the United States. *Course includes diversity content.* Prerequisites: junior, senior or graduate status.

**HIST 510. 20th Century African-American History (3).** The 20th century witnessed a dramatic transformation of the African-American community. As the century began, the vast majority of African-Americans lived in the rural South. At century's end, the vast majority of African-Americans lived in urban areas across the U.S. Besides the demographic relocation of black America, the 20th century also witnessed the Black Freedom Movement (comprised of the Civil Rights and Black Power movements), which dramatically changed the social, economic and political status of blacks. Course examines these and other aspects of the African-American experience during the pivotal 20th century.

**HIST 511. Women in Early America, 1600–1830 (3).**

**HIST 512. Women and Reform in America, 1830–Present (3).**

**HIST 515. Economic History of the United States (3).** Cross-listed as ECON 627.

**HIST 517 & HIST 518. Constitutional History of the United States (3 & 3).** 517: the evolution of the American 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).** 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. Focuses 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).** Examines American diplomatic history during the 20th 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 super power.

**HIST 525. American Military History (3).** Surveys the American military heritage and its role in shaping the modern United States. Studies 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 526. The Civil Rights/Black Freedom Movement (3).** A detailed examination of the mid-to-late 20th century phenomenon known as the Black Freedom Movement, which consisted of the (passive-resistance) Civil Rights Movement and the (more aggressive) Black Power Movement.

**HIST 527. African-American Business History (3).** Surveys the history of African-Americans as entrepreneurs and business people. Drawing from a commercial tradition dating back to pre-trans-Atlantic Africa, business minded blacks overcame a variety of obstacles (such as slavery and Jim Crow segregation) to establish a commercial presence in America. Besides chronicling these efforts, the course also examines why African-American business history has traditionally received minimal attention in both the realms of American business history and African-American history.

**HIST 528. History of Wichita (3).** 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. *Course includes diversity content.*

**HIST 531. American Environmental History (3).** Examines the historical, physical, economic, scientific, technological and industrial interactions of the peoples of America with their environment. Emphasizes the period 1800–present. *Course includes diversity content.*

**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. *Course includes diversity content.*

**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 535. History of Kansas (3).** History of the Kansas region from Spanish exploration to the present, emphasizing the period after 1854.

**HIST 536. Survey of American Indian History (3).** Surveys the history of Native American nations from prehistoric 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. *Course includes diversity content.*

**HIST 538. The American West in the 20th Century (3).** 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).** 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).** "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 559. Classical Athens (3).** 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).** Begins with the conquests of Alexander the Great and provides an overview of the new Greek world which he left behind. Examines changes in Greek culture and society as a result of the spread of Hellenism to the older kingdoms of the New East and India. Includes the rise of the Roman Republic in the context of the Greek world in the first century B.C. with the defeat of Cleopatra, or the last queen of Egypt.

**HIST 562. The Roman Republic (3).** 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).** 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 first century B.C. Ends with the sack of Rome in the fifth century A.D. 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).** 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 became the English receive particular attention.

**HIST 575. The Italian Renaissance (3).** Italian history from the 14th through the 16th centuries emphasizing cultural achievements.

**HIST 576. The Reformation (3).** 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. *Course includes diversity content.*

**HIST 579. Asian Women in Modern History (3).** Cross-listed as ETHS 579 and WOMS 579. Examines women's historical and contemporary experiences in Asian America and eight major countries in modern Asia. Covers topics on Asian women's activism in relation to nationalism and women's rights. Investigates Asian women's roles and statuses in the family and society and their educational attainment and contributions to the export-oriented industrialization of the Asia-Pacific region. Examines the intra-regional migration of female guest workers among various countries in Asia. Traces the ways in which the changes in immigration laws during the 20th century affect patterns of Asian women's migration to the United States. Introduces writing that integrates Asian women's lives and Asian American experiences into the discourses on ethnicity, national origin, class, gender and sexual orientation in the United States and the Asia-Pacific region. *Course includes diversity content.*

**HIST 581. Europe, 1789–1870 (3).** 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).** 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 583. Europe, 1945–Present (3).** A survey of European history, 1945–present.

**HIST 588. History of Early Russia (3).** Covers the social, political and cultural history of Kievan and Muscovite Russia.

**HIST 589. History of Imperial Russia (3).** A survey of the political, social and cultural history of Imperial Russia.

**HIST 592. History of the Soviet Union (3).** A survey of Soviet history from the Bolshevik Revolution to the present.

**HIST 593. Former Soviet Union (3).** 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 discussions encourage students to examine their own ideas about history as an academic discipline. Prerequisite: 12 upper-division hours in history or instructor's consent.

**HIST 701. Introduction to Local and Community History (3).** Introduces the study of local history and community history. Discusses the various venues through which local and community history takes place including historic preservation, archival administration, museum studies, documentary work, and writing for a variety of audiences. Students learn relevant practices as well as issues that face those who study local topics and/or specific communities. 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. Students 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 Methods (3).** Reviews basic historical research methods, the general character of field bibliographies and recent interpretations, and the techniques of professional narrative development. Required of graduate degree students during their first year of enrollment. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. 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 730. Seminar in American History (3).** Repeatable for credit. Prerequisite: departmental consent.

**HIST 733. 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 (2).** 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. Graded *Cr/NCr*. Prerequisite: instructor's consent.

### 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 varies depending on student's interests and work setting. Internship should be in area related to student's MA thesis. Graded *S/U*. 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 Public Affairs

See Public Affairs, Hugo Wall School of, page 168.

# Liberal Studies (LASI)

*Graduate Coordinator:* David Soles (philosophy)

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

Applicants must have a bachelor's degree from an accredited institution. Applicants must also have a grade point average of 3.000 or better for the last 60 hours of coursework. 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. Select 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; and
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 credit hours;
2. No more than 12 credit 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; and
7. Completion of professional and scholarly training. Specific requirements vary depending upon concentrations and focus. Consult program for specific details.

### *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 3.000 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 coursework, including three required courses (LASI 501, 510 and 800) with the remaining courses selected from these designated courses: ANTH 612, 613, BIOL 503, 575, ENGL 860, GEOL 562, 570, HIST 535, 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 coursework, including LASI 201 and 501; undergraduates must have senior status or instructor's consent.

**LASI 750. Workshop: Special Topics (1–3).** Meets identified needs of specific audiences.

### Courses for Graduate Students Only

**LASI 800. Research Goals and Strategies (3).** Introduces the methodology and practice of interdisciplinary research. Emphasizes the integration of methods native to the humanities, social sciences and natural sciences. Develops skills required for the writing of research papers and theses. Required of all students in the Master of Arts in liberal studies (MALS) program during the first 12 hours of coursework.

**LASI 875. Thesis (1–6).** For students who are finishing the Master of Arts in liberal studies. The student writing a thesis is enrolled in this course until the thesis is completed and all thesis requirements have been satisfied. Prerequisite: consent of student's degree committee chairperson and instructor.

**LASI 885. Terminal Project (1–6).** For students who are near the end of their MALS program and involved in a terminal project. The terminal project may have many aspects such as field work, practicum, curriculum development or some other individualized activity. The project must be approved by the student's advisory committee and the MALS graduate coordinator prior to beginning work on any terminal activity, whether thesis or project. While the terminal project allows for more creative flexibility than the thesis option, students and their terminal project committee should be aware that the standards of quality and research expectations are equivalent. The student involved in a project must be enrolled in this course until the project is completed and all project requirements have been satisfied.

# Linguistics (LING)

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. 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. Dialectology (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. Advanced French 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 Phonology (2).** Cross-listed as RUSS 505.

**LING 505C. Spanish Phonetics (3).** Cross-listed as SPAN 505. Includes articulatory phonetics, phonemics, sound/symbol correspondences, dialectal and stylistic variations. Required for future Spanish teachers. Prerequisite: any 200-level SPAN course or departmental consent.

**LING 635. Introduction to Romance Linguistics (3).** Cross-listed as FREN 635 and SPAN 635. Provides a contrastive examination of the phonology, morphology and syntax of the major contemporary Romance languages (French, Spanish, Italian, Portuguese, Catalan and Romanian). Introduces students to the sound and writing system and basic grammar of Latin, and contrasts the phonological and grammatical systems of the contemporary Romance languages (French and Spanish in particular) with those of Latin. It compares specific features of the modern Romance languages synchronically (i.e., apart from Latin) as well. Students are advised to have a solid grounding in at least one Romance language (preferably French or Spanish) and a familiarity with at least one other (French, Spanish, Latin, Italian or Portuguese). Prerequisite: departmental or instructor's consent.

**LING 720. Seminar in Old English (3).** Cross-listed as ENGL 720. Advanced course in Old English language and literature. Studies the Old English language in enough detail to enable the reading of some prose and poetry, including parts of *Beowulf* and the elegiac poems in the original. Some literature, including all of *Beowulf*, is read in translation. Particular attention is given to close reading and interpretation of the text, and to important literary and cultural features of the period and its Norse heritage. Repeatable once for credit with a change of content and departmental consent.

### *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 651. Prerequisite: 3 hours of linguistics or MCLL 351 or 6 hours of anthropology.

**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 (2–3).** 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.

# Mathematics, Statistics and Physics

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

## Mathematics (MATH)

**Graduate Faculty**

*Distinguished Professor:* Victor Isakov (Emylou Keith and Betty Dutcher Distinguished Professor of Mathematics)

*Professors:* Alexandre Boukhgueim, Dharam V. Chopra, Thomas DeLillo (interim department chair), Buma L. Fridman, Xiaomi Hu, Zhiren Jin, Kirk E. Lancaster (mathematics graduate coordinator), Chunsheng Ma, Daowei Ma, Kenneth G. Miller, Hari Mukerjee, Phillip E. Parker, Ziqi Sun

*Associate Professors:* Stephen W. Brady, Lop-Hing Ho, Thalia Jeffres, Tianshi Lu, William Richardson

*Assistant Professors:* Catherine Searle, Mark Walsh

### Master of Science—Mathematics

#### *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 3.000 in mathematics courses, and meet Graduate School admission requirements.

#### *Degree Requirements*

To complete the MS degree, students must earn 33 credit hours of graduate credit*, with a minimum of 24 credit 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.

An oral comprehensive examination is required of all degree candidates. For students electing the nonthesis option, the exam covers four courses, numbered 700 or above, chosen by the student. For students electing the thesis option, the comprehensive examination takes place at the same time as the thesis defense. The examination normally concentrates on the thesis, plus possibly two courses, numbered 700 or above, chosen by the student.

A student in the PhD program in applied mathematics who does not have a previous master's degree in mathematics will be eligible to receive the MS degree in mathematics upon satisfying the following: (1) completion of at least 33 hours in mathematics courses applicable toward the PhD degree course requirements, and (2) passing the PhD qualifying exam. In such cases the qualifying exam will constitute the comprehensive exam for the MS degree.

*Complex and Vector Analysis for Engineers (MATH 758) and mathematics or statistics courses numbered below 600 do not count toward the 33 hours needed for the MS in mathematics.

### Dual/Accelerated Bachelor's to Master's Program

The dual/accelerated bachelor's to master's program in mathematics and statistics is a coordinated program leading to both a bachelor's and master's degree. Admission requirements for the program are given in the Undergraduate Catalog. A student admitted to the dual/accelerated program in mathematics and statistics as an undergraduate may take up to 9 joint degree credit hours—hours at the 700 level (or above) that are applied toward both the bachelor's degree and master's degree program requirements. A course taken for joint credit must be so identified at the time of enrollment in that course. A student in the dual/accelerated program will be admitted to the MS program in mathematics upon being

awarded the bachelor's degree if all admission requirements for the master's program are satisfied at that time.

Students admitted to the dual/accelerated program are expected to write a thesis as part of their master's degree program of study.

### Doctor of Philosophy—Applied Mathematics

The primary emphases in the doctoral program in applied mathematics are applied mathematics, statistics and applied mathematics-physics.

***Admission Requirements:*** Admission to the PhD program in applied mathematics requires completion of an undergraduate degree in mathematics, statistics or physics, including coursework in advanced calculus, linear algebra, numerical methods, and either modern algebra or mechanics, electromagnetism and quantum physics. A grade point average of 3.250 in coursework in mathematics, statistics and physics is required, as well as an overall GPA of 3.000 for the last 60 hours (3.250 if the student has a previous master's degree). The GRE subject test in mathematics or physics is recommended but not required.

#### *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 statistics, applied mathematics-physics or 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), PHYS 730, 761,795, and mathematics, statistics and physics courses numbered below 700 may not be included. At least 36 hours must be in mathematics, statistics and physics 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 (MATH 743) and Numerical Linear Algebra (MATH 751) are required of all students. In addition a student must complete one of the following three sets of requirements:

1. Real Analysis II (MATH 843); Complex Analysis I and II (MATH 745 and 845); Partial Differential Equations I and II (MATH 755 and 856); Applied Functional Analysis I and II (MATH 941 and 942); Numerical Analysis of Partial Differential Equations (MATH 852); and Theoretical Physics (PHYS 714).
2. Theory of Statistics I and II (STAT 771 and 772); Real Analysis II (MATH 843); 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).
3. Theoretical Physics (PHYS 714); Classical Mechanics (PHYS 821); Classical Electricity and Magnetism (PHYS 831); Quantum Mechanics (PHYS 811); Adv. Quantum Mechanics (PHYS 812); Methods in Experimental Physics (PHYS 816); Applied Regression Analysis (STAT 763); and two physics specialty subject classes from the four following classes: PHYS 871, 876, 881, 895.

***Professional and Scholarly Integrity Training Requirement:*** Students are required to take and pass the following four Collaborative Institutional Training Initiative (CITI) modules for the physical sciences: research misconduct; practices and responsible authorship; conflicts of interest and commitment; data acquisition, management sharing and ownership. This should be done during the first year as a student in the program.

***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 student will choose to be examined in two of the following four areas: (1) real analysis; (2) numerical linear algebra; (3) statistics; (4) physics.

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, statistics and physics. 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 advisor. The student should meet as soon as possible with their advisor 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 written 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.

## Physics (PHYS)

**Graduate Faculty**

*Professors:* Elizabeth C. Behrman, Jason Ferguson, Hussein Hamdeh, Nickolas Solomey

*Associate Professors:* Holger Meyer (director of physics), Syed M. Taher

*Assistant Professors:* Terrance Figy, Mathew Muether (physics graduate coordinator)

### Master of Science—Physics

Through its Master of Science (MS) degree program, the physics group in the department of mathematics, statistics and physics helps students prepare for doctoral work in physics or for STEM related jobs in research and industry.

The MS degree program is flexible allowing students to design their studies to meet their educational or career goals. Students may combine the study of physics with interest in such fields as astronomy, engineering, geology, computer science, mathematics and education.

#### *Admission Requirements*

Admission to the MS program in physics requires the completion of 24 credit hours of undergraduate physics, including 3 hours of mechanics and 3 hours of electricity and magnetism. Graduate School admission requirements must also be met.

#### *Degree requirements*

The MS degree in physics requires the successful completion of a plan of study approved by the student's advisor and the director of physics/department chairperson. Two options are available: a 36-hour nonthesis program, and a 30-hour program that includes a research project written as a thesis.

Students in either option must take at least 12 hours in courses numbered 800 or above. The department recommends that each plan of study include PHYS 821, Classical Mechanics; PHYS 831, Classical Electricity and Magnetism; PHYS 871, Statistical Mechanics; and PHYS 811,

Quantum Mechanics. A typical plan of study may consist of up to 12 hours of coursework taken outside the department.

### *Other Program Options*

Other program options are available which provide the possibility of combining the study of physics with interests in other fields such as astronomy, engineering, mathematics, geology, computer science, chemistry, biological sciences and education.

### *Examination*

During the first semester, students are given a diagnostic entrance examination. An oral defense of the thesis is required.

*Descriptions of physics courses begin on page 159.*

## Mathematics

### Courses for Graduate/Undergraduate Credit

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

**MATH 501. Elementary Mathematics (5).** 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 a grade point of 2.000 or better, or departmental consent.

**MATH 502. Mathematics for Middle School Teachers (5).** 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 point of 2.000 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 a grade point of 2.000 or better.

**MATH 513. Fundamental Concepts of Algebra (3).** Defines group, ring and field, and studies their properties. Prerequisites: MATH 415 and 511 with a grade point of 2.000 or better, or departmental consent.

**MATH 525. Elementary Topology (3).** Studies topological spaces, open and closed sets, bases for topology, continuous mappings, homeomorphisms, connectedness and compactness, Hausdorff and other spaces, with special emphasis on metric spaces. Prerequisite: MATH 415 with a grade point of 2.000 or better.

**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 a grade point of 2.000 or better.

**MATH 531. Introduction to the History of Mathematics (3).** 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 a grade point of 2.000 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's Theorem, and the Divergence Theorem. Also includes the study of improper integrals with application to special functions. Prerequisite: MATH 344 with a grade point of 2.000 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 a grade point of 2.000 or better in each.

**MATH 548. Introduction to Complex Variables (3).** Study of complex numbers, analytic functions, differentiation and integration of complex functions, line integrals, power series, residues and poles, and conformal mapping with applications. Prerequisites: MATH 344 with a grade point of 2.000 or better.

**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 a grade point of 2.000 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 a grade point of 2.000 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. Prerequisite: MATH 243 with a grade point of 2.000 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 a grade point of 2.000 or better, or departmental consent.

**MATH 621. Elementary Geometry (3).** Studies Euclidean geometry from an advanced point of view. Prerequisite: MATH 344 with a grade point of 2.000 or better, or departmental consent.

**MATH 640. Advanced Calculus II (3).** A continuation of MATH 547. Prerequisites: MATH 511 and 547 with a grade point of 2.000 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 large times. Prerequisite: MATH 555 with a grade point of 2.000 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 a grade point of 2.000 or better.

**MATH 713. Abstract Algebra I (3).** Treats the standard basic topics of abstract algebra. Prerequisite: MATH 513 with a grade point of 2.000 or better, or departmental consent.

**MATH 720. Modern Geometry (3).** Examines the fundamental concepts of geometry. Prerequisite: MATH 513 with a grade point of 2.000 or better, or departmental consent.

**MATH 725. Topology I (3).** Studies the results of point set and algebraic topology. Prerequisite: MATH 547 with a grade point of 2.000 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 a grade point of 2.000 or better, or departmental consent.

**MATH 745. Complex Analysis I (3).** Studies the theory of analytic functions. Prerequisite: MATH 640 with a grade point of 2.000 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, 551 with a grade point of 2.000 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 a grade point of 2.000 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 a grade point of 2.000 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 a grade point of 2.000 or better.

**MATH 758. Complex and Vector Analysis for Engineers (3).** A survey of some of the mathematical techniques needed in engineering including an introduction to vector analysis, line and surface integrals, and complex analysis, contour integrals and the method of residues. Not applicable toward a graduate degree in mathematics. Prerequisite: MATH 555 with a grade point of 2.000 or better.

### Courses for Graduate Students Only

**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 828. Selected Topics in Topology (2–3).** Repeatable with departmental consent. Prerequisite: departmental consent.

**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 851. Numerical Analysis of Ordinary Differential Equations (3).** Includes single-step and multi-step methods of ordinary differential equations, stability, consistency and convergence, error estimation, step size selection, stiff systems, and boundary value problems. Prerequisites: MATH 555, 751.

**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 856. Partial Differential Equations II (3).** A continuation of MATH 755. Prerequisite: MATH 755.

**MATH 857. Selected Topics in Engineering Mathematics (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 (1–5).** 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. Graded *S*/*U*. Prerequisite: departmental consent.

**MATH 941–942. Applied Functional Analysis I and II (3–3).** Introduces functional analysis and its applications. Prerequisites: MATH 843, 755 (MATH 755 may be a corequisite).

**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. Repeatable with departmental consent. Prerequisites: MATH 751, 851, and instructor's consent.

**MATH 958 & 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 6 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. Graded *S*/*U*. Prerequisite: must have passed the PhD preliminary exam.

## Physics (PHYS)

### 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 a physical science background for teachers. Repeatable for a maximum of 5 hours. Prerequisite: inservice or preservice 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; inservice or preservice teacher.

**PHYS 516. Advanced Physics Laboratory (2). 4L.** 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 physics research. Experiments cover the uses of transistors, op-amps, integrated 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 555. Modern Optics (3).** Geometrical and physical optics, coherence theory and Fourier optics. Additional topics may include radiation, scattering, optical properties of solids and optical data processing. Prerequisites: PHYS 214 or 314 and MATH 344.

**PHYS 595. Astrophysics (3).** Covers the formation, life and death of stars. Topics include: HR-diagrams, atomic and molecular spectra, radiative and convective transfer, the structure and spectra of stellar atmospheres, and stellar evolution. Prerequisite: PHYS 551.

**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 an introduction to the FORTRAN and C++ languages as used in physics. Corequisite: MATH 555.

**PHYS 621. Analytical Mechanics (3).** Motion of a particle or system of particles in one or several dimensions, central forces, rotating coordinate systems, the harmonic oscillator and the Lagrangian and Hamiltonian formulation of mechanics. Prerequisites: PHYS 214 or 314, and MATH 344 with grades of *C* or better.

**PHYS 623. Advanced Mechanics (3).** Continuation of PHYS 621. Covers dynamics of a system of coupled particles, fluid mechanics, systems with continuum distributions of mass, and theory of small oscillations all in a Lagrangian or Hamiltonian formulation. Prerequisite: PHYS 621, or MATH 553 or 555, or instructor's consent.

**PHYS 631. Electricity and Magnetism (3).** Electric and magnetic field theory, direct and alternating currents and Maxwell's electromagnetic wave theory. Prerequisites: PHYS 214 or 314, and MATH 344 with grades of *C* or better.

**PHYS 641. Thermophysics (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 Schrodinger 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 is included. Corequisite: PHYS 651.

**PHYS 675. Nuclear and Particle Physics (3).** Theories of nuclear and particle physics, including experimental techniques and important features of current data. Summary of mesons, baryons and leptons, and their electromagnetic, strong and weak nuclear force interactions. Phenomenological descriptions of nuclear and high-energy scattering and particle production leading to the quark theory of matter and other new exotic particles. Prerequisite: PHYS 551.

**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.

**PHYS 714. Theoretical Physics (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.

**PHYS 730. Principles of Computer Modeling (2) 1R; 2L.** Essential elements, principles and strategies of forward and inverse numerical computer modeling. Formulation of a qualitative problem (parametrization), model design, implementation, and interpretation of model results. Working knowledge of computational techniques with examples in physics, geology, chemistry and environmental sciences. Prerequisites: PHYS 616 or EEPS 701, plus knowledge of a programming language or numerical or symbolic mathematics package, or instructor's consent.

**PHYS 761. Environmental Physics (3).** Covers the application of physics to the environment, including the production and use of energy, the transport of pollutants, and the study of noise. Topics include basic thermodynamics with applications to fossil fuels, hydroelectric, wind, geothermal and solar energies, plus effects on global warming, pollution and climate. Prerequisites: PHYS 313–314 and MATH 242, or EEPS 721, or instructor's consent.

**PHYS 795. Earth and Space Physics (3).** Cross-listed as GEOL 795. An introduction to the geosciences and astrophysics of the solar system. Topics include the surface, interior and atmospheres of the planets with a comparative planetology approach, and the sun-planet system including solar physics and the effect of the sun on the earth's environment and geologic history. Prerequisites: PHYS 313–314, and MATH 242, or EEPS 721, or instructor's consent.

### 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 Schrodinger 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, 651 or departmental consent and MATH 555.

**PHYS 812. Advanced Quantum Mechanics (3).** Applications of quantum mechanics. Topics which may be included are the WKB approximation, scattering, N-body problem, second quantization and relativistic quantum mechanics. Prerequisite: PHYS 811.

**PHYS 816. Methods in Experimental Physics (2).** Experiments in modern physics and experimental methods are covered stressing the development of experimental techniques and how to analyze data statistically and mathematically from these experiments. Prerequisites: PHYS 516, 517, or their equivalents.

**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, 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, 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, PHYS 621.

**PHYS 876. Elementary Particles and Fields (3).** A survey of nuclear, elementary particle and astro-particle physics topics in the mathematical framework of the Standard Model and its experimental verification. Students may benefit from taking PHYS 816 prior to this course, but it is not required. Prerequisite: PHYS 811 or departmental consent.

**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: MATH 555, PHYS 651, 681, or departmental consent.

**PHYS 895. Advanced Astrophysics (3).** Covers topics in astrophysics in relation to stellar structure, atmospheres and stellar evolution. Advanced topics in galactic dynamics, formation and cosmology may be included. Prerequisite: PHYS 595 or instructor's consent.

**PHYS 983. Advanced Independent Study in Physics (1–3).** Arranged individual directed study in an area of physics. Repeatable for credit with departmental consent. Prerequisite: instructor's consent.

**PHYS 987. PhD Dissertation (1–9).** Repeatable to a maximum of 24 hours. Graded *S/U*. Prerequisite: must have passed the PhD preliminary exam in physics.

## 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).** 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. Prerequisite: MATH 243 with a grade point of 2.000 or better, or departmental consent.

**STAT 574. Elementary Survey Sampling (3).** Reviews basic statistical concepts. Covers simple, random, stratified, cluster and systematic sampling, along with a selection of sample size, ratio, estimation and costs. Applications studied include problems from social and natural sciences, business and other disciplines. Prerequisite: any elementary course in statistics, such as STAT 370, SOC 501 or PSY 301 with a grade point of 2.000 or better.

**STAT 576. Applied Nonparametric Statistical Methods (3).** 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 301 with a grade point of 2.000 or better.

**STAT 701. Matrix Theory (3).** Studies matrix theory as a tool for studying linear models, analysis of variance, regression analysis, time series, and multivariate analysis. Topics include Eigenvalues and Eigenvectors, matrix factorization and matrix norms, generalized inverses, partitioned matrices, Kronecker product, vec operator, and matrix derivatives, with applications to statistics in each topic and special emphasis on quadratic forms in normal variates. Although some background in statistics is desirable, it is not necessary. Prerequisite: MATH 511 with a grade point of 2.000 or better.

**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, MATH 344 and 511 with a grade point of 2.000 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, MATH 344 and 511 with a grade point of 2.000 or better in each, or departmental consent.

**STAT 771–772. Theory of Statistics I and II (3–3).** An examination of stochastic dependence distributions of functions of random variables limiting distributions, order statistics, theory of statistical inference, nonparametric tests, and analysis of variance and covariance. Prerequisite: MATH 545 or 547 with a grade point of 2.000 or better, or departmental consent.

**STAT 774. Statistical Computing I (3).** Trains students to use modern statistical software for statistical modeling and writing of technical reports. Examines many of the advanced features of most commercial statistical packages. Students perform complete statistical analyses of real data sets. Prerequisites: STAT 763 and 764, or departmental consent.

**STAT 775. Applied Statistical Methods I (3).** Covers selected topics from time series analysis including basic characteristics of time series, autocorrelation, stationarity, spectral analysis, linear filtering, ARIMA models, Box-Jenkins forecasting and model identification, classification, and pattern recognition. Prerequisite: STAT 763 with a grade point of 2.000 or better, or departmental consent.

**STAT 776. Applied Statistical Methods II (3).** Covers selected topics from multivariate analysis including statistical theory associated with the multivariate normal, Wishart and other related distributions, partial and multiple correlation, principal component analysis, factor analysis, classification and discriminant analysis, cluster analysis, James-Stein estimates, multivariate probability inequalities, majorization and Schur functions. Prerequisite: STAT 764 with a grade point of 2.000 or better, or departmental consent.

### Courses for Graduate Students Only

**STAT 861–862. Theory of Probability I and II (3–3).** The axiomatic foundations of probability theory emphasize the coverage of probability measures, distribution functions, characteristic functions, random variables, modes of convergence, the law of large numbers and central limit theorem, and conditioning and the Markov property. Prerequisites: MATH 743, STAT 771.

**STAT 870–871. Theory of Statistical Inference I and II (3–3).** Covers asymptotic theory of maximum likelihood estimation, sufficiency and completeness, unbiased estimation, elements of decision theory and the Neyman-Pearson theory of testing hypotheses. Prerequisites: MATH 743, STAT 771.

**STAT 872–873. Theory of Linear Models I and II (3–3).** An introduction to the theory of linear models and analysis of variance. Includes multivariate normal distribution, distributions of quadratic forms, general linear models, general linear hypothesis, confidence regions, prediction and tolerance intervals, design models (1-factor and 2-factor), analysis of covariance and components-of-variance models. Prerequisites: MATH 511, STAT 772.

**STAT 875. Design of Experiments (3).** A study of basic concepts of experimental design which include completely randomized design, randomized block design, randomization theory, 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 876. Nonparametric Methods (3).** An introduction to the theory of nonparametric statistics. Includes order statistics, tests based on runs, 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 877. Multivariate Statistical Methods (3).** Elementary theory and techniques of analyzing multidimensional data; covers Hotelling's T2, multivariance analysis of variance, principal components analysis, linear discrimination analysis, canonical correlation analysis, and analysis of categorical data. Prerequisites: MATH 511, STAT 772.

**STAT 878. Special Topics (2–3).** Repeatable with departmental consent. Prerequisite: departmental consent.

**STAT 879. Individual Reading (1–5).** Repeatable to a maximum of 6 hours with departmental consent. Prerequisite: departmental consent.

**STAT 971 & 972. Selected Advanced Topics in Probability and Statistics (3 & 3).** Topics of current research interest in probability and statistics. Repeatable for credit with departmental consent. Prerequisite: instructor's consent.

**STAT 978. Advanced Independent Study in Probability and Statistics (1–3).** Arranged individual directed study in an area of probability or statistics. Repeatable to a maximum of 6 hours. Prerequisites: must have passed the PhD qualifying exam and instructor's consent.

**STAT 986. PhD Dissertation (1–9).** Repeatable to a maximum of 24 hours. Graded *S/U*. Prerequisite: must have passed the PhD preliminary exam.

# Modern and Classical Languages and Literatures

**Graduate Faculty**

*Professor*: Wilson Baldridge (chairperson)

*Associate Professors:* Brigitte Roussel, Kerry Wilks (associate dean, Graduate School)

*Assistant Professors:* Rocio del Aguila, Francisco Flores-Cuautle, Jose Navarro Serrano, Rachel Showstack

## French (FREN)

Although a complete graduate program is not currently available 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.*

**FREN 501. French for Business (3).** Designed for French speakers at the intermediate level seeking to communicate accurately in professional situations and especially for those pursuing parallel studies in business or management. Prerequisite: FREN 324 or departmental consent.

**FREN 505. Advanced French Phonetics (3). 2R; 2L.** Cross-listed as LING 505A. Includes articulatory phonetics, phonemics, sound/symbol correspondences, dialectal and stylistic variations. Required for future French teachers. Prerequisite: any 200-level course or departmental consent.

**FREN 515. Major Topics in French (1–4).** Special studies in (A) language, (B) literature, (C) commercial French, (D) the language laboratory, (F) composition, (J) civilization, (K) conversation, (L) translation, and (M) phonetics. Repeatable for credit. Prerequisite: departmental consent.

**FREN 520. Novel and Film (3).** Analysis and discussion of celebrated French novels together with major film versions of the same. The status of the image in relation to the works' historical and cultural contexts is the focus. Prerequisite: FREN 300.

**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).** 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 Translation (3).** A study of the concept of Negritude through the works of major 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. Pre- or 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. Pre- or corequisite: FREN 300.

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

**FREN 629. Medieval French Literature (3).** Analysis and discussion of major French works from 900 to 1500, the literary movements to which they pertain, and the place of individual authors in the overall tradition. Prerequisite: FREN 300.

**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. Provides a contrastive examination of the phonology, morphology and syntax of the major contemporary Romance languages (French, Spanish, Italian, Portuguese, Catalan and Romanian). Introduces students to the sound and writing system and basic grammar of Latin, and contrasts the phonological and grammatical systems of the contemporary Romance languages (French and Spanish in particular) with those of Latin. It compares specific features of the modern Romance languages synchronically (i.e., apart from Latin) as well. Students are advised to have a solid grounding in at least one Romance language (preferably French or Spanish) and a familiarity with at least one other (French, Spanish, Latin, Italian or Portuguese). Prerequisite: departmental or instructor's 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.

**Courses 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 currently available 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 505. German Phonology (2).** Course deals with corrective pronunciation (articulation of German speech sounds and intonation) as well as formal phonetic analysis. Teaches students the International Phonetic Alphabet in order to improve their use of German dictionaries and possible comparison of German dialects. Prerequisites: GERM 224, 225, or instructor's consent.

**GERM 526. Advanced German Grammar and Composition (3).** Continues the advanced grammar review begun in GERM 300 and focuses on developing German writing skills, including the ability to express oneself with grammatical accuracy and stylistically appropriate vocabulary. Prerequisite: GERM 300 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 300 or instructor's consent.

## Greek (Ancient Classical) (GREK)

Although a complete graduate program is not currently available 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 531. Advanced Greek (3).** Sophocles and Euripides. Prerequisite: GREK 224.

**GREK 532. Advanced Greek (3).** Thucydides. Prerequisite: GREK 531.

## Latin (LATN)

Although a complete graduate program is not currently available 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 525. Medieval Latin (3).** Introduction to medieval Latin language and culture. Samples the range of Latin literature from the fifth to the 12th centuries through readings of religious and secular (including philosophical, political, historical and linguistic) texts in prose as well as the Latin poetry and drama of various medieval writers. Prerequisite: LATN 224 or departmental consent.

**LATN 526. Advanced Grammar and Composition (3).** Intensive study of the grammar and style of classical Latin prose of the Golden Age, especially of Cicero and Caesar. Required capstone course for the MCLL major with specialization in Latin.

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

**LATN 542. Virgil'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 651. Roman Historians (3).** A study of the development of Roman historiography. Readings from Sallust, Caesar, Livy and Tacitus.

**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)

**Courses for Graduate/Undergraduate Credit**

**MCLL 651. 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.

**MCLL 790Q. Special Topics in Music and Foreign Language (1–5).** Cross-listed as MUSP 790Q (College of Fine Arts). Allows undergraduate and graduate students to take courses in the modern foreign languages together with individualized instruction in the translation and diction of poetical texts set to music. Course may be used to satisfy the foreign language requirement of the Bachelor of Music in performance—vocal emphasis. Repeatable for credit. Prerequisite: departmental consent.

## Russian (RUSS)

Although a complete graduate program is not currently available 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 505B. 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 konstruktsii). 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).** Survey course in representative Russian literature (prose) of the 19th century, of the Soviet (socialist realism) or post-Soviet period, or of a particular author. The survey of 19th century Russian literature typically includes major prose works of Pushkin, Lermontov, Gogol, Goncharov, Turgenev, minor prose works of Tolstoy and Dostoevsky, and the more popular plays of Chekhov. Emphasis on Russian and European history, historiography and intellectual movements, as well as fundamental concepts of general literary analysis and criticism. No knowledge of Russian is required, although some is desirable. 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.

#### *Admission Requirements*

Admission to the Master of Arts program requires a 3.000 GPA in Spanish. Non-native speakers must have completed 24 hours of undergraduate Spanish beyond the basic language courses (for example, WSU classes SPAN 111, 112 and 210); 8 of these 24 hours should be at the junior-senior level (WSU classes 300 and above). 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 credit 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.

A maximum of 9 hours of related fields may be included in the plan of study. The minimum of 23 hours of Spanish (and maximum of 32 hours of Spanish on the plan of study), must include SPAN 526 and three of the following survey courses: SPAN 833, 834, 835, 836, 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; English, American and foreign literatures; art, 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 comprehensive examinations based on two reading lists—Latin American literature and peninsular (Spain) literature—and an oral examination on an area of specialization of the student's choosing. That reading list will be developed in consultation with faculty. No exam may be taken more than twice.

### 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.*

**SPAN 505. Spanish Phonetics (3).** Cross-listed as LING 505C. Includes articulatory phonetics, phonemics, sound/symbol correspondences, dialectal 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, (F) composition, (I) problems in teaching Spanish, (J) advanced conversation. Repeatable for credit. Prerequisite: departmental consent.

**SPAN 520. Literature in Film (3).** Spanish or Latin American literature and its representation in film. Repeatable for credit. Prerequisite: SPAN 300.

**SPAN 525. Advanced Spanish Conversation (3).** Provides students the opportunity to further develop aural and oral proficiency through listening, vocabulary building, culturally appropriate communication strategies, skits, presentations and pronunciation practice in an immersion environment. Prerequisite: SPAN 325 or departmental consent.

**SPAN 526. Advanced Spanish Grammar and Composition (3).** Prerequisite: SPAN 220 or 221 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.

**SPAN 532. Survey of Spanish Literature (3).** Spanish literature from the beginning to 1700. Prerequisite: SPAN 300 or departmental consent.

**SPAN 534. Contemporary Spanish Theater (3).** Prerequisite: SPAN 300 or departmental consent.

**SPAN 536. Contemporary Spanish Novel (3).** Prerequisite: SPAN 300 or departmental consent.

**SPAN 540. Contemporary Spanish Literature in English Translation (3).** Content may vary from semester to semester, including Spanish and/or Latin-American literature. No knowledge of a foreign language is necessary. May be used to satisfy the general education literature requirement and may count toward a Spanish major or minor if readings and papers are done in Spanish and prerequisite of SPAN 300 is met. Repeatable for credit.

**SPAN 546. Spanish Language Learning (3).** Introduction to language learning from an applied linguistics perspective: the processes of first and second language acquisition, elements of Spanish grammar that are often difficult for English speakers, and social aspects of language learning. Appropriate for advanced undergraduate students and graduate students. Taught in Spanish. Prerequisite: SPAN 526.

**SPAN 547. Spanish in the U.S. (3).** Exploration of the structural and social aspects of Spanish in the United States. Examines the history and social context of the use of Spanish in the U.S. as well as dialectical and contact phenomena in U.S. Spanish. Also covers Spanish in education, in the media and in other aspects of public life in the U.S. Appropriate for advanced undergraduate students and graduate students. Taught in Spanish. *Course includes diversity content.* Prerequisite: SPAN 526 or departmental consent.

**SPAN 552. Business Spanish (3).** Provides the opportunity to learn and practice commercial correspondence, business vocabulary, translation and interpretation of business texts. Prerequisite: SPAN 526.

**SPAN 557. Principles of Translation and Interpreting (3).** For students wishing to learn skills and techniques of translation and interpreting in addition to developing vocabulary in different domains of professional Spanish. Course combines readings, discussions and applied practice/hands-on activities. Prerequisite with concurrency: SPAN 526 or departmental consent.

**SPAN 558. Advanced Translation and Interpreting (3).** Further study of translation and interpreting of different types of texts for the professional world. Prerequisites: SPAN 526, 557; or departmental consent.

**SPAN 620. Survey of Latin-American Literature (3).** Survey of Latin-American literature from pre-Columbian times through the building of new nations, and to the rise of Modernismo at the turn of the 20th century. Prerequisite: SPAN 300 or departmental consent.

**SPAN 621. Survey of Contemporary Latin-American Literature (3).** Provides students with a chronological and thematic approach to the main currents of Latin-American literature in the 20th and 21st centuries. Provides a critical presentation of major realist, naturalist, avant-garde, boom and postboom authors. Prerequisite: SPAN 300 or departmental consent.

**SPAN 622. Special Studies in Spanish (1–4).** Topic for study chosen with aid of instructor. Repeatable for credit. Prerequisite: instructor's consent.

**SPAN 623. Seminar in Spanish (1–5).** Seminar in Spanish literature, language or civilization. Repeatable for credit. Prerequisite: SPAN 300.

**SPAN 624. Seminar in Latin-American Literature or Culture (3).** May focus on a literary genre, historic or artistic period, main historic figure or author, region or topic, including transnational or transatlantic phenomena. Repeatable for credit. Prerequisite: SPAN 300 or departmental consent.

**SPAN 625. Contemporary Latin-American Novel (3).** Prerequisite: SPAN 300 or departmental consent.

**SPAN 626. Spanish Civilization (3).** Intensive study of Spanish culture, including historical and geographical factors in its development and its contributions to world civilization. Pre- or corequisite: SPAN 300 or departmental consent.

**SPAN 627. Latin-American Civilization (3).** Intensive study of Latin-American culture, including the historical and geographical factors of its development and its contributions to world civilization. Pre- or corequisite: SPAN 300 or departmental consent.

**SPAN 631. Latin-American Short Story (3).** Study of the main writers in contemporary Latin-American literature. Prerequisite: SPAN 300 or departmental consent.

**SPAN 635. Introduction to Romance Linguistics (3).** Cross-listed as FREN 635 and LING 635. Provides a contrastive examination of the phonology, morphology and syntax of the major contemporary Romance languages (French, Spanish, Italian, Portuguese, Catalan and Romanian). Introduces students to the sound and writing system and basic grammar of Latin, and contrasts the phonological and grammatical systems of the contemporary Romance languages (French and Spanish in particular) with those of Latin. It compares specific features of the modern Romance languages synchronically (i.e., apart from Latin) as well. Students are advised to have a solid grounding in at least one Romance language (preferably French or Spanish) and a familiarity with at least one other (French, Spanish, Latin, Italian or Portuguese). Prerequisite: departmental or instructor's consent.

**SPAN 640. Mexico: Its People and Culture (3).** Study of the cultural development of Mexico, exploring the legacy of ancient cultures and the Spanish encounter in areas such as literature, the arts, music and film industry. Prerequisite: SPAN 300 or departmental consent.

**SPAN 650. South America: Its People and Cultures (3).** Study of the cultural development of South America, exploring the legacy of Indian cultures and the Spanish encounter in areas such as literature, the arts, music and the film industry. Prerequisite: SPAN 300 or departmental consent.

**SPAN 726. Spanish Grammar and Stylistics (3).** Intensive study of advanced grammar and stylistic usage. Prerequisite: SPAN 526.

**SPAN 750. Workshop in Spanish (2–4).** Repeatable for credit.

### Courses for Graduate Students Only

**SPAN 801. Spanish Linguistics (3).** Historical and structural study of the Spanish language.

**SPAN 805. Directed Readings in Spanish (1–4).** Readings vary according to the student's preparation. Includes preparation of reports, literary critiques and special projects in linguistics.

**SPAN 827. Latin American Civilization and Culture (3).** Introduction to historical and cultural development in Latin America, exploring the legacy of the Spanish encounter/conquest. Emphasizes Spanish colonization. Prerequisite: graduate standing.

**SPAN 831. Seminar in Spanish Literature (3).** (A) Middle Ages, (B) Renaissance, (C) Golden Age theater, (D) Cervantes, (E) modern novel, (F) Generation of '98, (I) Romanticism, (J) 20th century poetry, (K) criticism, (L) literature, (M) 20th century theatre, (N) contemporary Spanish novel, (O) picaresque novel, and (P) Spanish short story.

**SPAN 832. Seminar in Latin-American Literature (3).** (A) Colonial period, (B) contemporary novel, (C) short story, (D) poetry, (E) modernism, (F) essay, (I) theater, (K) Latin American literature, and (L) Latin American novel and film.

**SPAN 833. Survey of Spanish Literature I (to 1700) (3).** Survey of medieval and early modern Spanish literature. Topics include major authors, works and literary

movements of the periods. Consists of analysis of short stories, poems, plays and other genres.

**SPAN 834. Survey of Spanish Literature II (18th to 21st Centuries) (3).** Overview of modern Spanish literary history. Topics covered include major authors, works and literary movements of modern Spanish literature (1700 to the present). The course consists of critical analysis of short stories, poems, plays, essays and excerpts from novels. Prerequisite: graduate standing.

**SPAN 835. Survey of Latin-American Literature (15th–19th Centuries) (3).** Survey of Latin-American literature from its indigenous origins, through the colonial period, to the end of the independence campaigns. Consists of the close analysis of chronicles, short stories, poetry and other texts. Emphasis is placed on the relationship between ideology, nation building and literature. Prerequisite: graduate standing.

**SPAN 836. Survey of Latin-American Literature (20th–21st Centuries (3).** In-depth overview of the cultural and commercial processes which gave way to the internationalization of Latin-American literature in the 20th century. Emphasis on how Latin-American literature became an object of interest in the U.S. and Europe in the 1960s and 1970s. It also examines the space some Spanish-American authors occupy currently in the world literary market. Prerequisite: graduate standing.

**SPAN 851. Advanced Topics in Spanish Culture and Civilization (3).** Covers major events and sociopolitical movements in Spain from prehistoric times to present-day Spain. Through history, students examine the different cultures within Spain (Castilian, Catalan, Basque and Galician), focusing on language, nationality and political implications. Students explore major artists in all media including visual arts, music and literature, while also considering folkloric customs and traditions of the various regions (i.e. Culture and culture).

# Philosophy (PHIL)

**Graduate Faculty**

*Professors*: David Soles, Deborah H. Soles, Robert Feleppa
*Associate Professor:* Jeffrey Hershfield
*Assistant Professor:* Susan Castro

Although there is no graduate degree in philosophy, the following courses are available for graduate credit.

### Courses for Graduate/Undergraduate Credit

**PHIL 501. Philosophy of Language (3).** Examines the relationships between philosophy and language. Focuses on questions such as: What is the relation between language and thought? Language and the world? What can the study of language contribute to the resolution of philosophical problems? Prerequisite: one 300-level or higher course in philosophy.

**PHIL 510. Philosophy of History (3).** A philosophical examination of the meta-level issues that arise in the discipline and practice of history. Issues investigated include: What is history? What is the proper form of explanation in history? How are causal claims in history to be understood? Is it possible to achieve objectivity in historical explanations? What criteria should be employed in evaluating historical explanations? What are the moral obligations which should guide historical research and presentation? Prerequisite: instructor's consent.

**PHIL 525. Evidential Reasoning (3).** Explores philosophical issues related to reasoning about evidence. Topics may include: induction, confirmation, falsification, the under-determination of theories by evidence, theories of probability, and scientific method. Examines some case studies of reasoning about evidence in, for example, poker, medicine, risk analysis, forensic sciences and the law.

**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 relation of social sciences with natural sciences and philosophy, methodological problems peculiar to social sciences, the nature of sound explanation concepts and constructs, and the roles of mathematics and formal theories in social sciences.

**PHIL 565. Topics in Asian Philosophy (3).** An in-depth examination of selected topics in Asian philosophy. The topics covered in any particular semester vary. Representative topics include movements such as Confucianism, Taoism or Buddhism. Prerequisite: one philosophy course.

**PHIL 577. Philosophy of the Arts (3).** Intensively examines one or more fundamental problems or themes in the philosophy of art or in the special aesthetics of painting, music, sculpture, literature, drama, movies and so forth. Includes the problem of tragedy, the character of the aesthetic attitude, the function of the arts, the legitimacy of general art theory, the presuppositions of specialized art theory, the creative act, art and truth, art and life, and the nature and function of art criticism.

**PHIL 585. Studies in a Major Philosopher (3).** A concentrated study of the thought of one major philosopher announced by the instructor when the course is scheduled. Repeatable for credit. Prerequisite: instructor's consent.

**PHIL 590. Special Studies (3).** Topic for study announced by instructor. Repeatable for credit. Prerequisite: instructor's consent.

**PHIL 699. 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 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.

# Political Science (POLS)

**Graduate Faculty**

*Professor:* Carolyn Shaw (chairperson)
*Associate Professors:* Dinorah Azpuru, Michael Hall

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 524. Politics of Modern China (3).** 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 570. International Political Economy (3).** Cross-listed as ECON 570. Examination of policy decisions regarding exchanges of trade, money and labor that span national boundaries. Studies the interaction of politics and economics at the international level, as well as the modern history of the global economy. Economics often studies the material benefits and costs of different policies. Political science asks why these policies exist in the first place with a focus on who gets the benefits, who pays the costs, and how decisions about allocating benefits and costs are made. *Course includes diversity content.*

**POLS 580. Administration and the Policy-Making Process (3).** The problems of government encountered in the administration of public policy. Analytical approach rather than descriptive. Repeatable for credit.

**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, so students can integrate their prior learning experiences within the discipline. For undergraduate students only. Prerequisites: POLS 365, senior status, 18 hours of POLS courses.

**POLS 700. Advanced Directed Readings (3).** Repeatable for credit. Graded *S/U*. 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. Public and Nonprofit Financial Management (3).** Cross-listed as PADM 865. Introduction to state local government financial administration. Topics include: government accounting systems, budgeting, government financial statement and financial condition analysis, internal financial control systems, debt management and policy, and government cash management and pension investment management systems. 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).** 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 or her own department. *S/U* grade only. Prerequisite: departmental consent.

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

**POLS 876. Thesis (1–3).**

# Psychology (PSY)

### Graduate Faculty

*Professors*: Charles A. Burdsal, Jr., Alex Chaparro, Peter A. Cohen, Darwin Dorr, Steven Huprich (clinical coordinator), Rhonda K. Lewis (chairperson), Gregory J. Meissen (community coordinator), Louis J. Medvene, Robert D. Zettle (graduate coordinator)

*Associate Professors:* Barbara Chaparro (human factors coordinator), Donald W. Nance, Rui Ni

*Assistant Professors:* Paul D. Ackerman (assistant chairman), Brendan Clark, Jibo He, Joseph Keebler, Joel Suss

## 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 and experimental psychology.

***Deadlines.*** Application for admission should be filed with the dean of the Graduate School and the psychology department by December 1 for the clinical psychology program and January 15 for the community and human factors programs, 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: three 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).

Applicants 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. Must be completed with a B (3.000 or better).*

*Methods Courses*

| | |
|---|---|
| PSY 902 | Advanced Research Methods I |
| PSY 903 | Advanced Research Methods II |

*Teaching and Ethics*

| | |
|---|---|
| PSY 911 | Teaching of Psych: Principles, Practices & Ethics (3 hrs. total) |

(Note: a grade of B (3.000) or better must be earned in each of the methods courses. Students may retake these courses once. Failure to meet this requirement may lead to dismissal from the program.)

***Second Year Project.*** All students must complete a predoctoral research program resulting in a document similar to a manuscript ready for journal submission. The student must enroll in PSY 901 each semester (excluding summers) until the project is completed.

***Post Second Year Project Research.*** After completion of the second year project requirement, all students will enroll in PSY 909 each semester until the successful completion of qualifying exams.

Community and Clinical students must have completed a minimum of 10 hours of PSY 901 and/or PSY 909. Human factors students must complete a minimum of 18 hours of PSY 901 and/or 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 PhD are required to complete a dissertation. The dissertation ordinarily is a major research project. A formal written proposal must be approved by the student's dissertation committee prior to beginning the project. A student must be enrolled in PSY 908 (Doctoral Dissertation) any time a student is working on his or 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 (Must be completed with a B (3.000) or better)*

*Foundation Courses*

| | |
|---|---|
| PSY 904 | Biological and Philosophical Foundations of Psychology |
| PSY 905 | Cognitive/Learning Foundations of Behavior |

*Program Courses*

| | |
|---|---|
| PSY 920 | Psychological Principles of Human Factors |
| PSY 921 | Seminar in Human Factors |
| PSY 922 | Seminar in Software Psychology |
| PSY 925 | Seminar in Perception |

*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 (1) satisfactorily completing a college-level calculus course; (2) demonstrating proficiency on an exam; or (3) providing other evidence of such skills.

*Internship.* Students must complete a three month research internship (1 credit hour). It is the student's responsibility to develop his or her internship setting.

### *Community*

*Required Courses (Must be completed with a B (3.000) or better)*

*Foundation Courses*

| | |
|---|---|
| PSY 907 | Social and Developmental Foundations of Behavior |
| PSY 912 | Seminar in Cultural Diversity |

*Two of the Following Three*

| | |
|---|---|
| PSY 904 | Biological and Philosophical Foundations of Psychology |
| PSY 905 | Cognitive/Learning Foundations of Behavior |
| PSY 906 | Assessment of Personality and Individual Differences |

*Program 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 948 | Seminar in Community Leadership |
| PSY 949 | Seminar in Community Advocacy and Social Policy |

*Practicum.* Community students are required to take a minimum of 9 hours of Practicum in Community Psychology, PSY 944.

*Electives.* Sufficient electives to total 90 hours. Two of the electives must be statistics and/or research methods courses as approved by the advisor.

### *Clinical*

In addition to courses required for all psychology tracks, the following are the required clinical courses:

*Required Courses (Must be completed with a B (3.000) or better)*

*Foundation Courses*

| | |
|---|---|
| PSY 904 | Biological and Philosophical Foundations of Psychology |
| PSY 905 | Cognitive/Learning Foundations of Behavior |
| PSY 907 | Social and Developmental Foundations of Behavior |

*Program Courses*

| | |
|---|---|
| PSY 912 | Seminar in Cultural Diversity |
| 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-Behavioral Therapy Lab |
| PSY 975 | Seminar in Psychotherapy |
| PSY 979 | Seminar in Personality Assessment |
| PSY 976 | Advanced Psychopathology |

PSY 977, Internship in Clinical Psychology (3 hrs.). A one year (2000 hour) clinical internship (APA or APPIC approved) is required. To apply for a clinical internship, students must have completed all required courses, qualifying examinations, and be *internship ready* as defined by APPIC.

*Community Required Courses*

*Two of the Following Required..... (6 hrs.)*

| | |
|---|---|
| PSY 941 | Applied Research Methods in Community Settings |
| PSY 942 | Seminar in Community and Organizational Intervention |
| PSY 943 | Seminar in Prevention |

(*Note*: If PSY 941 or PSY 943 is used here it cannot be used to satisfy the clinical elective requirements below.)

*Practicum Requirements .....(12 hrs.)*

| | |
|---|---|
| PSY 963 | Practicum in Clinical Psychology (minimum of 9 hrs.) |
| PSY 944 | Practicum in Community Psychology (3 hrs.) |

*Clinical Elective Courses*

In addition to the core clinical courses, students must take at least 9 credit hours of clinical elective courses. Three (3) of these hours must be in assessment courses and 6 hours must be in intervention courses. Elective course choice depends on the student's unique professional goals, and is made in consultation with the student's faculty advisor. Students must take sufficient electives to total 101 credit hours.

## 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 program.

### Courses for Graduate/Undergraduate Credit

**PSY 506. Psychology of Helping Relationships (3).** Cross-listed as NURS 567 and SOC 506. Introduces students to a psychological perspective on helping relationships that is useful in both practice and research. Topics covered include the definition of relationship, and identification of the ways in which the roles of helper and help seeker can be structured to maximize effectiveness: e.g., power, distance, similarity and reciprocity. Relationships of interest include: counseling and psychotherapy, nursing and doctoring, family caregiving, mentoring, self-help, mutual aid, and volunteering. The emerging topic of "relationship-centered care models" in the education of health care professionals is discussed. Prerequisite: 6 hours in psychology including PSY 111 or instructor's consent.

**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 514. Psychology of Health and Illness (3).** A survey of the relationships between psychology/behavior and physical health and illness. Includes stress and coping, health habits, symptom perception, health care provider-client relationships, hospitalization and prevention. May include a self-study of lifestyle and behavior in relation to health and illness. Prerequisite: PSY 111.

**PSY 516. Drugs and Human Behavior (3).** 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. Details social-cultural, personal, and situational determinants and consequences of drug use and abuse. Prerequisite: PSY 111.

**PSY 534. Psychology of Women (3).** Cross-listed as WOMS 534. Psychological assumptions, research and theories of the roles, behavior and potential of women in contemporary society. *Course includes diversity content.* 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. *Course includes diversity content.* Prerequisites: PSY 111 and instructor's consent.

**PSY 544. Abnormal Psychology (3).** An introductory survey of abnormalities of behavior. Examines definitions, causes, types and classifications of abnormal behavior. Covers various theories of abnormality, research evidence and various methods of diagnosis and treatment. Presents hypotheses regarding prevention of abnormality. Prerequisite: PSY 324.

**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 psychophysiological 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 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 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.

**PSY 568. Computer Applications to the Behavioral Sciences (3).** Introduction to state of the art programming environments designed for psychological research. Students learn how to perform basic statistical analyses, program visual and auditory experiments, and analyze data. Applications include such areas as mathematical modeling and creating experiments. Previous programming experience is encouraged, but not required. Repeatable for different topics. Prerequisite: 9 hours in the social sciences.

**PSY 608. Special Investigation (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 727. Selected Topics in Human Factors Psychology (3).** Introduction to one of several special topics in the area of human factors. Students review relevant literature and learn theory and application of specific methodologies in a variety of work

environments. Repeatable. Graded *S/U*. Prerequisite: 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.

**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 included 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, instructor's consent.

**PSY 904. Biological and Philosophical Foundations of Psychology (3).** Develops the idea that psychology is a biosocial science. 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. 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).** Repeatable for credit. Graded *S/U*. Prerequisite: admission to candidacy and instructor's consent.

**PSY 909. Preproposal Research (1-3).** A research course for students who have completed the second 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 911. Teaching of Psychology: Principles, Practices and Ethics (3, 2 or 1).** Prepares doctoral students in psychology to assume undergraduate teaching duties. Presents basic pedagogical tools as well as university and departmental policies and procedures. Students learn about opportunities to incorporate technology in the classroom and have several occasions to observe and practice teaching. Introduces students to important ethical issues that confront teachers of psychology and provides strategies for handling ethical dilemmas. Psychology graduate students are required to complete 3 credit hours of this course or have equivalent experience before teaching. Partially fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Graded *S/U*.

**PSY 912. Seminar in Cultural Diversity (3).** Examines theoretical frameworks and develops culturally appropriate strategies in therapy and prevention efforts in the community. Emphasizes understanding the importance of culture and how it may impact treatment and prevention outcomes. Focuses on developing skills to work effectively with diverse populations. Prerequisite: instructor's consent.

**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 405 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) applied 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 925. Seminar in Perception (3).** Intensive study in theory and research in perceptual processes. Prerequisites: PSY 409, 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/contextual 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 (3).** Focuses on the development and/or change of community-based programs and organizations and the implementation and funding of community-based programs. Explores the 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

and education. Services may be prevention-oriented. Repeatable for credit. Graded *S/U*. Prerequisite: instructor's consent.

**PSY 948. Seminar in Community Leadership (3).** Seminar explores contemporary principles of community leadership from a community psychology framework. In an interactive and applied learning format, this seminar focuses on relevant theory, research, best practices and experiential knowledge regarding community leadership to gain understanding of key concepts and practices of leadership, develop individual leadership skills based on personal strengths, be introduced to the breadth of opportunity for civic and community engagement, and gain leadership skills to become more effective in improving community and civic life. Prerequisite: instructor's consent.

**PSY 949. Seminar in Community Advocacy and Social Policy (3).** Seminar explores contemporary principles of community advocacy and social policy from a community psychology framework. In an interactive and applied learning format, this seminar focuses on relevant theory, research, best practices and experiential knowledge regarding community advocacy and social policy to gain an understanding of key concepts and practices of grassroots advocacy and the development and implementation of social policy. Opportunities for civic and community engagement to gain skills for a more effective community are provided. Prerequisite: instructor's consent.

**PSY 960. Ethical and Professional Issues in Clinical Psychology (3).** Focuses on several pertinent professional, legal, ethical and related issues and concerns that impact the self-identity, credentialing, practice and status of contemporary clinical psychology. Includes an historical overview of the development of both the discipline and profession of clinical psychology; professional associations that represent each; the credentialing and education/training of clinical psychologists; and how the practice of clinical psychology is governed and impacted by the APA Ethical Code, related laws and associated judicial rulings such as Tarasoff, and professional practice standards.

**PSY 961. Seminar in Cognitive-Behavioral Assessment (3).** 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*. Prerequisites: concurrent enrollment in PSY 961, instructor's consent.

**PSY 962. Seminar in Cognitive-Behavioral 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*. Prerequisites: concurrent enrollment in PSY 962, 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. May be repeated for credit. Graded *S/U*. 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: departmental or instructor's 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: departmental or instructor's consent.

**PSY 973. Group Counseling Techniques (3).** 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 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).** 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. Graded *S/U*. Prerequisite: advisor's consent.

**PSY 979. Seminar in Personality Assessment (3).** Introduces students to organizing theories of personality and how personality frameworks allow for the conceptualization and assessment of psychopathology. Designed to teach students about the appropriate administration, usage and interpretation of major personality assessment instruments, such as the MMPI-2, MCMI-III, and PAI. Discusses how personality can be assessed at different levels of functioning and with differing methodologies, and how these methods must be carefully considered in understanding the whole person. Students learn how to write an assessment report with attention devoted to how findings from various measures and methods converge and diverge.

**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.

**PSY 991. Judgment and Decision Making (3).** Provides a graduate-level overview of the field of judgment and decision making. It covers methodological as well as theoretical topics. Full attention is given to theories of decision making as well as the heuristics and biases literature. Topics include confidence, learning from experience, affect, debiasing and more. Prerequisite: instructor's consent.

**PSY 992. Advanced Linear Models.** (3). Covers theory and application of generalized linear models and hierarchical models in psychology. Computing is emphasized. Prerequisite: 902 or instructor's consent.

# Public Affairs, Hugo Wall School of

The Hugo Wall School of Public Affairs advances excellence in public service through integrated instruction, research and 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 professional service. By integrating teaching, research and service, the school makes a distinctive contribution to Wichita State University's long-standing commitment of service to Wichita, the surrounding communities, the state of Kansas, and the region.

The school serves as the academic home for the Master of Public Administration degree, the Public Policy and Management Center, Environmental Finance Center and the Kansas Public Finance Center. Through these units, faculty, staff and students blend teaching, research and community engagement in the interdisciplinary field of public affairs. Students completing the Master of Public Administration degree gain experience through hands-on research, and network with practitioners in the fields of public and nonprofit administration.

## Financial Assistance

The school has two forms of financial aid available that provide recipients opportunities 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 Public Affairs.

Graduate assistants work directly with faculty and professional staff on research and community service projects through the Public Policy and

Management Center, the Environmental Finance Center, and the Kansas Public Finance Center. Graduate assistants work 20 hours per week with faculty and staff in the school's 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. Preference is given to graduate assistants. 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:* Kenneth A. Kriz (Regents Distinguished Professor)

*Professors:* Mark A. Glaser, Samuel J. Yeager (graduate coordinator)

*Associate Professors:* Nancy McCarthy Snyder (director, Hugo Wall School), Arwiphawee Srithongrung, 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 Master of Public Administration program is accredited by the Network of Schools of Public Policy, Affairs and Administration.

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 faculty in the Hugo Wall School of Public Affairs recruit students for the Master of Public Administration degree who are highly qualified and motivated to serve in positions of leadership in public and nonprofit organizations. A mix of preservice and inservice students are recruited for the degree program. Preservice students are generally those who have recently graduated with a baccalaureate degree, have limited work experience, and want to work toward a degree on a full-time basis. Inservice students are generally those who have relevant work experience and want to continue working while pursuing a degree on a part-time basis.

The Master of Public Administration degree is designed for students to begin study in the fall semester, and primary consideration for admission occurs each spring with a deadline of April 1. Admission of students wanting 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 three-part process.

*First*, students seeking admission to the Master of Public Administration degree must apply through the Graduate School. Admission to the Master of Public Administration degree requires students to have completed an undergraduate degree from a regionally accredited college or university and have a grade point of at least a 3.000 (4.000 system) in the last 60 hours including any postgraduate work. International students must attain a minimum score of 575 paper-based, or 88 Internet-based on the Test of English as a Foreign Language (TOEFL), or an overall band score of 7.0 on the IELTS.

*Second*, the Hugo Wall School requires applicants to submit to the graduate coordinator of the Hugo Wall School: (1) a letter of application outlining a 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 a student's work experience or academic performance.

*Third*, students are required to have an intermediate level of skill or better using word processing, spreadsheet and presentation software programs. Programs such as Word, Excel and PowerPoint, which are provided on the Wichita State University campus, or their equivalents are acceptable. Students can obtain these skills by taking short courses and through other means.

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 preservice and inservice 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:

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|---|---|
| PADM 701 | Public and Nonprofit Governance |
| PADM 702 | Research Methods |
| PADM 710 | Public Sector Organizational Theory and Behavior |
| PADM 725 | Public Management of Human Resources |
| PADM 765 | Public Sector Economics |
| PADM 802 | Quantitative Methods for Public Sector Professionals |
| PADM 865 | Public and Nonprofit Financial Management |
| PADM 895 | Public Decision Making |

***Electives.*** In addition to the core, students develop a plan of study for 15 credit hours of electives which must be approved by an advisor.

### Internships

Internships are an important part of the MPA program. Preservice 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

Students seeking any of the graduate certificates listed below must be graduate students in good standing either in a degree bound program or in nondegree, Category A status. Students should contact the Graduate School to determine if they need to apply for admission to this status, or need to reactivate their enrollment file. Students who have not completed graduate coursework at Wichita State University will need to apply for admission to degree status or nondegree, Category A status in public administration, by submitting an application and application fee to the Graduate School. Two official transcripts from all schools attended must be sent directly to the Graduate School from the institution issuing the transcript, or must be submitted to the Graduate School office in envelopes sealed by the issuing institution, if issued to student. Admission to pursue a certificate program in public administration requires a GPA of 3.000 in the last 60 hours of coursework.

#### *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 required courses are PADM 725, Public Management of Human Resources; PADM 825, State and Local Government Administration; PADM 865, Public and Nonprofit Financial Management; and one of the following: PADM 760, State and Local Economic Development; PADM 771, The Planning Process; PADM 775, State and 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 required courses are: PADM 760, State and Local Economic Development; PADM 771, The Planning Process; and RE 619, Urban Land Development; and *one* of the following: PADM 688/ECON 688, Urban Economics; PADM 865, Public and Nonprofit Financial Management; PADM 866, Public Financial Management; or RE 618, Real Estate Investment Analysis.

### *Graduate Certificate in Nonprofit Management*

This graduate certificate program offers advanced study in nonprofit management. The program enhances students' career opportunities and provides practitioners in nonprofit organizations an avenue to improve their skills. The required courses are PADM 725, Public Management of Human Resources; PADM 865, Public and Nonprofit Financial Management; PADM 870, Fundraising and Financial Management for Nonprofit Organizations; and one of the following: PADM 845, Public Policy Analysis and Program Evaluation; PADM 871, Community Networks; PADM 873, Strategic Planning in Public and Nonprofit Organizations; or HIST 701, Introduction to Local and Community History.

### *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, Public and Nonprofit Financial Management; 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 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 nonprofit 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.

**PADM 550. Workshop (3).** Specialized instruction using variable formats in relevant urban and public affairs subjects. Repeatable for credit up to 6 hours. Prerequisite: departmental consent.

**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 701. Public and Nonprofit Governance (3).** Designed to help students develop an understanding of: (a) the governmental and political complexities within which public administration operates; (b) the nonprofit sector—including its major public-benefit sub components—and its role in the public administration environment; and (c) challenges facing both public and nongovernmental actors. Students should develop a working awareness of the significant concepts and components of the governance, politics and institutions, that enables them to analyze forces of change in this challenging environment.

**PADM 702. Research Methods (3).** Cross-listed as AGE 702. Acquaints students with applied public policy research methods. Emphasizes locating, collecting, appraising and using both primary and secondary sources of data of the type used in policy, planning and administrative research. Students must complete several short research projects. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership when completed in conjunction with PADM 802.

**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. 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 750. Public Administration Workshops (1–3).** Specialized instruction using variable formats in a public administration relevant subject. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

**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. Examination of theories of economic decision making and institutions, with a focus on how economic tools can be used to inform policy and management in the public and nonprofit sectors. Covers economic principles as well as discussing market failures and public policies intended to correct or alleviate market failure. Economic decision making tools for public and nonprofit management are also introduced.

**PADM 771. 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 775. State and Local Government Law (3).** Exposes students to the legal principles which undergird the foundation of governmental operation and administration.

**PADM 785. Public Works Administration (3).** Introduces public works administration and management. 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. 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. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership when completed in conjunction with PADM 702. Prerequisite: PADM 702.

**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 roles of 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: an approved statistics class and an approved methods class.

**PADM 865. Public and Nonprofit Financial Management (3).** Cross-listed as POLS 865. Introduction to state local government financial administration. Topics include: government accounting systems, budgeting, government financial statement and financial condition analysis, internal financial control systems, debt management and policy, and government cash management and pension investment management systems. Prerequisite: PADM 765 or instructor's consent.

**PADM 866. Public Financial Management (3).** 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).** Covers government budgeting processes and institutions as well as a variety of tools and techniques for budget preparation, decision making, executing and evaluating spending programs while maintaining good financial condition. Emphasizes both political and technical skills in managing public resources. Along with spreadsheet exercises for technical analysis, cases on government budgeting are used to understand (1) how public budgets reflect a government's purposes, policies and priorities as well as its implementation plans, and (2) how public budgets reveal the political power used by a variety of actors involved in the decision-making process. Prerequisite: PADM 865 or instructor's consent.

**PADM 870. Fundraising and Financial Management for Nonprofit Organizations (3).** Focuses on fundraising and financial management in nonprofit organizations. Examines fundraising from public and private sources including funding research, proposal writing and budgeting. Includes analysis of financial statements for the purpose of managing both the short-term and the long-term financial condition of a nonprofit organization. Prerequisite: PADM 865.

**PADM 871. Community Networks (3).** Students learn how to use systems logic to define problems and develop collaborative solutions through networks that involve governmental and nongovernmental organizations. Prerequisites: PADM 701, 702, 802.

**PADM 873. Strategic Planning in Public and Nonprofit Organizations (3).** Students create a strategic plan for a public or nonprofit organization. The course begins with an introduction to measurement and performance management. Students create a logic model that describes key elements of a service or process. Stakeholder analysis, an environmental scan and SWOT (strengths, weaknesses, opportunities and threats) are among the techniques explored. Students formulate a strategic issue. Scenarios and other planning techniques are used to assess alternative courses of action. The final product is an action plan that includes decision points, cost and implementation details.

**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. Prerequisites: 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.

# 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 780. Special Topics in Religion (1–3).** Intensive study of topic(s) in religion. Discussion, reports and research projects. Repeatable for credit with departmental consent. Prerequisite: instructor's consent.

**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.

# School of Social Work (SCWK)

**Graduate Faculty**

*Professor:* Fred Besthorn (MSW director), Brien Bolin (director)

*Associate Professors:* Linnea GlenMaye (associate vice president for academic affairs), Kyoung Lee

*Assistant Professors:* Karen Countryman-Roswurm, Doug Crews, Natalie Grant, Lisa Hines, Eveline "Ndii" Kalomo

*Teaching Unclassified Professionals:* BreAnn Collins (associate director of field practicum), Debbie Willsie (director of field practicum)

*Instructors*: Sherry Chapman, Deah Davis, Shaunna Millar (BSW director)

## 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 Master of Social Work program at Wichita State University is to prepare graduates for autonomous advanced generalist practice. This mission is accomplished through the preparation of advanced social workers capable of practice in complex, diverse and ever-changing environments. Emphasis is placed on developing evidence-based knowledge and skills for ethical, culturally competent, socially just and empowering interventions on all practice levels.

### Accreditation Status

The MSW program is accredited 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 liberal arts background from an accredited college or university prior to enrollment. Applicants should be knowledgeable about and committed to the advancement of diversity, humanistic values and ethics, resolving social problems, improving social conditions, and understanding factors shaping human behavior;
3. Have a grade point average of at least 2.750 based on the last 60 hours of graded coursework; and
4. Submit completed applications to both the MSW program and the Graduate School, no later than January 15, at 5 p.m.

### Nonacademic Factors for Admission

Nonacademic 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 references.

### Admission Procedure

To be considered for admission, applicants must do the following:

1. Complete an MSW application packet which can be accessed at: wichita.edu/socialwork;
2. Submit to the Graduate School the designated application for admission and supporting transcripts; and
3. Submit to the School of Social Work, by 5 p.m., January 15, a completed MSW application form, personal statement and three references.

Electronic submission is preferred. Records will be reviewed when all materials have been submitted and received by the School of Social Work. All supporting documentation and

application materials must be on file with the Graduate School and the School of Social Work by the January 15th deadline. The School of Social Work MSW program does not have a year-round admission review process. Admission review will begin shortly after the January 15th submission deadline and applicants will be notified of their admission status by the Graduate School. Admission review will not begin prior to the January 15th application deadline nor after final admission decisions are determined. Incomplete applications will not be reviewed.

## Regular and Advanced Standing

The School of Social Work offers a regular program of study for applicants not having a baccalaureate degree in social work. In addition to the regular program, the School of Social Work offers an advanced standing program. In order to qualify for advanced standing, applicants must have an undergraduate degree in social work from a social work program accredited by the Council on Social Work Education. Advanced standing students must complete 37 credit hours. Regular program students must complete 63 credit hours.

## Full- and Part-Time Enrollment Options

At the time of admission, applicants must designate their choice to be admitted into either the full-time or the part-time track. Given the highly structured nature of the MSW curriculum, applicants admitted to either the full-time of part-time track will be required to remain in that track throughout the course of their studies. Applicants should give careful consideration and make advanced preparation (work schedule, personal and family responsibilities) before choosing either the full- or part-time option. Applicants admitted into the full-time regular program enroll in a designated summer course and four full-time semesters, consisting of 12–14 hours a semester, not counting summer semester. All students, regular and advanced standing, are required to take SCWK 760 (1 hr.) in the summer semester.

Applicants admitted into the part-time regular program must enroll in 6–10 credit hours a semester, and complete the degree within four years. Applicants admitted into the part-time advanced standing program must complete degree requirements in two years.

The MSW curriculum is highly structured. All courses in either the full-time or part-time regular or advanced standing program must be taken in exact sequence and in the semester in which they are offered as specified in the Master of Social Work course of study plan. Most MSW courses also have specified prerequisites and/or corequisites that must be adhered to before enrolling in subsequent coursework or before entering practicum placement. Most courses are only offered once a year. It is the student's responsibility to follow precisely the course of study plan. Enrolling in courses outside of the sequence or failure to enroll in corequisite courses has an impact on practicum placements and will, at the very least, delay a student's progress toward graduation and may be grounds for termination from the program. No course may be taken outside the student's program plan of study.

## Field Practicum Requirements

Students enrolled in the regular MSW program (63 hours) will be required to complete a total of 1180 agency-based clock hours in Field Practicum placement during their course of study. For their foundation year practicum, 240 hours per semester, or 480 total hours of field experience are required; for the advanced generalist year practicum, 350 hours per semester, or 700 total hours are required. Students enrolled in the Advanced Generalist Practicum will complete 350 agency-based clock hours per semester, or 700 total hours. Admission to social work practice and practicum classes is absolutely restricted to social work students who have been formally admitted to Foundation or Advanced Generalist Practicum.

## Transfer of Academic Credit

Upon admission to the MSW program, requests for transfer of academic credits from another CSWE accredited MSW program will be considered on a case by case basis. Only courses taken in a CSWE accredited Master of Social Work program will be eligible for transfer of credits at the time of admission to the MSW program. No more than 12 total hours of graduate social work course credit will be accepted for transfer for either regular or advanced standing applicants. Only foundation level courses such as Micro and Macro Human Behavior in the Social Environment, Social Welfare Policy and Analysis, Fundamentals of Social Work Research and no more than 6 graduate social work electives, if applicable to WSU's advanced generalist MSW program, will be considered for transfer credit. No transfer credit will be granted for hours completed as part of a practicum or internship placement. Applicants requesting transfers of credit upon admission to the MSW program must have received a grade of *B* or better in the course(s) being considered for transfer, and the course must have been successfully completed within the previous six years prior to the student's enrollment in the MSW program. Pass/fail courses will not be accepted for transfer. See MSW Program Policy and Student Manual for specific guidelines related to transfer of elective credit after full 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 coursework or field practicum.

There will be no credit towards the social work degree for prior life or work experiences.

## Nondegree Students

Persons who already possess a graduate degree, who do not want to seek an additional graduate degree at this time, or who wish to take graduate courses for professional advancement or personal satisfaction must apply for nondegree admission with the Wichita State University Graduate School. Students wishing to enroll in select graduate social work courses in a nondegree category may do so on a space available basis. Under such nondegree admission, students may take up to a maximum of 12 credit hours of MSW graduate credit in only the following specified foundation level courses including: SCWK 710, 712, 717, 751 and 700-level MSW graduate electives when offered. Students wishing to seek full admission to the MSW program must follow the normal admission procedures for both the Graduate School and the School of Social Work. Enrolling and successfully completing any or all of the above specified courses as a nondegree student does not automatically guarantee full admission to the MSW program.

A maximum of only 12 credit hours taken prior to acceptance and full admission to the MSW program may be applied toward the MSW degree. Only students fully admitted into the MSW program may enroll in practice and field practicum courses.

## Degree Requirements

The curriculum for the regular MSW program consists of 63 credit hours—47 hours of classroom work and 16 hours of supervised practicum. The curriculum for the advanced standing program consists of 37 credit hours—29 hours of classroom work and 8 hours of supervised practicum. The 63 hours for regular standing students and the 37 hours for advanced standing students includes 9 hours of graduate-level electives. Social work graduate elective courses are offered in the summer, spring and fall semesters of each year. Students must maintain a 3.000 grade point average; a grade of 2.000 is the minimum passing grade.

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|---|---|---|
| *Advanced Standing Program* | | *(37 hrs.)* |
| SCWK 760 | Adv. Gen. Practice Seminar I | 1 |
| SCWK 810 | Cultural Competency for Adv. Gen. Practice | 3 |
| SCWK 816 | Advanced Generalist Practice with Individuals | 3 |
| SCWK 817 | Policy II: Advocacy & Social Justice | 3 |
| SCWK 822 | Field Practicum III* | 4 |
| SCWK 823 | Field Practicum IV* | 4 |
| SCWK 833 | Adv. Gen. Practice with Families & Groups | 3 |
| SCWK 851 | Applied Social Work Research | 3 |
| SCWK 860 | Adv. Gen. Pract. Admin. Orgs. & Communities | 3 |
| SCWK 899 | Adv. Gen. Practice Seminar II | 1 |
| Concentration Electives | | 9 |

*Regular Program* .....*(63 hrs.)*

| | | |
|---|---|---|
| SCWK 700 | Foundations of Generalist Practice I | 3 |
| SCWK 702 | Foundations of Gen. Practice II | 3 |
| SCWK 710 | Micro Human Behavior & the Soc. Environment | 3 |
| SCWK 712 | Macro Human Behavior & the Soc. Environment | 3 |
| SCWK 717 | Policy I: Social Welfare & Analysis | 3 |
| SCWK 720 | Field Practicum I* | 4 |
| SCWK 721 | Field Practicum II* | 4 |
| SCWK 751 | Fundamentals of Social Work Research | 3 |
| SCWK 760 | Advanced Generalist Practice Seminar I | 1 |
| SCWK 810 | Cultural Competency for Adv. Gen. Practice | 3 |
| SCWK 816 | Advanced Generalist Practice with Individuals | 3 |
| SCWK 817 | Policy II: Advocacy & Social Justice | 3 |
| SCWK 822 | Field Practicum III* | 4 |
| SCWK 823 | Field Practicum IV* | 4 |
| SCWK 833 | Adv. Gen. Practice with Families & Groups | 3 |
| SCWK 851 | Applied Social Work Research | 3 |
| SCWK 860 | Adv. Gen. Pract. Admin. Orgs. & Communities | 3 |
| SCWK 899 | Advanced Generalist Practice Seminar II | 1 |
| Concentration Electives | | 9 |

*The Field Practicum courses require the following supervised hours in a social work setting:
SCWK 720 Field Practicum I: 240 hrs. (15 hrs. a week over 16 weeks)
SCWK 721 Field Practicum II: 240 hrs. (15 hrs. a week over 16 weeks)
SCWK 822 Field Practicum III: 350 hrs. (21–23 hrs. a week over 16 weeks)
SCWK 823 Field Practicum IV: 350 hrs. (21–23 hrs. a week over 16 weeks)

***Thesis Option:*** Students are not required to complete a thesis, but do have the option of completing a thesis as part of their MSW degree. The thesis option requires a total of 3 hours of thesis coursework (SCWK 800). Students must be enrolled in at least 1 hour of thesis during the semester of graduation. Thesis hours can count toward the required 9 hours of electives. Students who are interested in the thesis option should discuss their interest with the MSW program director prior to enrolling in the advanced (800-level or higher) curriculum.

**Courses for Graduate/Undergraduate Credit**

**SCWK 521. Forensic Social Work (3).** Cross-listed as CJ 521. Introduction to and overview of the field of forensic social work. Course content focuses on the role of social workers in forensic arenas, and the issues related to recent practice trends, relevant theoretical frameworks, collaborative team roles, and multisystem interactions. Psychosocial and legal issues are explored, with particular focus on intersections with family and social services, education, child welfare, mental health, substance abuse, criminal justice, diversity and human rights. Prerequisite: 6 hours of social sciences.

**SCWK 531. Social Work Practice in Addictions (3).** Prepares students for social work practice in the field of substance abuse and to intervene effectively when working in other areas where addictions are a concern. Includes content on the epidemiology of alcoholism and drug addiction, intervention approaches and prevention, public policy toward the regulation of drugs and their consequences, and the treatment of chemical dependency among special populations. Included in the curriculum to fulfill requirements for the Licensed Addiction Counselor (LAC) with the Behavioral Sciences Regulatory Board (BSRB). The program requires an addiction treatment focused practicum. Interested students should be advised by the social work advisor assigned to this program.

**SCWK 532. Pharmacology and Drug Classification in Social Work Practice (3).** Prepares students for social work practice in the field of substance abuse and to intervene effectively when working in other areas where addiction may be a concern. It includes psychological, physiological and sociological effects of mood altering substances and behaviors and their implications for the addiction process. An emphasis on pharmacological effects of tolerance, dependency/withdrawal, cross addiction and drug addiction are covered. Understanding common patterns and causes of drug use among subcultures of diverse populations is included. Included in the curriculum to fulfill requirements for the Licensed Addiction Counselor (LAC) with the Behavioral Sciences Regulatory Board (BSRB). The program requires an addiction treatment focused practicum. Interested students should be advised by the social work advisor assigned to this program.

**SCWK 541. Women, Children and Poverty (3).** Cross-listed as WOMS 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. *Course includes diversity content.* Prerequisite: 6 hours of social science.

**SCWK 542. International Social Work (3).** Introduces the student to international social work and social welfare policy. Provides an overview of micro and macro practice outside of one's own culture and internationally that facilitates skill development in cross-cultural assessment and intervention at the individual, group and community levels. It includes a history of international social work, community and social development. Course examines social problems, policies, programs, services, and national and multinational responses as well as current trends in the global community.

**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 experiences with self-help groups on such topics as addiction, cancer and other illnesses, eating disorders, bereavement, mental illness and parenting.

**SCWK 571. Contemporary Issues and Perspectives: LGBTQ (3).** Cross-listed as WOMS 571. Explores contemporary issues within the lesbian, gay, bisexual, transgender and queer communities. Explores personal attitudes regarding the social context for LGBTQ persons as well as other issues which have emerged as matters of concern and celebration with LGBTQ individuals and communities. Empowerment principles are employed and used to highlight a positive and affirming framework of the LGBTQ community. Students acquire basic skills in understanding issues of diversity and other contemporary conditions of life and culture. *Course includes diversity content.*

**SCWK 572. Social Work Practice with Families of Diverse Cultures (3).** Designed to introduce students to the global context of working with *grandfamilies*. Provides students with a working knowledge of the elements of diversity when working with grandfamilies (i.e. families where a grandparent(s) is raising their grandchildren). Course enhances students' knowledge, skills and ethics to contribute to more effective work with grandfamilies in general.

**SCWK 590. Domestic Violence (1).** Cross-listed as WOMS 580J. Deals with the roots of domestic violence embedded in family roles, legal systems, religious beliefs, and the psychology of women, children and men. Also covers the consequences and prevention of family abuse. Includes discussion of literature and films. *Course includes diversity content.* Repeatable for credit.

**SCWK 591. Sexual Assault Issues (1).** Cross-listed as WOMS 591. Explores the cultural myths and stereotypes about sexual assault, the legal system, methods of self-protection, community resources providing help for victims, and other related issues. Primary focus is on education to not only prevent, but eradicate sexual assault. *Course includes diversity content*. Repeatable for credit.

**SCWK 610. 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's or program consent.

**SCWK 611. Special Topics in Social Work (1–3).** Special 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's 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. Prerequisite: degree admission to MSW program. 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. Prerequisites: SCWK 700, degree admission to MSW program. Corequisite: SCWK 721.

**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. Prerequisite: degree admission to MSW program. Corequisite: SCWK 717.

**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 minority communities and understanding change and empowerment strategies which further social justice in communities and organizations. Prerequisites: SCWK 710, degree admission to MSW program. Corequisite: SCWK 751.

**SCWK 717. Policy I: Social Welfare and Analysis (3).** Surveys social welfare institutions, emphasizing the strengths and weaknesses of programs within the context of the social problems they address. The comparison of these structures and provisions enables the development and use of frameworks for analyzing social policies and evaluating programs in light of the mission of the social work profession, the principles of social and economic justice, and the historical, economic and political factors which impinge on policy. Content on the effects of policy and social work practice includes the uses of professional roles in shaping the processes of policy formulation in agency and governmental arenas. Prerequisite: degree admission to the MSW program. Corequisite: SCWK 710.

**SCWK 720. Field Practicum I (4).** Placement in community social service agencies for supervised periods of observation and direct service assignments emphasizing development of basic practice knowledge and skills. Promotes an understanding of the social service agency and its role in the community service network. Corequisite: SCWK 700.

**SCWK 721. Field Practicum II (4).** Requires placement in community social service agencies for supervised periods of observation and direct service assignments emphasizing development of basic practice knowledge and skills. Promotes an understanding of the social service agency and its role in the community service network. Corequisite: SCWK 702.

**SCWK 730. Graduate Topics in Social Work (1–3).** Specialized instruction using a variable format in a social work relevant subject. Repeatable.

**SCWK 731. Social Work and the Law (3).** Students develop an integrated, advanced generalist framework for interdisciplinary, advanced generalist practice within a legal setting. Students develop a basic knowledge of the law, the roles social workers play within the legal system, and the issue of crime and social justice with respect to race and ethnicity. Students develop an understanding of how the law shapes and regulates social work practice and the actions of social workers and their clients alike. As legal and social problems are often interdependent, students develop skill in communicating with attorneys to enhance their effectiveness in resolving clients' problems.

**SCWK 750. Social Work Workshops (1–5).** 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 for up to a total of 6 hours of credit.

**SCWK 751. Fundamentals of Social Work Research (3).** Introduces students to the components of quantitative and qualitative research methods and describes how research is designed to conduct studies which seek to improve social work practice. Introduces the basic concepts of the social work research process as well as the methods that are employed. Students develop a framework for critically evaluating (1) methods employed in current social work research, and (2) potential benefits of applying these research findings to social work practice. Prerequisite: degree admission to the MSW program. Corequisite: SCWK 712.

**SCWK 760. Advanced Generalist Practice Seminar I (1).** Builds on the graduate social work student's knowledge, experience and skills by integrating social work theory, values, ethics, methodology and literature. It is based in the generalist perspective and prepares students for the advanced generalist practice curriculum. This course is a prerequisite to all 800-level MSW core courses and must be completed in the summer before beginning the advanced generalist 800-level courses. Prerequisite: degree admission to the MSW program.

**SCWK 799. Directed Study (1–3).** Individual study with a focus developed in collaboration with a departmental faculty member. Allows students to pursue an area of special interest. Repeatable for up to 6 credit hours. Prerequisite: departmental consent.

### Courses for Graduate Students Only

**SCWK 800. Thesis (1–3).**

**SCWK 810. Cultural Competency for Advanced Generalist Practice (3).** Examines the impact of culture, race and ethnicity on client/worker interactions. Presents practice theories and interventions for culturally competent advanced generalist practice with different populations. Emphasizes experiential learning of cultural competence skills to provide services cross-culturally. Prerequisites: SCWK 760 and degree admission to the MSW program.

**SCWK 816. Advanced Generalist Practice With Individuals (3).** Develops the advanced generalist practice competencies needed for intervention with individual clients. Evidence-based theories and practice intervention strategies are applied. Advanced generalist practice skills in work with clients from diverse backgrounds are developed, and critical thinking skills are enhanced in developing an advanced generalist practice perspective integrating individual clients with larger social systems. Prerequisites: SCWK 760, degree admission to the MSW program. Corequisites: SCWK 822, 851.

**SCWK 817. Policy II: Advocacy and Social Justice (3).** Provides students with advanced generalist skills, knowledge and ethics for advanced policy practice roles within social agencies, communities and political arenas. Examines the history, strategies and approaches to advocacy and policy/program planning and development. Students demonstrate advanced skills in working with communities and policy processes on multiple levels. Prerequisites: SCWK 760, degree admission to the MSW program. Corequisite: SCWK 833.

**SCWK 821. Advanced Generalist Summer Practicum Seminar (1).** Requires placement in a community social service agency for supervised periods applying direct and indirect practice. Provides students the opportunity to integrate and apply advanced generalist practice theory within their field experience. Students are required to demonstrate increased knowledge and skills in practice, research and evaluation across multi-level systems. Requires up to 100 hours of practicum service during the summer semester. Course counts as 1 credit hour toward required MSW program electives. Prerequisite: SCWK 760 and approval by practicum office.

**SCWK 822. Field Practicum III (4).** Placement in community social service agencies for supervised periods applying direct and indirect practice. Provides students the opportunity to integrate and apply advanced generalist practice theory within their field experience. Students are required to demonstrate increased knowledge and skills in practice, research and evaluation across multi-level systems. Requires 350 hours of agency service. Prerequisites: SCWK 760, degree admission to the MSW program. Corequisites: SCWK 816, 851.

**SCWK 823. Field Practicum IV (4).** Continuation of SCWK 822. Requires 350 hours of agency service. Prerequisites: SCWK 760, 822, degree admission to the MSW program. Corequisites: SCWK 860, 899.

**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. For graduate students only.

**SCWK 833. Advanced Generalist Practice with Families and Groups (3).** Develops the advanced generalist practice competencies needed for intervention with families and groups. Evidence-based theories and practice intervention strategies are applied. Advanced generalist practice skills in work with families and groups from diverse backgrounds are developed, and critical thinking skills are enhanced in developing an advanced generalist practice perspective integrating families and group client systems with larger social systems. Prerequisites: SCWK 760, degree admission to the MSW program. Corequisite: SCWK 817.

**SCWK 840. Advanced Graduate Topics in Social Work (1–3).** Specialized instruction using a variable format in an advanced social work relevant subject. Repeatable.

**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. Prerequisites: SCWK 760, degree admission to the MSW program. Corequisites: SCWK 816, 822.

**SCWK 860. Advanced Generalist Practice Administrating Organizations and Communities (3).** Develops

the advanced generalist practice competencies needed for administrative and supervisory intervention with organizations and communities. Evidence-based theories and practice intervention strategies are applied. Provides advanced generalist practice skills in administrating, leading and managing organizations, and intervening with diverse communities. Prerequisites: SCWK 760, 816, degree admission to the MSW program. Corequisites: SCWK 823, 899.

**SCWK 870. Clinical Assessment for Advanced Generalist Practice (3).** Uses a bio-psycho-social 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.

**SCWK 899. Advanced Generalist Practice Seminar II (1).** Requires students to apply advanced generalist practice skills and knowledge to an integrative project. The project demonstrates mastery of the competencies required of an advanced generalist practitioner. Graduating students are required to develop and present their completed projects in a public forum. Prerequisites: SCWK 760, degree admission to the MSW program. Corequisites: SCWK 823, 860.

# Sociology (SOC)

**Graduate Faculty**

*Professors:* Twyla J. Hill, David W. Wright (associate vice president for data systems and chief data officer for academic affairs)

*Associate Professors:* Jodie L. Hertzog (chairperson), Charles S. Koeber (associate dean), Kathleen O'Flaherty Perez, Ronald R. Matson (dean), Jennifer Pearson (graduate coordinator), Lisa E. Thrane

*Assistant Professor:* Chase Billingham

## 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) a grade point average of at least 3.000 based on the last 60 hours of coursework; (2) 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); (3) three letters of reference from professors who are familiar with the student's undergraduate coursework; and (4) a typed, double-spaced statement of purpose (approximately 500 words) articulating the student's area of research interests and academic/career goals.

Application for admission should be filed with the Graduate School and the sociology department by March 1 for enrollment the following fall. Students applying later may be considered if any openings in the program remain.

### 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—Sociology; SOC 801, Application of Advanced Statistical Techniques; SOC 811, Advanced Research: Quantitative Methods; SOC 812, Advanced Research: Qualitative Methods; SOC 845, Seminar in Sociological Theory; and one 800-level graduate seminar; 3 hours of SOC 875, Thesis; and 3 hours of SOC 876, Thesis. A maximum of 6 thesis hours can be counted toward program requirements. Sixty percent of the 32 hours must be 700 level or above.

***Nonthesis Program.*** Students in the nonthesis program must take a total of 34 hours, including SOC 860, Proseminar—Sociology; SOC 812, Advanced Research: Qualitative Methods; SOC 845, Seminar in Sociological Theory; two 800-level graduate seminars; and 6 hours of SOC 851, Directed Project. Sixty percent of the 34 hours must be 700 level or above.

### Examinations

Students electing the thesis program in sociology must pass an oral defense of the thesis. The maximum number of attempts is two. If a student does not pass the oral defense on the first attempt, he or she may choose to switch to the nonthesis program or to make a second attempt at the oral defense. A student who does not pass the second attempt will be terminated from the program without a degree.

#### 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 506. Psychology of Helping Relationships (3).** Cross-listed as NURS 567 and PSY 506. Introduces students to a psychological perspective on helping relationships that is useful in both practice and research. Topics covered include the definition of relationship, and identification of the ways in which the roles of helper and help seeker can be structured to maximize effectiveness: e.g., power, distance, similarity and reciprocity. Relationships of interest include: counseling and psychotherapy, nursing and doctoring, family caregiving, mentoring, self-help/mutual aid, and volunteering. The emerging topic of "relationship-centered care models" in the education of health care professionals is discussed. Prerequisite: 6 hours in psychology including PSY 111 or instructor's consent.

**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).** Cross-listed as AGE 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).** 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. *Course includes diversity content.* Prerequisite: SOC 111.

**SOC 516. Sociology of Gender Roles (3).** 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. *Course includes diversity content.* 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 AGE 520. Analyzes the families and family systems of older people. Emphasizes demographic and historical changes, caregiving, and intergenerational exchanges and relationships. *Course includes diversity content.* Prerequisite: SOC 111 or AGE 100 or junior standing.

**SOC 528. Sociology of Education (3).** Introduction to sociological perspectives on the purpose of schools and their connection to the larger society. Examines the multiple functions and goals of education, stratification between schools and within schools, and inequalities of race, social class and gender. Other topics include youth culture, policy issues and long-term consequences of education for employment and income, relationships, health and crime. Prerequisite: SOC 111.

**SOC 534. Urban Sociology (3).** Studies the process of urbanization and its influence on the development of cultural and social structures throughout the world. Also discusses social problems associated with urbanization. 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. *Course includes diversity content.* Prerequisite: SOC 111.

**SOC 538. 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 539. Juvenile Delinquency (3).** The factors related to juvenile delinquency and the measures of treatment and prevention. Prerequisite: SOC 111.*

**SOC 543. Aging and Public Policy (3).** Cross-listed as AGE 543. Seminar-style course explores the impact of an aging population on social institutions, covers the history of American aging policies, the organization and financing of health care for the elderly, and discusses policy analysis as an evaluation tool for comparing public approaches to responding to the needs of an increasingly diverse aging population. Considers the process of policy formation, identifies key players and interest groups, and contrasts political ideologies regarding federal, state and private responsibilities for older people. The course emphasizes Social Security, the Older Americans Act, Medicare and Medicaid as policy examples. Also looks at the potential contributions of the older population to society (volunteer services,

provision of family care, etc.) as affecting and affected by policy. *Course includes diversity content.* Prerequisite: SOC 111 or AGE 100 or junior standing.

**SOC 545. Sociological Theory (3).** A comprehensive survey of classical sociological theory. Emphasis on theories relevant to the development of sociology. Prerequisite: 9 hours of sociology.

**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/NCr*.

*Prerequisite may be waived with departmental consent.

### Courses for Graduate Students Only

**SOC 801. Application of Advanced Statistical Techniques (3).** 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. Usually offered fall semester only. Prerequisite: SOC 501 or departmental consent.

**SOC 811. Advanced Research: Quantitative Methods (3).** Seminar course designed to provide graduate students with the conceptual tools and methodological skills needed to conduct quantitative sociological research. Students are introduced to sampling, measurement and data management issues. In addition, students gain experience with statistical software packages using large-scale data sets. Prerequisite: departmental consent.

**SOC 812. Advanced Research: Qualitative Methods (3).** Graduate students deepen their understanding of the research process as they are introduced to qualitative methods, methodology and analysis. Students learn to address methodological issues by developing a pilot project requiring them to apply their understanding of qualitative methods, sampling and coding. Through this process, students are prepared to compare the strengths and limitations of quantitative, qualitative and mixed method approaches while becoming critical consumers of qualitative research. 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 830. Seminar in Stratification and Power Structure (3).** Examines different theoretical and methodological approaches to understanding stratification and class analysis. Prerequisite: departmental consent.

**SOC 845. Seminar in Sociological Theory (3).** A comprehensive survey of contemporary sociological theories and their classical roots. Emphasis on theories applicable to students' thesis and nonthesis projects. Generally offered spring semester only. Prerequisite: 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 nonthesis 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—Sociology (3).** Examines the academic roles of sociologists, the fields of study and types of research. Usually offered fall semester only. Fulfills the university's professional and scholarly integrity training requirement covering research misconduct, publication practices and responsible authorship, conflict of interest and commitment, ethical issues in data acquisition, management, sharing and ownership. Prerequisite: departmental consent.

**SOC 870. Independent Reading. (2–3).** Advanced systematic reading in a topical area under the tutorship of a member of the graduate faculty. Repeatable for credit not to exceed 6 hours. Prerequisite: departmental consent.

**SOC 875–876. Thesis. (3–6).**

## Women's Studies (WOMS)

**Graduate Faculty**

*Professor:* Chinyere Okafor

*Associate Professors:* Doris Chang, Deborah Gordon (chairperson)

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 stylistic, literary and cultural/historical background for this 19th-century form with a specific focus on the woman's film and the family melodrama which highlight woman's position within the home. Uses textual analysis and some psychoanalytic criticism to explore and critique the fantasies and desires expressed in the visual excesses of film melodrama. *Course includes diversity content.*

**WOMS 513. Issues and Perspectives on African Women and Globalism (3).** This course is for those whose primary notions of Africa derive from little or unconfirmed information. It uses research, writing and other expressions by African women to present women dealing with their postcolonial and globalized national contexts. When possible, a teleconference with an author is arranged for a more global learning experience. Learning through local African communities, dramatic/artistic expressions and group projects is encouraged. The course aims to help students develop critical and independent thinking about Africa and to be able to apply it to issues of African women. *Course includes diversity content.*

**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 study in the relationship of nationalism and women's rights as framed by Arab women's studies. *Course includes diversity content.*

**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. *Course includes diversity content.* 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 representation 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. *Course includes diversity content.* 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. *Course includes diversity content.*

**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. *Course includes diversity content.*

**WOMS 534. Psychology of Women (3).** Cross-listed as PSY 534. Psychological assumptions, research and theories of the roles, behavior and potential of women in contemporary society. *Course includes diversity content.* Prerequisite: PSY 111.

**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. *Course includes diversity content.*

**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. *Course includes diversity content.*

**WOMS 541. Women, Children and Poverty (3).** 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. *Course includes diversity content.* Prerequisite: 6 hours of social sciences.

**WOMS 542. Women in Other Cultures (3).** Cross-listed as ANTH 542. 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. *Course includes diversity content.*

**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. *Course includes diversity content.*

**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. *Course includes diversity content.*

**WOMS 571. Contemporary Issues and Perspectives: LGBTQ (3).** Cross-listed as SCWK 571. Explores contemporary issues within the lesbian, gay, bisexual, transgender and queer communities. Explores personal attitudes regarding the social context for LGBTQ persons as well as other issues which have emerged as matters of concern and celebration with LGBTQ individuals and communities. Empowerment principles are employed and used to highlight a positive and affirming framework of the LGBTQ community. Students acquire basic skills in understanding issues of diversity and other contemporary conditions of life and culture. *Course includes diversity content.*

**WOMS 579. Asian Women in Modern History (3).** Cross-listed as HIST 579 and ETHS 579. Examines women's historical and contemporary experiences in Asian America and eight major countries in modern Asia. Covers topics on Asian women's activism in relation to nationalism and women's rights. Investigates Asian women's roles and statuses in the family and society and their educational attainment and contributions to the export-oriented industrialization of the Asia-Pacific region. Examines the intra-regional migration of female guest workers among various countries in Asia. Traces the ways in which the changes in immigration laws during the 20th century affect patterns of Asian women's migration to the United States. Introduces writing that integrates Asian women's lives and Asian American experiences into the discourses on ethnicity, national origin, class, gender and sexual orientation in the United States and the Asia-Pacific region. *Course includes diversity content.*

**WOMS 585. The Femme Fatale in Film Noir (3).** From the 1970s to the present, feminism has exerted a profound influence on theories of cinema. By focusing on film noir as a genre expressed visually and thematically, this course explores various filmic representations of women, and how and why these representations are politically, socially and theoretically significant. We apply various critical methods of analysis (psychoanalysis, ideology critique, close textual analysis, narrative, style/genre) to approach women's representation, in particular, the femme fatale (dark lady, evil seductress) within the classic film noir era which occurred between 1944 and 1958. *Course includes diversity content.*

**WOMS 586. Gender, Race and Knowledge (3).** Examines construction of objects that lie at the boundary between popular and academic or "official" knowledge (understanding of objects, people, events and activities). Examines those objects within gender and race frameworks in women's studies. Thematically organized, problem focused and methodologically interdisciplinary. Past topics include "America, Post 9/11," "A Genealogy of the Middle East," science, modernity and anthropology. *Course includes diversity content.*

**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 contribution of women's studies to various academic disciplines. *Course includes diversity content.* Prerequisites: WOMS 287, 387, or 6 hours of women's studies courses, or instructor's consent.

**WOMS 588. Gender, Race and the West/East Divide (3).** Examines critically the role of gender and race in the making of a supposed essential divide between *the West* and *the East*. Students are introduced to Edward Said's concept of Orientalism and the field of critique that targets how Europe and the U.S. craft an identity *the West* via its other, called variously, *the Orient*, *Islam*, *the Muslim world*, and *the Arab world*. Questions explored include: What is Orientalism? What is the relationship between colonialism/imperialism and the representation of *the Orient* or *the East*? How, for whom, and for what purposes do gender and race matter in this construct of a divide between West and East? These questions are examined across genres and media—i.e., in travel accounts, film, literature, policy making and news reportage. *Course includes diversity content.*

**WOMS 591. Sexual Assault Issues (1).** Cross-listed as SCWK 591. Explores the cultural myths and stereotypes about sexual assault, the legal system methods of self-protection, community resources providing help for victims, and other related issues. Primary focus is on education to not only prevent, but eradicate sexual assault. *Course includes diversity content.*

**WOMS 701. Selected Topics in Women's Studies (3).** Repeatable for credit up to 6 hours. Prerequisite: departmental consent. *Courses include diversity content.*

### Courses for Graduate Students Only

**WOMS 870. Directed Readings (2–3).** For graduate students to pursue research in areas not normally covered in coursework. *Course includes diversity content.* Repeatable for credit with departmental consent. 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. *Course includes diversity content.* 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.

# Graduate Faculty 2016–2017 (as of January 2016)

## GF-1 Membership Status

(See "Graduate Faculty" on page 12 for definitions of GF-1 and GF-2 membership status.)

Date or dates following title refer to time of initial and successive appointments. Faculty listed have academic rank.

**Abdinnour, Sue,** Omer Professor in Business, Finance, Real Estate, and Decision Sciences (1998). BS, Birzeit University, 1983; MS, Southampton University, 1988; PhD, Indiana University, 1994.

**Ackerman, Paul D.,** Assistant Professor and Assistant Chairperson, Psychology (1968). BA, University of Kansas, 1964; MA, 1966; PhD, 1968.

**Adler, Edward,** Associate Professor, School of Art, Design and Creative Industries and Graduate Coordinator, MFA in Studio Arts (2005). BA, Lewis and Clark College, 1993; MFA, Ohio University, 2002.

**Ahmed, Ikramuddin,** Associate Professor, Mechanical Engineering (2000). BSME, Bangladesh University of Engineering and Technology, 1988; MSME, University of Texas-Austin, 1993; PhD, 1997.

**Alagic, Mara,** Associate Professor, Curriculum and Instruction and Graduate Coordinator, Learning and Instructional Design (1999). BA/MA, University of Belgrade, Yugoslavia, 1975; PhD, 1985.

**Armstrong, Richard N.,** Associate Professor, Elliott School of Communication, and Director, Basic Oral Communication program (1987). BA, Southern Utah University, 1972; MA, Brigham Young University, 1974; PhD, Bowling Green State University, 1978.

**Azpuru, Dinorah,** Associate Professor, Political Science (2005). BA, University Rafael Landivar, 1985; MA, University of Pittsburgh, 1999; PhD, 2003.

**Baldridge, Wilson R.,** Professor and Chairperson, Modern and Classical Languages and Literatures (1984). BA, Denison University, 1973; PhD, State University of New York, 1982.

**Ballard-Reisch, Deborah,** Kansas Health Foundation Distinguished Chair in Strategic Communication and Professor, Elliot School of Communication (2006). BA, Bowling Green State University, 1979; MA, The Ohio State University, 1980; PhD, Bowling Green State University, 1983.

**Bannister, Andra,** Professor, School of Community Affairs, Criminal Justice program (1995). BS, University of Illinois, Champaign-Urbana, 1989; MA, Indiana University, Bloomington, 1990; PhD, Michigan State University, 1995.

**Bardo, John W.,** President and Professor (2012). BA, University of Cincinnati, 1970, MA, Ohio University, 1971; PhD, Ohio State University, 1973.

**Barut, Mehmet,** Associate Professor, Finance, Real Estate, and Decision Sciences (2000). BS, Istanbul Technical University, 1988; MS, 1991; PhD, Clemson University, 1999.

**Baxter, Deborah E.,** Associate Professor, School of Music (1984). BM, University of Kansas, 1974; MM, University of Missouri-Kansas City, 1981; DMA, 1988.

**Bechtold, Rebeccah B.,** Assistant Professor and Graduate Coordinator, English (2013). BA, Knox College, 2005; MA, University of Illinois Urbana-Champaign, 2007; PhD, 2012.

**Beck, James B.,** Assistant Professor, Biological Sciences (2013). BS, Eastern Kentucky University, 1999; PhD, Washington University, 2007.

**Bees, Julie I.,** Professor, School of Music (1986). BM, Peabody Conservatory, 1974; DMA, University of Colorado, Boulder, 1982.

**Beeson, Jodie,** Assistant Professor, School of Community Affairs, Criminal Justice program (2010). BA, Bethel College, 1989; MA, Wichita State University, 2006; PhD, 2009.

**Bergman, Daniel,** Associate Professor, Curriculum and Instruction (2007). BS, University of Nebraska-Lincoln, 1999; MA, 2002; MA University of Nebraska-Kearney, 2004; PhD, Iowa State University, 2007.

**Bernstorf, Elaine D.,** Professor, School of Music (1992). BME, Wichita State University, 1976; MME, 1978; PhD, Communicative Disorders and Sciences, Wichita State University, 1993.

**Bertapelle, Jessica D. Freeman,** Assistant Professor, Elliott School of Communication (2013). BA, University of Texas-Arlington, 2006; PhD, University of Missouri-Columbia, 2011.

**Besthorn, Fred,** Professor and MSW program director, Social Work (2010). BS, Sterling College, 1973; MDiv, Grace Theological Seminary, 1978; MSW, University of Kansas, 1991; PhD, 1997.

**Billingham, Chase M.,** Assistant Professor, Sociology (2013). BA, Tulane University, 2006; MA, Northeastern University, 2008; PhD, 2013.

**Birondo, Noell,** N., Assistant Professor, Philosophy (2015). BA, University of California-Berkeley, 1995; PhD, University of Notre Dame, 2004.

**Birzer, Michael Lee,** Professor and Director of the School of Community Affairs, and Graduate Coordinator, Criminal Justice program, (1996). BS, Wichita State University, 1980; MAJ, 1994; EdD, Oklahoma State University, 2000.

**Bischoff, William,** Professor, Geology, and Graduate Coordinator, Earth, Environmental and Physical Sciences program (1984). BA, DePauw University, 1979; MS, Northwestern University, 1982; PhD, 1985.

**Blakeslee, Donald J.,** Professor, Anthropology (1976). BA, University of Nebraska, 1969; MA, 1971; PhD, University of Wisconsin-Milwaukee, 1975.

**Boehme, Rodney,** Associate Professor, Finance, Real Estate, and Decision Sciences (2012). BS, Texas A & M University, 1984; MBA, Baylor University, 1993; PhD, University of Houston, 1998.

**Bolin, Brien L.,** Professor and Director, School of Social Work (1999). BS, Oklahoma State University, 1985; MS, 1988; MSW, Walla Walla College, 1998; PhD, Oklahoma State University, 1994.

**Bousfield, George R.,** Jones Distinguished Professor, Biological Sciences (1991). BS, Saginaw Valley State University, 1974; MA, Indiana University, 1976, PhD, 1981.

**Boynton, Thomas J.,** Assistant Professor, English (2014). BA, Monmouth College, 2002; MA, University of Illinois, 2005; PhD, 2011.

**Brady, Stephen W.,** Associate Professor, Mathematics, Statistics, and Physics, and College Algebra program Director (1967). AB, Indiana University, 1963; AM, 1965; PhD, 1968.

**Bray, Susan Stewart,** Assistant Professor, Counseling, Educational Leadership, Educational and School Psychology (2012). BS, Louisiana State University, 1984; MS, 2004; MA, Louisiana Tech University, 1996; PhD, Texas A&M University, 2009.

**Brickell, Jean M.,** Associate Professor and Chairperson, Medical Laboratory Sciences (2011). BA, University of Colorado, 1970; MS, University of Alaska, 1986; EdD, Washington State University, 1993. Board Certified MT.

**Broberg, J. Christian,** Associate Professor, Management (2010). BA, Brigham Young University, 1995; University of Arizona, 1998; ABD, Texas Tech University.

**Brooks, Christopher K.,** Professor, English (1989). BA, Indiana University, 1977; MA, Indiana State University, 1979; PhD, Purdue University, 1987.

**Brown, Gina R.,** Assistant Professor and Graduate Coordinator, Physician Assistant Program (2013). BS, Wichita State University, 2004; MPAS, University of Nebraska-Omaha, 2009.

**Bryant, Jeffrey J.,** Professor, School of Accountancy, and BKD Faculty Fellow (1993). BBA, Wichita State University, 1977; JD, Washburn University School of Law, 1980; PhD, Texas Tech University, 1994.

**Bubp, Robert,** Associate Professor, School of Art, Design and Creative Industries (2002). BFA, University of Georgia, 1993; MFA, Georgia State University, 2002.

**Bukonda, Ngoyi K.Z.,** Professor, Public Health Sciences (2007). BS, National University of Zaire, 1981; MPH, University of Minnesota, 1989; PhD, 1994.

**Burke, Collette E.,** Associate Professor, Geology (1983). BA, St. Mary of the Woods College, 1973; MS, Akron University, 1981; PhD, University of Wisconsin-Milwaukee, 1983.

**Campbell, Betty I.,** Professor, School of Nursing (1998). Nursing Diploma, Hurley Medical Center School of Nursing, 1975; BSN, University of Michigan, 1980; MN, University of Kansas, 1987; PhD, University of Colorado, 1996.

**Carroll, Jeri A.,** Professor, Curriculum and Instruction (1982). BME, University of Kansas, 1965; MS, 1973; PhD, 1980.

**Castro, Susan,** Assistant Professor, Curriculum and Instruction (2012). BS, University of California – Los Angeles, 1993; MA, 1998; PhD, 2006.

**Cecil, Matthew,** Professor and Director, Elliott School of Communication (2013). BS, South Dakota State University-Brookings, 1995; MA, Minnesota State University-Mankato, 1997; PhD, University of Iowa, 2000.

**Chand, Masud,** Associate Professor, Management (2010). BBA, University of Dhaka, 2000; MBA, Simon Fraser University, 2004; PhD, 2009.

**Chandler, Gaylen,** W. Frank Barton Distinguished Chair in Entrepreneurship and Professor, Management (2010). BS, Brigham Young University, 1980; MBA, University of Utah, 1989; PhD, 1990.

**Chang, Doris,** Associate Professor, Women's Studies (2003). BA, University of North Carolina-Charlotte, 1992; MA, Bowling Green State University, 1994; PhD, Ohio State University, 2002.

**Chen, Zheng,** Assistant Professor, Electrical Engineering and Computer Science (2013). BE, Zhejiang University-China, 1999; ME, 2002; PhD, Michigan State University, 2009.

**Cheng, Jen-Chi,** Associate Professor and Chairperson, Economics (1989). BA, National Chengchi University, 1978; MA, National Taiwan University, 1982; PhD, Vanderbilt University, 1989.

**Clark, Charles B.,** Assistant Professor, Psychology (2015), BA, Aquinas College, 2004; MA, University of Southern Mississippi, 2008; PhD, 2011.

**Claycomb, Vincentia (Cindy) A.,** Assistant to the President for Strategic Planning, and Professor, Marketing, (1994). BBA, Wichita State University, 1979; MBA, 1991; PhD, Oklahoma State University, 1995.

**Close, Dan E.,** Associate Professor, Elliott School of Communication (1990). BA, Wichita State University, 1981; MA, 1993.

**Cluff, Kim,** Assistant Professor, Biomedical Engineering (2013). BS, University of Nebraska-Lincoln, 2007; MS, 2009; PhD, 2012.

**Cochran-Black, Diana L.,** Associate Professor, Medical Laboratory Sciences (1987). BS, Emporia State University, 1979; MHS, Wichita State University, 1986; DrPH, University of Oklahoma, 1998.

**Connor, Francis,** Assistant Professor, English (2012). BA, University of Scranton, 1994; MA, George Mason University, 2003; PhD, University of Virginia, 2011.

**Consiglio, Catherine A.,** Associate Professor, School of Music (1990). BA, Wichita State University, 1979; MA, New England Conservatory, 1983.

**Countryman-Roswurm, Karen I.,** Assistant Professor, School of Social Work; Executive Director, Center for Combatting Human Trafficking (2013). BS, Wichita State University, 2005; MSW, 2006.

**Craft, Timothy,** Associate Professor, Finance, Real Estate, and Decision Sciences; Director, Koch Global Trading Center (2000). BS, Illinois State University, 1987; MS, University of Illinois-Urbana, 1992.

**Cramer, Katherine,** Associate Professor, Curriculum and Instruction (2010). BSE, Emporia State University, 2000; MS, Kansas State University, 2003; PhD, Arizona State University, 2006.

**Crews, Douglas,** Assistant Professor, Social Work (2012). BA, Belmont University, 1993; MDiv, Vanderbilt University, 2004; MSW, University of Central Florida, 2009; PhD, University of Utah, 2012.

**Cure Vellojin, Laila N.,** Assistant Professor, Industrial and Manufacturing Engineering (2015). BS, Universidad del Norte-Colombia, 2003; MS, 2006; PhD, University of South Florida, 2011.

**Davis, Lynne,** Associate Professor, and Town Faculty of Distinction in Organ, School of Music (2006). BM, University of Michigan, Ann Arbor, 1971.

**Dawe, Margaret Baughman,** Associate Professor and Director of Creative Writing, English (1993). BA, University of Virginia, 1979; MS, Northwestern University, Evanston, 1980; MFA, City University of New York, Brooklyn College, 1989.

**DeFrain, Darren C.,** Associate Professor and Director of the Writing Program, English (2005). BA and BS, University of Utah, 1989; MA, Kansas State University, 1992; MFA, Texas State University, 1995; PhD, Western Michigan University, 2000.

**Dehner, George,** Associate Professor, History (2004). BS, Temple University, 1992; MA, University of Denver 1999; PhD, Northeastern University, 2001.

**Deibel, Geoffrey S.,** Assistant Professor, School of Music (2013). BA and BM, Northwestern University, 2002; MM, 2004; DMA, Michigan State University, 2012.

**Demovic, Angela,** Assistant Professor, Anthropology (2009). BS, Western Illinois University, 1990; MA, Tulane University, 2000; PhD, 2007.

**deSilva, Dharma,** Professor, Rudd Foundation Fellow, Management, and Director of the Center for International Business Advancement (1976). BA and BS, University of Evansville, 1957; MS, Illinois University, 1959; PhD, Indiana University, Bloomington, 1966.

**DeVault, Amy J.,** Visiting Assistant Professor, Elliott School of Communication (2008). BA, Fort Hays State University, 1997; MS, Kansas State University, 2002

**Dooley, Patricia,** Elliott Professor of Communication, Elliott School of Communication (1997). BA, University of Minnesota, 1975; MA, 1993; PhD, 1994.

**Dreifort, John E.,** Professor, History (1970). BS, Bowling Green State University, 1965; MA, 1966; PhD, Kent State University, 1970.

**Dusenbury, Wendy,** Assistant Professor, School of Nursing (2014). BSN, Northwestern Oklahoma State University, 1994; MSN, Wichita State University, 1998; DNP, University of Alabama at Birmingham, 2014.

**Dutta, Atri,** Assistant Professor, Aerospace Engineering (2013). BT, Indian Institute of Technology, 2002; MS, Georgia Institute of Technology, 2005; PhD, 2009.

**Engber, Kimberly,** Dean, Honors College and Associate Professor, English (2007). BA, Kenyon College, 1993; MPhil, The Graduate Center, City University of New York, 2000; PhD, 2003.

**Eslami, Ali,** Assistant Professor, Electrical Engineering and Computer Science (2015). BS, Sharif University of Technology, 2004; MS, 2006; PhD, University of Massachusetts-Amherst, 2013.

**Ewing, Janice,** Associate Professor and Chairperson, Curriculum and Instruction, and Graduate Coordinator, Master of Arts in Teaching program (2009). BA, University of British Columbia, 1973; MA, Washington State University, 1977; PhD, University of South Carolina, 1990.

**Farmer, Steven M.,** Professor, Barton Distinguished Chair in Business, Management (1999). BS, Tulane University, 1978; MA, Southern Methodist University, 1980; MS, Georgia Institute of Technology, 1991; PhD, 1993.

**Feleppa, Robert,** Professor, Philosophy (1980). BA, H.H. Lehman College, 1973; MA, Washington University, 1977; PhD, 1978.

**Figy, Terrance M.,** Assistant Professor, Mathematics, Statistics and Physics (2015). BS, University of Wisconsin-Eau Claire, 2000; MA, University of Wisconsin-Madison, 2004; PhD, 2006.

**Fiorini, Jody J.,** Associate Professor and Chairperson, Counseling, Leadership, Education and School Psychology (2015). PhD, Syracuse University, 2001.

**Flores-Cuautle, Francisco,** Assistant Professor, Modern and Classical Languages and Literatures (2012). BA, Benemerita Universidad Autonoma de Puebla, 1999; MA, University of Arkansas, 2004; PhD, Vanderbilt University, 2010.

**Flynn, William P.,** Assistant Professor, School of Music (2013). BM, Capital University, 2010; MM, University of North Texas, 2012.

**Foley, Mark,** Professor and Director of Jazz Studies, School of Music (1989). BM, University of Minnesota, 1984; MM, Eastman School of Music, University of Rochester, 1989.

**Foster, Mary Sue,** Professor, School of Art, Design and Creative Industries (1966). BAE, University of Kansas, 1961; MSE, 1963; MFA, 1971.

**Glaser, Mark A.,** Professor, Hugo Wall School of Public Affairs and Center for Urban Studies (1994). BBA, Wichita State University, 1970; MUA, 1974; PhD, University of Texas-Arlington, 1981.

**GlenMaye, Linnea,** Associate Vice President, Division of Academic Affairs, and Associate Professor, School of Social Work (1998). BSW, College of St. Catherine, 1986; MSW, 1989; PhD, University of Washington, 1995.

**Goldbarth, Albert,** Adele M. Davis Distinguished Professor of Humanities, English (1987). BA, University of Illinois, Chicago Circle, 1969; MFA, University of Iowa, 1971.

**Gong, Maojun,** Assistant Professor, Chemistry (2012). BA/BS, University of Science and Technology of China, 1998; PhD, University of Cincinnati, 2006.

**Gordon, Deborah A.,** Associate Professor, Women's Studies and Religion (1992). BA, University of California-Davis, 1978; MA, University of Maryland-College Park, 1981; PhD, University of California-Santa Cruz, 1991.

**Graham, Gerald H.,** R.P. Clinton Distinguished Professor, Management (1967). BS, Northwestern State College, 1959; MSBA, 1960; PhD, Louisiana State University, 1968.

**Granada, Arthur,** Senior Fellow, Curriculum and Instruction (2012). BSE, Emporia State University, 1977; MEd, Wichita State University, 1986; EdD, Northern Arizona University, 1997.

**Grant, Natalie S.,** Assistant Professor, School of Social Work (2007). BGS, Wichita State University, 1999; BA, 2000; MSW, 2001; MA, 2005; EdD, 2011.

**Gray, Keith D.,** Assistant Professor, Geology (2014). BS, New Mexico State University, 1995; MS, University of Idaho, 2001; PhD, Washington State University, 2012.

**Griffith, Jean,** Associate Professor, English, and Tilford Coordinator, Division of Academic Affairs (2007). BA, Boston College, 1993; MA, Temple University, 1996; PhD, Texas A & M University, 2003.

**Hackett, Donald W.,** Associate Professor and Kansas Family Business Fellow, Management (1973). BBA, University of Oklahoma, 1967; MBA, 1970; DBA, 1974.

**Hager, Kevin,** Associate Professor, Elliott School of Communication (1998). BA, Fort Hays State University, 1982; MS, 1983.

**Haines, Brenna J.,** Assistant Professor, Curriculum and Instruction (2015).BS, University of Connecticut, 1998; MS, University of Delaware, 2000; EdD, George Washington University, 2014.

**Hakansson, Nils,** Assistant Professor, Biomedical Engineering (2012). BA, Duke University, 1988; MS, University of California-Davis, 2003; PhD, 2008.

**Hale, LaDonna S.,** Professor, Director of Assessment, Physician Assistant (1998). BS, University of Kansas, 1995; PharmD, 1996.

**Hall, Michael,** Associate Professor, Political Science (2009). BA, University of Pittsburgh, 1991; MPIA, 1993; PhD, University of California-Santa Barbara, 2002.

**Hamdeh, Hussein,** Professor, Mathematics, Statistics, and Physics (1989). BS, Lebanese University, 1978; MS, Northeastern University, 1980; PhD, 1986.

**Hanawalt, Michael,** Assistant Professor and Director of Choral Activities, School of Music (2012). BM, St. Olaf College, 2000; MM, Michigan State University, 2009; PhD, Florida State University, 2012.

**Harrison, Paul,** H. Dene Heskett Chair, Director, and Professor, School of Accountancy (2000). BM, Kansas State University, 1976; MBA, 1977; PhD, Arizona State University, 1982.

**Hawley, Suzanne,** Professor, Public Health Sciences (2012). BA, California State University – San Bernardino, 1993; MA, 1995; MPH, Loma Linda University, 1999; PhD, 2002.

**Hayton, Jeffrey P.,** Assistant Professor, History (2014). BA, McMaster University, 2002; MA, 2003; PhD, University of Illinois, 2013.

**He, Jibo,** Assistant Professor, Psychology (2012). BA/BS, Peking University, 2007; MA, University of Illinois, 2010; PhD, 2012.

**Headley, Dean,** Associate Professor, Marketing (1988). BSB, Emporia State University, 1970; MPH, University of Oklahoma, 1974; MBA, Wichita State University, 1982; PhD, Oklahoma State University, 1989.

**Held, Alan J.,** Associate Professor and Ross Faculty of Distinction, School of Music (2014). BM, Millikin University, 1987 MM, Wichita State University, 1983.

**Hendry, William J. III,** Professor and Chairperson, Biological Sciences (1992). BA, Northeastern University, 1974; MA, 1978; PhD, Clark University, 1982.

**Henry, Robin C.,** Associate Professor, History (2006), BA, Austin College, 1998; MA, University of Massachusetts-Amherst, 2000; PhD, Indiana University-Bloomington, 2006

**Hepburn, Brian S.,** Assistant Professor, Philosophy (2014). BA, University of Lethbridge, 1999; PhD, University of Pittsburgh, 2007.

**Herron, Jason P.,** Assistant Professor, Counseling, Leadership, Education and School Psychology (2015). MEd, University of Oklahoma, 2013; PhD, 2015.

**Hersch, Philip L.,** Professor, and Graduate Coordinator, Economics (1983). BA, Queens College, 1974; MA, Ohio State University, 1978; PhD, 1982.

**Hershfield, Jeffrey A.,** Associate Professor, Philosophy (1995). BA, University of British Columbia, 1982; MA, University of Arizona, 1985; PhD, 1992.

**Hertzog, Jodie,** Associate Professor and Chairperson, Sociology (2003). BS, Grand Valley State University, 1994; MA, Western Michigan University, 1997; PhD, Purdue University, 2003.

**Hill, Twyla J.,** Professor, Sociology (1998). BA, California State University, 1986; MA, University of California-Irvine, 1993; PhD, 1998.

**Hines, Lisa,** Assistant Professor, Social Work (2010). BASW, University of South Carolina, 1991; MSW, 1995; PhD, 2004.

**Ho, Lop-Hing,** Associate Professor, Mathematics, Statistics, and Physics (1989). BA, Chinese University of Hong Kong, 1979; MA, Princeton University, 1982; PhD, 1984.

**Houseman, Greg,** Associate Professor, Biological Sciences (2009). BA, Cornerstone University, 1990; MS, Illinois State University, 1998; PhD, Michigan State University, 2004.

**Hughes, David T.,** Associate Professor and Graduate Coordinator, Anthropology (1988). BS, West Texas State University, 1973; MA, University of Arkansas, 1977; PhD, University of Oklahoma, 1988.

**Hundley, Helen S.,** Assistant Professor, History (1990). BA, University of Florida, 1972; MA, University of Georgia, 1977; PhD, University of Illinois-Champaign-Urbana, 1984.

**Hunsicker, J. David,** Assistant Professor, School of Music (2012). BM, Indiana University, Bloomington, 1994; MM, University of Michigan, Ann Arbor, 2000; DMA, Arizona State University, 2012.

**Jack, Ashlie,** Assistant Dean and Accreditation Officer, College of Education, and Assistant Professor, Curriculum and Instruction (2012). BSE, Emporia State University, 1996; MS, 2003; PhD, Kansas State University, 2011.

**Jameson, Mary Liz,** Associate Professor, Biological Sciences (2010). BS, University of Nebraska-Lincoln, 1986; MS, 1988; PhD, University of Kansas, 1997.

**Jankauskas, Sarunas,** Assistant Professor, School of Music (2012). BM, Grand Valley State University, 2005; MM, Rice University, 2007; DMA, University of Texas at Austin, 2011.

**Jin, Zhiren,** Professor, Mathematics, Statistics, and Physics (1994). BS, Hangzhou University, China, 1982; MS, 1985; PhD, University of Pennsylvania, 1990.

**Johnson, John Paul,** Professor, School of Music (2009). BM, Westminster College, 1976; MM, University of Wisconsin at Madison, 1981; PhD, 1992.

**Jones, Bret,** Professor and Program Director of Theatre, School of Performing Arts (2009). BA, East Central University, 1991; MA, University of Oklahoma, 1993; PhD, 2003.

**Jung, Daeun,** Assistant Professor, Economics (2013). BA, Chung-Ang University-Seoul, 2006; MA, Michigan State University, 2008; PhD, 2013.

**Kim, Wonyoung,** Assistant Professor and Graduate Coordinator, Sport Management (2012). BPE, Chungnam National University, 2001; MPE, 2003; MS, Mississippi State University, 2009; PhD, University of Southern Mississippi, 2012.

**King, Marie Allyn,** Professor and Program Director of Opera, School of Music (1997). BFA, Florida Atlantic University, 1972; Artists Diploma, University of Cincinnati College Conservatory of Music, 1997; MFA, 1998.

**Kliment, Linda,** Assistant Professor, Aerospace Engineering (2010). BS, University of Nebraska-Lincoln, 2000; MS, Wichita State University, 2002; PhD, 2009.

**Koeber, Charles S.,** Senior Associate Dean, Fairmount College of Liberal Arts and Sciences, and Associate Professor, Sociology, (1999). BA, University of Wyoming, 1991; MA, 1993; PhD, Binghamton University, 1999.

**Koehn, Mary,** Associate Professor, School of Nursing (1990). BSN, Wichita State University, 1987; MSN, 1990.

**Koupf, Danielle R.,** Assistant Professor, English (2014). AB, Lafayette College, 2008; PhD, University of Pittsburgh, 2014.

**Kreinath, Jens,** Associate Professor, Anthropology (2009). BA, University of Heidelberg, 1991; BA, 1995; MA, 1997; BA, 1997; PhD, 2006.

**Kriz, Kenneth A.,** Regents Distinguished Professor, Hugo Wall School of Public Affairs and Center for Urban Studies (2013). BS, University of Iowa, 1987; MS, University of Colorado-Denver, 1996; PhD, Indiana University, 2000.

**Lacy, Randolph A.,** Assistant Professor, School of Music (2013). BM, Rice University, 1984; MM, 1984; DMA, University of Houston, 2004.

**Lasine, Stuart,** Professor, Religion and Women's Studies (1984). BA, University of Michigan, 1966; MA, University of Wisconsin, 1968; PhD, 1977.

**Laycock, Mark,** Professor, Ann Walenta Faculty of Distinction Endowed Professorship and Director of Orchestra, School of Music, (2006). BA, University of Southern California, 1988; MM, University of Nebraska, 1990; DA, University of Northern Colorado, 2005.

**Lee, Kyoung,** Associate Professor, Social Work (2007). BA, Kang-Nam University, 1977; MPA, Myong-Ji University, 1999; MA, West Virginia University-Morgantown, 2003; MSW, 2005; PhD, 2005.

**Lee, Soon Chun,** Assistant Professor, Curriculum and Instruction (2015). BS, Kyung-Hee University-Korea, 1994; MEd, Yonsei University-Korea, 2008; MA, Ohio State University, 2011; PhD, 2012.

**Lefever, Shirley,** Dean, College of Education, and Professor, Curriculum and Instruction, (2005). BS, Kansas State University, 1984; MSEd, Kansas State University, 1988; PhD, Kansas State University, 1991.

**Lehecka, Bryan J.,** Assistant Professor, Physical Therapy (2012). BS, Kansas State University, 2006; PhD, Wichita State University, 2009.

**Li, Jiaqi,** Assistant Professor, Counseling, Leadership, Education and School Psychology (2014). BA, Liaoning Normal University-China, 2000; MEd, Western Kentucky University, 2009; EDD, Texas Tech University, 2013.

**Liu, Fuchang,** Associate Professor, Curriculum and Instruction (2005). BA, Liaocheng Teacher's College, 1982; MA, Jilin University, 1987; MEd, University of Louisiana-Monroe, 1995; EdD, 1999.

**Loftus, Ariel,** Associate Professor, History (1997). BA, University of Michigan, 1979; PhD, Stanford University, 1981; MA University of Michigan, 1982.

**Lohfink, Gayla,** Assistant Professor, Curriculum and Instruction (2010). BS, Kansas State University, 1976; PhD, 2006; MS, Fort Hays State University, 1982; EdS, 1986.

**Longhofer, Stanley D.,** Professor and Stephen L. Clark Chair in Real Estate and Finance, Finance, Real Estate, and Decision Sciences, and Director, Center for Real Estate (1999). BBA, Wichita State University, 1989; MS, University of Illinois, 1991; PhD, 1995.

**Madhavannair, Rajeev,** Assistant Professor, Mechanical Engineering (2013). BS, University of Calicut-India, 1998; MS, Wichita State University, 2002; PhD, Iowa State University-Ames, 2006.

**Manske, Robert C.,** Professor and Chairperson, Physical Therapy, (2003). BA, Wichita State University, 1991; MS, 1994; MEd, 2000.

**Markova, Gergana T.,** Associate Professor, Management (2006). BS, Bulgarian University of National and World Economy, 1997; MS, 1998; MA, Southwestern University of Bulgaria, 2001; PhD, University of Central Florida, 2006.

**Markovich, Victor A.,** Professor, School of Music (1990). BM, Kent State University, 1972; MM, University of Michigan, 1977; PhD, 1985.

**Martin, Charles L.,** Professor, Marketing (1985). BBA, West Texas State University, 1981; MBA, 1982; PhD, Texas A&M University, 1986.

**Matson, Ronald R.,** Dean, Fairmount College of Liberal Arts and Sciences and Associate Professor, Sociology (1970). AB, University of South Dakota, 1965; MA, University of Colorado, 1967; PhD, 1973.

**Matveyeva, Susan J.,** Associate Professor and Cataloging and Institutional Repository Librarian, University Libraries (2013). BA, Odessa State Conservatory, 1970; PhD, Russian Academy of Science Institute of Philosophy, 1985; MLIS, Wayne State University, 2001.

**Mau, Joseph W.C.,** Professor, Counseling, Educational Leadership, Educational and School Psychology, and Graduate Coordinator, Counseling (1991). BA, Tamkang University, Taiwan, 1979; MA, University of Iowa, 1985; PhD, 1990.

**Mays, Walter A.,** Distinguished Professor, School of Music (1970). BS, University of Cincinnati, 1963; MM, 1964; DMA, 1970.

**McDonald, J. David,** Professor, Biological Sciences (1992). BS, Kansas State University, 1983; PhD, 1988.

**McKellar, Nancy A.,** Associate Professor, Counseling, Educational Leadership, Educational and School Psychology, and Graduate Coordinator, School Psychology (1984). BS, University of Michigan, 1970; MA, Northern Illinois University, 1979; PhD, 1981.

**Miles, William,** Professor and Barton Fellow, Economics (1999). BS, Bentley College, 1993; PhD, University of Illinois at Urbana-Champaign, 1999.

**Miller, Josephine,** Professor, School of Music (2005). BME, Ohio State University, 1972; PhD, University of Nebraska, 2005.

**Miller, L. Scott,** Professor and Chairperson, Aerospace Engineering, (1988). BS, Texas A&M University, 1981; MS, 1983; PhD, 1988.

**Miller, Rodney E.,** Dean, College of Fine Arts, and Professor, School of Music (2004). BM, West Texas State University, 1974; MM, Indiana University, 1977; PhD, Illinois State University, Normal, 1988.

**Mitchell-Koch, Katie,** Assistant Professor, Chemistry (2012). BS, University of Kansas, 2003; PhD, 2008; MS, University of Michigan-Ann Arbor, 2005

**Moore-Jansen, Peer,** Professor and Chairperson, Anthropology (1989). BA, Texas Tech University, 1977; MA, University of Arkansas, Fayetteville, 1982; PhD, University of Tennessee, Knoxville, 1989.

**Morrison, Barbara,** Janice M. Riordan Distinguished Professorship in Maternal and Child Health, and Associate Professor, Nursing (2012). BA, College of Wooster, 1977; BSN, Columbia University, 1979; MN, University of Washington, 1987; PhD, University of Illinois, 2000.

**Moscoso, Wilfredo,** Assistant Professor, Industrial and Manufacturing Engineering (2013). BS, Pontificia Universidad Catolica Madre y Maestria, 1996; MS, 2003, Purdue University, MS, 2008; PhD, 2008.

**Muether, Mathew O.,** Assistant Professor, Mathematics, Statistics and Physics and Graduate Coordinator, Physics (2014). BS, University of Missouri-Columbia, 2003; PhD, University of Illinois-Urbana, 2010.

**Muma, Richard D.,** Associate Vice President for Quality Assurance and Accountability, Division of Academic Affairs, and Professor, Public Health Sciences (1994). BS, University of Texas Medical Branch-Galveston, 1987; MPH, University of Texas Health Science Center-Houston, 1993; PhD, University of Missouri at St. Louis, 2004.

**Muthitacharoen, Achita,** Associate Professor, Finance, Real Estate, and Decision Science, (2002). BA, Thammasat University, 1994; MBA, University of Memphis, 1997; PhD, 2002.

**Nance, Donald W.,** Associate Professor, Psychology, and Executive Director, Training and Technology Team (1968). BA, University of Redlands, 1964; MA, University of Iowa, 1967; PhD, 1968.

**Navarro-Serrano, Jose E.,** Assistant Professor, Modern and Classical Languages and Literatures (2013). BA, Universidad Autonoma de Madrid, 1996; MA, Texas State University-San Marcos, 2007; PhD, University of Texas-Austin, 2013.

**Noble, Jeffrey,** Assistant Professor, Sport Management (2012) BS, Iowa State University, 1984; MS, Western Illinois University, 1987; EdD, University of Northern Colorado, 2004.

**Nyberg, Sue,** Professor and Interim Chairperson, Physician Assistant (1988). BHS, Wichita State University, 1981; MHS 1988.

**Oare, Steven,** Associate Professor, School of Music (2008). BM, University of Idaho, 1987; DFA, University of Calgary, 1991; MM, 1994; PhD, Michigan State University, 2007.

**Okafor, Chinyere,** Professor and Chairperson, Women's Studies (2003). BA, University of Nigeria, 1975; MA, University of Sussex, 1979; PhD, University of Nigeria, 1989

**Owens, Robert M.,** Associate Professor and Graduate Coordinator, History (2004). BA, Southern Illinois University, 1995; MA, University of Illinois at Urbana-Champaign, 1998; PhD, 2003.

**Palmiotto, Michael,** Professor, School of Community Affairs, Criminal Justice program (1994). BS, Mercy College, 1971; MS, City University of New York, 1974; PhD, University of Pittsburgh, 1980.

**Pang, Chengzong,** Assistant Professor, Electrical Engineering and Computer Science (2013). BE, North China Electric Power University, 2000; MS, 2003; PhD, Texas A&M University, 2011.

**Parcell, Lisa,** Associate Professor and Graduate Coordinator, Elliott School of Communication (2010). BS, Appalachian State University, 1993; MA, University of Alabama, 1997; PhD, 2003.

**Parcell, William C.,** Associate Professor and Chairperson, Geology (2001). BS, University of the South, 1994; MS, University of Delaware, 1997; PhD, University of Alabama, 2000.

**Parker, Phillip E.,** Professor, Mathematics, Statistics, and Physics (1983). BA, Hendrix College, 1969; MA, University of Missouri, 1970; PhD, Oregon State University, 1977.

**Parsons, Susan,** Associate Professor, Nursing (2012). BSN, Wichita State University, 1974; MSN, 1978; PhD, Kansas State University, 1987.

**Patterson, Jeremy A.,** Professor, Human Performance Studies, and Director of Human Performance Laboratory (2005). BS, Linfield College, 1995; Graduate Diploma, Victoria University, 1997; MAS, 2002; PhD, 2004.

**Pearson, Jennifer,** Associate Professor and Graduate Coordinator, Sociology (2009). BA, University of Texas at Austin, 2000; MA, 2003; PhD, 2008.

**Pederson, Claudia C.,** Assistant Professor, School of Art, Design and Creative Industries (2014). BA, California State University-Long Beach, 2002; MA, 2004; PhD, Cornell University, 2012.

**Pelkowski, Jodi,** Associate Professor, Economics (2002). BA, Coe College, 1995; MS University of Kentucky, 1999; PhD, 2000.

**Perez, Kathleen O.,** Associate Professor, Sociology (1983). BA, Clarke College, 1979; MA, Miami University, 1980; PhD, Purdue University, 1984.

**Perline, Martin M.,** Professor, Economics and Bloomfield Foundation Faculty Fellow in Business (1965). BA, Arizona State University, 1960; MA, Ohio State University, 1962; PhD, 1965.

**Perry, John T.,** Associate Professor and Chairperson, Management (2011). BA, Dickinson College, 1989; MBA, Lehigh University, 1992; MS, University of Pennsylvania, 1999; PhD, 2006.

**Pickus, Keith,** Vice President for Corporate and Foundation Relations and Professor, History (1995). BA, University of Washington, 1983; MA, 1988; PhD, 1993.

**Pile, Debra E.,** Assistant Professor and Coordinator of Accelerated BSN program, School of Nursing (2011). BSN, Wichita State University, 1999, MSN, 2004.

**Pitetti, Kenneth H.,** Professor, Physical Therapy (1987). BS, University of San Francisco 1968; MS, Ft. Hays State University, 1980; PhD, University of Texas Health Science Center Dallas, 1986.

**Porter, Stephen,** Associate Professor, Chairperson, and Moore Faculty Fellow in Business, Marketing (1995). BS, Friends University, 1976; MBA, Wichita State University, 1982; PhD, Oklahoma State University, 1994.

**Price, Jay M.,** Professor and Chairperson, History (1999). BA, University of Mexico, 1991; MA, College of William and Mary, 1992; PhD, Arizona State University, 1997.

**Pulaski, Jeffrey,** Associate Professor, School of Art, Design and Creative Industries (2010). BFA, Wichita State University, 1990; MFA, Kansas State University, 2008.

**Quirin, Jeffrey J.,** Professor and Barton Distinguished Chair in Business, School of Accountancy (2000). BS, Pittsburg State University, 1994; MBA, 1995; PhD, University of Nebraska-Lincoln, 1998.

**Rahman, Muhammad M.,** Professor, Chairperson and Sam Bloomfield Chair, Mechanical Engineering (2015). BS, Bangladesh University of Engineering and Technology, 1980; MS, University of Manitoba, 1983; PhD, University of California-Berkeley, 1988.

**Rai, Atul,** Associate Professor and Jones Faculty Fellow in Corporate Governance, School of Accountancy (2007). BTech, Indian Institute of Technology, 1981; MBA, Indian Institute of Management, 1983; PhD, New York University, 1996.

**Ray, Jennifer M,** Assistant Professor, School of Art, Design and Creative Industries (2015). BA, Oberlin College, 2007; MFA Columbia College Chicago, 2012.

**Reding, Kurt,** Clinical Assistant Professor and Grant Thornton Faculty Fellow, School of Accountancy (2008). BS, Trinity Christian College, 1977; MS, Northern Illinois University, 1979; PhD, The University of Tennessee, 1988.

**Rife, Aaron T.,** Assistant Professor, Curriculum and Instruction (2015). BA, Brigham Young University, 2002; MS, University of Kansas, 2008; PhD, 2014.

**Rimmington, Glyn M.,** Professor of Global Learning, Fairmount College of Liberal Arts and Sciences (2001). BS, University of Queensland, 1980; PhD, 1986.

**Rogers, Christopher M.,** Professor, Biological Sciences (2000). BS, University of Wisconsin-Milwaukee, 1978; MS, Michigan State University, 1982; PhD, Indiana University-Bloomington, 1988.

**Rogers, Michael E.,** Professor, Graduate Coordinator, and Chairperson, Human Performance Studies, and Research Director, Center for Physical Activity and Aging (1998). BS, Mount Union College, 1991; PhD, Kent State University, 1996.

**Rogers, Nicole,** Associate Professor, and Director of Graduate Programs, Public Health (2007). BS, Mount Union College, 1992; MA, Kent State University, 1994; MEd, University of Texas at Austin, 1999; PhD, Wichita State University, 2003.

**Roush, Dean,** Professor, School of Music (1988). BFA, Ohio University, 1973; MM, Bowling Green State University, 1975; DMA, Ohio State University, 1985.

**Roussel, Brigitte,** Associate Professor, Modern and Classical Languages and Literatures, and Director, Foreign Language Teacher Education (1990). BA, University of La Sorbonne, 1976; MA, 1981; PhD, University of Kansas, 1991.

**Russell, F. Leland,** Associate Professor and Graduate Coordinator, Biological Sciences (2005). BA, Carleton College, 1992; PhD, University of Texas at Austin, 1999.

**Saeed, Khawaja,** Associate Dean of Graduate Studies in Business, Barton School of Business, and Professor, Finance, Real Estate, and Decisions Sciences (2004). MBA, Punjab College of Business Administration, 1993; MBA, Asian Institute of Technology, 1995; PhD, University of South Carolina, 2004.

**Saenz Rico, Humberto,** Assistant Professor, School of Art, Design and Creative Industries (2011). BA, Baylor University, 2004; MA, University of Dallas-Irving, 2006; MFA, 2008.

**Salari, Ehsan,** Assistant Professor, Industrial & Manufacturing Engineering (2013). BS, Amirkabir University of Technology-Tehran, 2003; MS, Sharif University of Technology-Tehran, 2005; PhD, University of Florida-Gainesville, 2011.

**Salinas Monroy, Sergio,** Assistant Professor, Electrical Engineering and Computer Science (2015). PhD, Mississippi State University, 2015.

**Sasanfar, Justine K.,** Assistant Professor, School of Music (2015). BM, St. Olaf College, 2001; MM, Michigan State University, 2009; MM 2009; PhD, The Florida State University, 2012.

**Sayman, Donna,** Assistant Professor, Curriculum and Instruction and Graduate Coordinator, Special Education (2010). BA, Southwestern Assemblies of God College, 1991; MS, Oklahoma State University, 2003; PhD, 2009.

**Schneegurt, Mark A.,** Professor, Biological Sciences (2000). BS, Rensselaer Polytechnic Institute, 1984; MS, 1985; PhD, Brown University, 1989.

**Scholl, Gerald,** Associate Professor, School of Music (2008). BM, Boston University School of Fine Arts, 1984; MM New England Conservatory of Music, 1992.

**Schommer-Aikins, Marlene A.,** Professor, Counseling, Educational Leadership, Educational and School Psychology, and Graduate Coordinator, Educational Psychology program (1990). BS, University of Wisconsin, 1978; MS, 1984; PhD, University of Illinois-Urbana-Champaign, 1989.

**Shaw, Carolyn M.,** Professor and Chairperson, Political Science (2001). BA, Dickinson College, 1991; PhD, University of Texas-Austin, 2000.

**Showstack, Rachel,** Assistant Professor, Modern and Classical Languages and Literatures (2013). BA, University of California-Santa Cruz, 1001; MA, Sacramento State University, 2006; PhD, University of Texas-Austin, 2013.

**Shuai, Bin,** Associate Professor, Biological Sciences (2005). BS, Nanjing University, 1993; MS, 1996; PhD, University of California-Riverside, 2003.

**Shukaev, Leonid,** Assistant Professor, School of Music (2011). BM, St. Petersburg Conservatory, 1984; MM-PhD, 1989.

**Shvartsburg, Alexandre A.,** Assistant Professor, Chemistry (2014). MS, University of Nevada, 1995; PhD, Northwestern University, 1999.

**Sinha, Kaushik,** Assistant Professor, Electrical Engineering and Computer Science (2013). BT, National Institute of Technology-Warangal, India, 1997; MT, Indian Institute of Technology, 2002; MS, Ohio State University, 2009; PhD, 2010.

**Smith, Barbara,** Professor, Physical Therapy (1985). BS, University of Wisconsin-Madison, 1966; MS, 1981; PhD, 1985.

**Smith, Martha,** Associate Professor, School of Community Affairs, Criminal Justice program (2002). AB, Brown University, 1978; JD, New York University, 1981; MA, Rutgers University, 1995; PhD, 1996.

**Smith, Nicholas E.,** Professor, School of Music (1975). BM, Pittsburg State University, 1970; MM, Eastman School of Music, 1972; DMA, 1980.

**Smith, Royce,** Associate Professor and Director, School of Art, Design and Creative Industries (2005). AB, Wabash College, 1996; MA, University of Queensland, 1999; MA, Purdue University, 2000; PhD, University of Queensland, 2004.

**Snyder, Nancy McCarthy,** Associate Professor and Director, Hugo Wall School of Public Affairs (1977). AB, Clarke College, 1970; MS, Southern Illinois University, 1973; PhD, 1977.

**Soles, David E.,** Professor and Chairperson, Philosophy; Director, Master of Arts in Liberal Studies program (1974, 1982). BA, University of Pittsburgh, 1969; PhD, Johns Hopkins University, 1977.

**Soles, Deborah H.,** Professor, Philosophy (1973, 1975). BA, George Washington University, 1969; MA, Johns Hopkins University, 1973; PhD, 1975.

**Song, Yi,** Assistant Professor, Electrical Engineering and Computer Science (2013). BS, Wuhan University-China, 2006; Tongji University-Shanghai, 2008; PhD, University of North Carolina-Charlotte, 2013.

**Srithongrung, Arwiphawee,** Associate Professor, Hugo Wall School of Public Affairs and Center for Urban Studies (2013). BS, Kasetsart University-Bangkok, 1994; MPA, University of Missouri-Kansas City, 1996; DPA, University of Illinois-Springfield, 2006.

**Sternfeld-Dunn, Aleksander,** Associate Professor, Graduate Coordinator, and Associate Director, School of Music (2012). BA, California State University, East Bay, 2003; MA, Washington State University, 2006; DMA, University of Hartford, 2009.

**Stoldt, G. Clayton,** Associate Dean, College of Education, and Professor, Sport Management (1998). BA, University of Oklahoma, 1984; MS, 1990; DEd, 1998.

**Stone, Jennifer P.,** Assistant Professor, Curriculum and Instruction (2015). BA, Trinity University, 1997; MAT, 1998; MEd, 2008; PhD, University of Texas-San Antonio, 2013.

**Sulyok, Levente,** Associate Professor, School of Art, Design and Creative Industries (2007). BA, University of California at Berkeley, 2003; MFA, Rhode Island School of Design, 2006.

**Suss, Joel M.,** Assistant Professor, Psychology (2015). PhD, Michigan Technological University, 2013.

**Suzuki, Yumi,** Assistant Professor, School of Community Affairs (2014). BA, Southern Oregon University, 1994; MA, Southern Illinois University, 2001; PhD, State University of New York-Albany; 2011.

**Swindle, Andrew,** Assistant Professor, Geology (2014). BS, Oklahoma State University, 1999; MS, 2003; PhD, University of Oklahoma, 2013.

**Tartaroglu, Semih,** Associate Professor, Finance, Real Estate, and Decision Sciences (2008). BS, Bilkent University, 1998; MS, Texas A&M University, 2002; PhD, 2008.

**Taylor, Samuel B.,** Assistant Professor, English (2011). BA, Swarthmore College, 1997; MFA, University of Texas-Austin, 2002; MFA, University of Virginia-Charlottesville, 2010.

**Taylor, Sarah R.,** Assistant Professor, Anthropology (2013). BA, California State University-Chico, 2006; MA, California State University-Long Beach, 2008; PhD, State University of New York-Albany, 2012.

**Thompson, Johnnie,** Associate Professor, Curriculum and Instruction (1993). BS, University of Kansas, 1968; MS, Central Missouri State University, 1975; EdD, Kansas State University, 1992.

**Thrane, Lisa,** Associate Professor, Sociology (2009). BA, Simpson College, 1995; MS, Iowa State University, 1999; PhD, 2003.

**Tiernan, Jennifer M.,** Assistant Professor, Elliott School of Communication (2013). BA, Eugene Lang College, 1993; MA, University of Wyoming-Laramie, 1998; PhD, University of Iowa, 2002.

**Torbenson, Craig L.,** Associate Professor, History (1989). BS, Brigham Young University, 1982; MA, 1985; PhD, University of Oklahoma, 1992.

**Tran, Anh,** Associate Professor, Curriculum and Instruction (2003). BA, Saigon University, 1973; MA, Wichita State University, 1993; PhD, Kansas State University, 2002.

**Trechak, Andrew,** Jr., Associate Professor, School of Music (1980). BM, Oberlin Conservatory, 1973; MM, State University of New York-Stony Brook, 1975; DMA, University of Texas-Austin, 1988.

**Unruh, Susan,** Assistant Professor, Counseling, Educational Leadership, Educational and School Psychology (2010). BA, Bethel College, 1975; MEd, University of Kansas, 1980; PhD, 2007; EdS, Wichita State University, 1991.

**Vermillion, Mark C.,** Associate Professor and Chairperson, Sport Management (2006). BS, Kansas State University, 2000; MA, Wichita State University, 2003; PhD, Oklahoma State University, 2006.

**Vizzini, Anthony J.,** Provost and Senior Vice President, Division of Academic Affairs; Professor, Aerospace

Engineering (2013). SB, Massachusetts Institute of Technology, 1981; SB, 1982; SM, 1983; PhD, 1986.

**Walker, Melissa,** Associate Professor, Hugo Wall School of Public Affairs and Center for Urban Studies (2006). BA, Northwestern University, 1976; MPA, Harvard University, 1992; PhD, University of Chicago, 2005.

**Wang, Pu,** Assistant Professor, Electrical Engineering and Computer Sciences (2013). BE, Beijing Institute of Technology, 2003; ME, Memorial University of Newfoundland, 2008; PhD, Georgia Institute of Technology, 2013

**Waters, Mary Ann,** Hughes Distinguished Professor and Chairperson, English (2004). BA, Millersville University of Pennsylvania, 1979; MA, San Francisco State University, 1994; PhD, University of California, Davis, 2001.

**Weems, Robert E.,** Garvey Distinguished Professor of Business History, History (2011). BA, Western Illinois University, 1973; MA, Boston University, 1975; MA, University of Wisconsin-Milwaukee, 1982; PhD, University of Wisconsin-Madison, 1987.

**Widener, Russell D.,** Professor and Director, School of Music (1981). BM, Baylor University, 1968; MM, Catholic University, 1972.

**Wilks, Kerry K.,** Interim Dean of the Graduate School and Associate Professor, Modern and Classical Languages and Literatures (2004). BA, Rhodes College, 1991; MA, Auburn University, 1996; PhD, University of Chicago, 2004.

**Wilson, Camilla,** Associate Professor and Graduate Coordinator, Physical Therapy (2003). BS, University of Kansas, 1970; MS, 1979; PhD, 1992.

**Wine, Thomas R.,** Professor and Program Director of Music Education, School of Music (1995). BAME, Alderson-Broadduds College, Philippines, 1980; MME, Duquesne University, 1982; PhD, Florida State University, 1994.

**Wolff, James A.,** Professor, Management (1994). BS, University of Idaho, 1972; MBA, Washington State University, 1990; PhD, 1995.

**Woods, Nicole C.,** Assistant Professor, Public Health Sciences (2013). BS, Wichita State University, 2007; MA, University of Kansas, 2009; MPH, University of Kansas, 2010; PhD, 2011.

**Wright, David W.,** Associate Vice President for Academic Data Systems and Chief Data Officer, Division of Academic Affairs; Professor, Sociology, (1993). BA, Indiana University-Purdue University at Indianapolis, 1987; MA, Purdue University, 1989; PhD, 1992.

**Xu, David Jingjun,** Assistant Professor, Finance Real Estate and Decision Sciences (2013). BS, Lingnan University-Hong Kong, 2002; MS, City University of Hong Kong, 2005; PhD, University of British Columbia, 2011.

**Yao, Li,** Assistant Professor, Biological Sciences (2011). BS, Capital Medical University-Beijing; MS, Beijing Institute of Traumatology and Orthopaedic Surgery, 2000; PhD, University of Aberdeen-UK, 2005.

**Yeager, Samuel J. III,** Professor, Hugo Wall School of Public Affairs and Center for Urban Studies, and Graduate Coordinator, Public Administration (1976). BA, University of Massachusetts, 1967; MLS, George Peabody College, 1968; MS, Troy State University, 1971; MPA, Auburn University, 1972; DPA, University of Georgia, 1976.

**Yu, Szde D.,** Assistant Professor, School of Community Affairs (2015). BS, Tunghai University-Taiwan, 2001; MS, University of Missouri-Kansas City, 2005; PhD, Indiana University of Pennsylvania, 2010.

## GF-2 Membership Status

(See "Graduate Faculty" on page 12 for definitions of GF-1 and GF-2 membership status.)

**Abaya, Joel,** Assistant Professor, Counseling, Educational Leadership, Educational and School Psychology (2012). BEd, University of Nairobi 1993; MEd, University of New Brunswick-Fredericton, 2002; PhD, University of Missouri-Columbia, 2011.

**Aravinthan, Visvakumar,** Assistant Professor, Electrical Engineering and Computer Science (2011). BS, University of Moratuwa-Sri Lanka, 2002; MS, 2005; MS, Wichita State University, 2006; PhD, 2010.

**Asaduzzaman, Abu,** Assistant Professor, Electrical Engineering and Computer Science (2010). BS, Bangladesh University of Engineering and Technology, (1993); MS, Florida Atlantic University, 1997; PhD, 2009.

**Askari, Davood,** Assistant Professor, Mechanical Engineering (2013). BS, Sharif University of Technology-Tehran, 1997; MS, Eastern Mediterranean University, 2002; PhD, University of Hawaii-Manoa, 2009.

**Asmatulu, Ramazan,** Associate Professor, Mechanical Engineering (2006). BS, Istanbul Technical University, 1992; MS, 1995; PhD, Virginia Polytechnic Institute and State University, 2001.

**Bagai, Rajiv,** Associate Professor and Graduate Coordinator for the PhD program, Electrical Engineering and Computer Science (1990). MS, Birla Institute of Technology and Science, 1983; MS, University of Victoria, 1987; PhD, 1990.

**Bann, James Gerald,** Associate Professor, Chemistry (2004). BS, Fort Lewis College, 1993; PhD, Oregon Health Science University, 2000.

**Beck, Moriah R.,** Assistant Professor, Chemistry (2011). BS, Eastern Kentucky University, 1999; PhD, Washington University, 2007.

**Behrman, Elizabeth,** Professor, Mathematics, Statistics, and Physics (1990). ScB, Brown University, 1979; MS, University of Illinois, 1981; PhD, 1985.

**Bukhgeym, Alexander,** Professor, Mathematics, Statistics, and Physics (2002). MS, Novosibirsk State University, 1971; PhD, Russian Academy of Sciences, 1984.

**Burdsal, Charles A.,** Jr., Professor, Psychology, and Director of the Social Science Research Laboratory (1970, 1972). BA, Texas Tech University, 1966; PhD, 1971.

**Burns, Dennis H.,** Professor and Graduate Coordinator, Chemistry (1989). BS, University of California-Los Angeles, 1981; PhD, University of California-Davis, 1986.

**Buyuktahtakin, Ismet Esra,** Assistant Professor, Industrial and Manufacturing Engineering (2011). BS, Faith University, 2002; MS, Bilkent University, 2005; MS Lehigh University, 2007; PhD University of Florida, 2009.

**Chakravarthy, Animesh,** Assistant Professor, Aerospace Engineering, and Electrical Engineering and Computer Science (2011). BS, Bangalore University-India, 1990; MS, Indian Institute of Science, 1994; PhD, Massachusetts Institute of Technology, 2007.

**Chaparro, Alex,** Cassat Professor in Aging and Regional Institute on Aging Director, Psychology (1996). BS, Florida Institute of Technology, Melbourne, 1984; PhD, Texas Tech University, 1990.

**Chaparro, Barbara,** Associate Professor, Psychology (1998). BS, University of Richmond, Virginia, 1985; PhD, Texas Tech University, 1990.

**Chopra, Dharam V.,** Professor, Mathematics, Statistics, and Physics (1967). BA, Punjab University, India, 1950; MA, 1953; MA, University of Michigan, 1961; AM, 1963; PhD, University of Nebraska, 1968.

**Cohen, Peter A.,** Professor, Psychology and Public Health Sciences, and Director, WSU Leadership Academy (1999). AB, University of California-Berkeley, 1973; MA, San Diego State University, 1976; PhD, University of Michigan, 1980.

**Coufal, Kathy L.,** Professor, Communication Sciences and Disorders (2006). BS, University of Nebraska-Lincoln, 1972; MS, 1973; PhD, 1989.

**DeLillo, Thomas K.,** Professor and Interim Chairperson, Mathematics, Statistics, and Physics, (1988). BA, Upsala College, 1973; PhD, New York University, 1985.

**DiLollo, Anthony,** Associate Professor, and PhD program Graduate Coordinator, Communication Sciences and Disorders (2003). BS, University of Western Australia, 1986; MS, University of Mississippi, 1996; PhD, University of Memphis, 2001.

**Ding, Yanwu,** Associate Professor and Graduate Coordinator for Electrical Engineering; Electrical Engineering and Computer Science (2008). BE, Southwest Jiaotong University, 1985; MS, Northern Jiaotong University, 1989; MS, McMaster University, 2001; PhD, 2007.

**Dorr, Darwin,** Professor, Psychology (1993). BA, Alfred University, 1962; MA, 1965; PhD, Florida State University, 1969.

**Driessen, Brian J.,** Associate Professor, Mechanical Engineering (2004). BS, Louisiana Technical University, 1991; MS, Georgia Institute of Technology, 1993; PhD, 1996.

**Eichhorn, David,** Professor and Chairperson, Chemistry (1996). AB, Harvard University, Cambridge, 1986; PhD, University of California, Berkeley, 1992.

**Elder, Betty,** Associate Professor, Nursing (2003). BA, Wichita State University, 1974; BSN, University of Missouri-KC, 1999; MS, University of Nebraska-Omaha, 2001.

**English, Douglas S.,** Associate Professor, Chemistry (2008). BS, University of Missouri at Kansas City, 1993; PhD, Iowa State University, 1998.

**Ferguson, Jason W.,** Professor, and Help Lab Coordinator, Mathematics, Statistics, and Physics (2000). BS, Wichita State University, 1990; MS, 1992; PhD, University of Kentucky, 1997.

**Freeman, Eric,** Assistant Professor, Counseling, Educational Leadership, Educational and School Psychology, (2011). MEd, North Carolina State University, 1994; PhD, 1999.

**Fridman, Buma L.,** Professor, Department of Mathematics, Statistics and Physics (1982). MS, Moscow State University, USSR, 1969; PhD, Leningrad Pedagogical Institute, USSR, 1973.

**Groutas, William G.,** WSU Foundation Distinguished Professor, Chemistry (1980). BS, American University of Beirut, 1969; PhD, University of Kentucky, 1973.

**Gupta, Deepak P.,** Associate Professor, Industrial and Manufacturing Engineering; Director, Engineering Technology Program (2014). BS, Indian Institute

of Technology, 2000; MS, West Virginia University-Morgantown, 2005; PhD, 2007.

**Hodson, Barbara,** Professor, Communication Sciences and Disorders (1989). BS, University of Illinois, 1958; MS, 1960; PhD, 1975.

**Hoffmann, Klaus A.,** Marvin J. Gordon Distinguished Professor, and Graduate Coordinator of the PhD program, Aerospace Engineering (1990). BS, University of Texas at Austin, 1972; MS, 1975; PhD, 1983.

**Hu, Xiaomi,** Professor, Mathematics, Statistics, and Physics (1994). BS, Jiangxi Polytechnic University, China, 1982; PhD, University of Missouri-Columbia, 1993.

**Huckstadt, Alicia A.,** Director, Doctor of Nursing Practice program, Professor, and Graduate Coordinator, , School of Nursing (1975). BSN, Wichita State University, 1975; MN, 1978; PhD, Kansas State University, 1981; PhD, University of Colorado, 1990.

**Hull, Raymond H.,** Professor, Communication Sciences and Disorders, and Graduate Coordinator, Audiology (1993). BA, McPherson College, 1964; MA, University of South Dakota, 1965; PhD, University of Denver, 1972.

**Huprich, Steven K.,** Professor and Director of Clinical Training, Psychology (2014). BA, Taylor University, 1988; MA, University of Dayton, 1994; PhD, University of North Carolina-Greensboro, 1999.

**Hwang, Gi Suk,** Assistant Professor, Mechanical Engineering (2013). BE, Handong Global University-Korea, 2002; MS, University of Michigan-Ann Arbor, 2006; PhD, 2010.

**Isakov, Victor,** Emylou Keith and Betty Dutcher Faculty of Distinction Endowed Professor, Mathematics, Statistics, and Physics (1988). MS, Novusibitsk State University, USSR, 1971; PhD, Institute of Mathematics, USSR, 1973.

**Jadliwala, Murtuza,** Assistant Professor, Electrical Engineering and Computer Science (2012). BE, Mumbai University, 2000; MS, State University of New York-Buffalo, 2004; PhD, 2008.

**Jeffres, Thalia D.,** Associate Professor, Mathematics, Statistics, and Physics (2004). BA, Johns Hopkins University, 1985; MA, Dartmouth, 1987; PhD, SYUNY at Stoneybrook, 1996.

**Jewell, Ward T.,** Professor, Electrical Engineering and Computer Science (1987). BSEE, Oklahoma State University, 1979; MSEE, Michigan State University, 1980; PhD, Oklahoma State University, 1986.

**Jorgensen, Michael J.,** Associate Professor and Chairperson, Biomedical Engineering (2001). BS, University of Nebraska, 1986; MS, 1989; PhD, Ohio State University, 2000.

**Kagdi, Huzefa H.,** Assistant Professor, Electrical Engineering and Computer Science (2011). BE, Birla Vishwakarma Mahavidyala-India, 1998; MS, Kent State University, 2003; PhD, 2008.

**Keshavanarayana, Suresh Raju,** Associate Professor, Aerospace Engineering (1995). BS, Bangalore University, India, 1992; MS, Wichita State University, 1997; PhD, 2001.

**Krishnan, Krishna,** Professor and Chairperson, Industrial and Manufacturing Engineering (1996). Kerala University, India, 1994; MS, Virginia Polytechnic Institute and State University, 1991; PhD, 1994.

**Kumar, Preethika,** Associate Professor, Electrical Engineering and Computer Science (2007). BS, Bangalore University, 2000; MS, Wichita State University, 2004; PhD, 2007.

**Kwon, Hyuck M.,** Professor, Electrical Engineering and Computer Science (1993). BSEE, Seoul National University, Korea, 1978; MSEE, 1980; PhD, University of Michigan, 1984.

**Lancaster, Kirk E.,** Professor , Mathematics, Statistics, and Physics and Graduate Coordinator, Mathematics (1980). AB, Humboldt State University, 1975; PhD, Oregon State University, 1981.

**Lankarani, Hamid M.,** Professor, Mechanical Engineering (1989). BSME, University of Iowa, 1981; MSME, 1983; PhD, University of Arizona, 1988.

**Lewis, Rhonda K.,** Chairperson and Professor, Psychology (1996). BA, Wichita State University, 1991; MA, University of Kansas, 1993; MPH, 1996; PhD, 1996.

**Li, Bin,** Assistant Professor, Mechanical Engineering (2013). BE, Sichuan University, 2005; ME, 2008; PhD, Washington State University-Pullman, 2012.

**Lu, Tianshi,** Associate Professor, Mathematics, Statistics, and Physics (2008). BS, Fudan University, 1997; MS, New York University, 1999; MA, University of Wisconsin-Madison, 2001; PhD, Stony Brook University, 2005.

**Ma, Chunsheng,** Professor, Mathematics, Statistics, and Physics (1999). BS, Wuhan Teachers College at Xiaogang, China, 1981; MS, Wuhan University, China, 1988; PhD, University of Sydney, Australia, 1997.

**Ma, Daowei,** Professor, Mathematics, Statistics, and Physics (1993). MS, Wuhan University, China, 1982; PhD, Washington University-St. Louis, 1990.

**Madhavan, Viswanatha,** Professor, Industrial and Manufacturing Engineering (1996). BTech, Indian Institute of Technology, Madras, India, 1991; MS, Purdue University, 1993; PhD, 1996.

**Mahapatro, Anil,** Assistant Professor, Department of Biomedical Engineering (2011). BE, Maharashtra Institute of Technology-India, 1996; MS, University of Manchester-England, 1997; PhD, New York University, 2004.

**Malzahn, Don E.,** Professor, Industrial and Manufacturing Engineering (1973). BS, Oklahoma State University, 1968; MS, 1969; PhD, 1975.

**Masud, Abu S.M.,** Professor, Industrial and Manufacturing Engineering (1980). BS, Bangladesh University of Engineering and Technology, 1969; Diploma Institute of Business Administration, 1973; MSIE, Kansas State University, 1975; PhDIE, 1978.

**Medvene, Louis J.,** Professor, Psychology (1992). BA, Clark University, 1967; MA, University of Rochester, 1971; MS, Columbia University, 1976; PhD, 1983.

**Meissen, Gregory J.,** Professor, Psychology (1980). BA, Wichita State University, 1977; PhD, University of Tennessee, 1980.

**Meyer, Holger,** Associate Professor, Mathematics, Statistics, and Physics and Director of Physics (2009). Vordiplom, Technische Universitat Braunschweig, 1994; MS, Virginia Polytechnic Institute and State University, 1997; PhD, 2002.

**Miller, Kenneth G.,** Professor, Mathematics, Statistics, and Physics (1981). BA, Macalester College, 1969; MS, University of Chicago, 1970; PhD, 1975.

**Mosack, Victoria A.,** Associate Professor and Chairperson, School of Nursing (2006). BSN, Wichita State University, 1980; MSN, 1992, PhD, 2006.

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**Myose, Roy Y.,** Professor, Aerospace Engineering (1992). BSAE, University of Southern California, 1983; MS, California Institute of Technology, 1984; PhD, University of Southern California, 1991.

**Namboodiri, Vinod,** Associate Professor and Graduate Coordinator, Computer Networking and Computer Science; Electrical Engineering and Computer Science (2008). BE, Gujarat University, 2000; MS, University of North Carolina, Charlotte, 2003; PhD, University of Massachusetts, Amherst, 2008.

**Ni, Rui,** Associate Professor, Psychology (2008). BS, Beijing Normal University, 1996; PhD, Chinese Academy of Sciences, 2001.

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**Papadakis, Michael,** Professor, Aerospace Engineering (1986). BTech, Loughborough University, England, 1979; MS, 1981; PhD, Wichita State University, 1986.

**Parham, Douglas,** Associate Professor, Communication Sciences and Disorders (2008). BA, Memphis State University, 1992; MA, University of Memphis, 1996; PhD, 2008.

**Patterson, Jean,** Professor, , Counseling, Educational Leadership, Educational and School Psychology, and , EdD program Graduate Coordinator (1999). BS, Florida State University, 1976; MA, Ball State University, 1981; EdD, University of North Carolina-Chapel Hill, 1997

**Ramanan, Prakash,** Professor, Electrical Engineering and Computer Science (1991). BE, Birla Institute of Technology and Science, 1980; PhD, University of Illinois-Urbana, 1984.

**Ravigururajan, Tiruvadi S.,** Professor and Graduate Coordinator, Mechanical Engineering (1991). BE, University of Madras, 1978; ME, Howard University, 1981; PhD, Iowa State University, 1986. Licensed Professional Engineer-Iowa.

**Rillema, D. Paul,** Professor, Chemistry (1994). AB, Hope College, 1965; PhD, Michigan State University, 1969.

**Rokhsaz, Kamran,** Professor and Graduate Coordinator, MS program, Aerospace Engineering (1991). BS, University of Missouri-Rolla, 1978; MS, 1980; PhD, 1988.

**Scherz, Julie,** Associate Professor and Chairperson, Communication Sciences and Disorders (1998). BA, Wichita State University, 1969; MA, 1971; PhD, 1989.

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**Self, Patricia L.,** Associate Professor, Communication Sciences and Disorders (1994). BA, Wichita State University, 1984; MA, 1985; PhD, 1991.

**Skinner, Steven R.,** Associate Dean for Undergraduate Studies, Finance, and Administration, College of Engineering, and Professor, Electrical Engineering and Computer Science (1991). BS, University of Iowa, 1985; MS, 1988; PhD, 1991.

**Snyder, James J.,** Professor, Psychology (1977). BA, Loras College, 1968; MA, Southern Illinois University, 1974; PhD, 1977.

**Solomey, Nickolas,** Professor, Mathematics, Statistics, and Physics, Director, Physics (2007). BS, Mount Union College, 1983; MS, The Ohio State University, 1987; PhD, University of Geneva, 1992.

**Steck, James E.,** Professor, Aerospace Engineering (1990). BS, University of Missouri at Rolla, 1980; MS, 1984; PhD, 1989.

**Steinke, Elaine,** Professor, School of Nursing (1990). BSN, Wichita State University, 1979; MN, 1982; PhD, Kansas State University, 1987.

**Strattman, Katherine H.,** Associate Professor, Communication Sciences and Disorders (1985). BA, Midland Lutheran College, 1970; MA, Wichita State University, 1971; PhD, 2001.

**Sun, Xiao-Ming,** Associate Professor, Communication Sciences and Disorders (2004). Md, Hunan College of Chinese Medicine, 1987; MA, University of Connecticut, 1996; PhD, 1998.

**Sun, Ziqi,** Professor, Mathematics, Statistics, and Physics (1990). BS, Chinese University of Science and Technology, 1982; MA, University of California-Los Angeles, 1985; PhD, 1987.

**Tomblin, John S.,** Vice President, Research and Technology Transfer, Executive Director, NIAR, Bloomfield Chair and Professor, Aerospace Engineering (1994). BSAE, West Virginia University, 1990; MSME, 1991; PhD, 1994.

**Twomey, Janet,** Associate Dean for Graduate Studies, Research and Faculty Success, and Professor, Industrial and Manufacturing Engineering (1994). BA, University of Pittsburgh, 1990; MS, 1992; PhD, 1995.

**Walsh, Mark G.,** Assistant Professor, Mathematics, Statistics and Physics (2013). Higher Diploma, National University of Ireland, 2000; MS, 2002; PhD, University of Oregon, 2009.

**Wang, Pingfeng,** Associate Professor, Industrial and Manufacturing Engineering (2010). BE, University of Science and Technology, 2001; MS, Tsinghua University, 2006; PhD, University of Maryland, 2010.

**Watkins, John M.,** Professor and Chairperson, Electrical Engineering and Computer Science (2004). BS, University of Nebraska-Lincoln, 1989; MS, The Ohio State University, 1991; PhD, 1995.

**Weheba, Gamal S.,** Professor, Industrial and Manufacturing Engineering (2000). BS, Menoufia University, 1981; MS, 1987; PhD, University of Central Florida, 1996.

**Wimalasena, Kandatege,** Professor, Chemistry (1989). BS, University of Peradeniya, Sri Lanka, 1977; PhD, Georgia Institute of Technology, 1986.

**Yang, C. Charles,** Professor, Aerospace Engineering (1997). BS, National Taiwan University, 1985; MS 1987; PhD, Louisiana State University, 1993. Licensed Professional Engineer-Louisiana.

**Yildirim, Mehmet Bayram,** Professor and Graduate Coordinator, Industrial and Manufacturing Engineering (2002). BS, Bogazici University, 1994; MS, Bilkent University, 1996; PhD, University of Florida, 2001.

**Zettle, Robert,** Professor and Graduate Coordinator, Psychology (1984). BA, Wilkes College, 1974; MA, Bucknell University, 1976; PhD, University of North Carolina-Greensboro, 1984.

# Key to Abbreviations and Symbols

## Symbols

When two course numbers are joined by a hyphen (-), the first semester is prerequisite to the second; when the numbers have an ampersand (&) between them, the two semesters may be taken in either order. Unless specifically noted otherwise, the first course listed is offered in the fall semester and the second in the spring.

The number of hours of credit for each course is indicated in parentheses following the course title. The number of class meetings per week is normally the same as the number of credit hours. Two hours of laboratory work usually are required for 1 hour of credit. In courses involving meetings other than lectures, the following symbols are used: R, lecture; L, laboratory; C, conference; D, demonstration; and P, practicum/clinical, with the hours of practicum/clinical per week given in front of the letter (6-8P means six to eight hours of practicum/clinical per week).

## Abbreviations

The following abbreviations of academic departments and subject areas are used in references to courses offered by those departments.

| | |
|---|---|
| ACCT | *Accounting* |
| AE | *Aerospace Engineering* |
| AGE | *Aging Studies* |
| ANTH | *Anthropology* |
| ARAB | *Arabic* |
| ARTE | *Art Education* |
| ARTF | *Art and Design Foundation* |
| ARTG | *Graphic Design* |
| ARTH | *Art History* |
| ARTS | *Studio Arts* |
| BADM | *General Business Administration* |
| BIOL | *Biological Sciences* |
| BLAW | *Business Law* |
| BME | *Biomedical Engineering* |
| CESP | *Counseling, Educational and School Psychology* |
| CHEM | *Chemistry* |
| CHIN | *Chinese* |
| CI | *Curriculum and Instruction* |
| CJ | *Criminal Justice* |
| CLES | *Counseling, Educational Leadership, Educational and School Psychology* |
| COMM | *Communication* |
| CS | *Computer Science* |
| CSD | *Communication Sciences and Disorders* |
| DANC | *Dance* |
| DH | *Dental Hygiene* |
| DS | *Decision Sciences* |
| ECON | *Economics* |
| EE | *Electrical Engineering* |
| EEPS | *Earth, Environmental and Physical Sciences* |
| EL | *Educational Leadership* |
| EMBA | *Executive Master of Business Administration* |
| ENGL | *English Language and Literature* |
| ENGR | *General Engineering* |
| ENGT | *Engineering Technology* |
| ENTR | *Entrepreneurship* |
| ETHS | *Ethnic Studies* |
| FA | *Fine Arts—General* |
| FIN | *Finance* |
| FREN | *French* |
| FS | *Forensic Science* |
| GEOG | *Geography* |
| GEOL | *Geology* |
| GERM | *German* |
| GREK | *Greek* |
| HIST | *History* |
| HMCD | *Health Services Management and Community Development* |
| HNRS | *Honors Program* |
| HP | *Health Professions—General* |
| HPS | *Human Performance Studies* |
| HRM | *Human Resource Management* |
| HS | *Health Sciences* |
| IB | *International Business* |
| IE | *Intensive English* |
| IIC | *Institute for Interdisciplinary Creativity* |
| IME | *Industrial and Manufacturing Engineering* |
| ITAL | *Italian* |
| JAPN | *Japanese* |
| LASI | *Liberal Arts Interdisciplinary* |
| LATN | *Latin* |
| LING | *Linguistics* |
| MATH | *Mathematics* |
| MBA | *Master of Business Administration* |
| MCLL | *Modern and Classical Languages and Literatures* |
| ME | *Mechanical Engineering* |
| MGMT | *Management* |
| MICT | *Mobile Intensive Care Technician* |
| MIS | *Management Information Systems* |
| MKT | *Marketing* |
| MLS | *Medical Laboratory Sciences* |
| MUSA | *Applied Music* |
| MUSC | *Musicology—Composition* |
| MUSE | *Music Education* |
| MUSP | *Music Performance* |
| NURS | *Nursing* |
| PA | *Physician Assistant* |
| PADM | *Public Administration* |
| PC | *Personal Computing* |
| PHIL | *Philosophy* |
| PHS | *Public Health Sciences* |
| PHYS | *Physics* |
| POLS | *Political Science* |
| PSY | *Psychology* |
| PT | *Physical Therapy* |
| RE | *Real Estate and Land Use Economics* |
| REL | *Religion* |
| RUSS | *Russian* |
| SCWK | *Social Work* |
| SOC | *Sociology* |
| SMGT | *Sport Management* |
| SPAN | *Spanish* |
| STAT | *Statistics* |
| THEA | *Theatre* |
| WOMS | *Women's Studies* |

# Index

## A



## B



## C

## D



## E



## F

## T



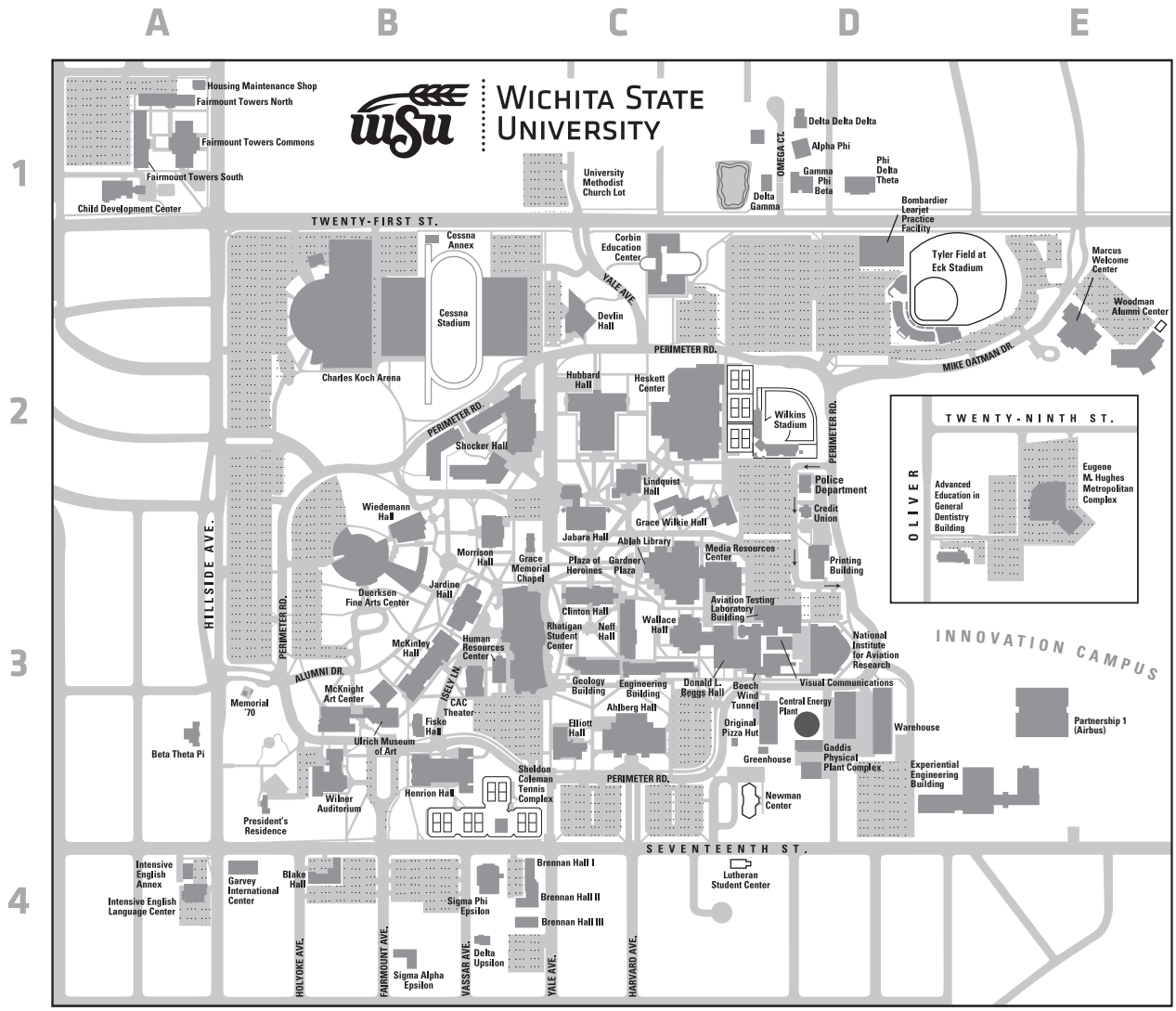
## U



## V



## W




# A-Z BY BUILDING CODE

For buildings not on main campus, consult **wichita.edu/buildingtour**

| | | | | | |
|---|---|---|---|---|---|
| AH -- Ahlberg Hall | C3 | ER -- Donald L. Beggs Hall | C3 | MH -- Morrison Hall | B2 |
| AL -- Ablah Library | C2 | ES -- Eck Stadium | D2 | MK -- McKnight Art Center | B3 |
| AR -- Nat'l Institute for Aviation Research | D3 | FC -- Fairmount Towers | A1 | MR -- Marcus Welcome Center | E2 |
| BA -- Brennan Hall | C4 | FH -- Fiske Hall | B3 | MX -- Hughes Metropltn Complex | inset |
| BH -- Blake Hall | B4 | GE -- Geology Building | C3 | NH -- Neff Hall | C3 |
| BL -- Bombardier Learjet Practice Facility | D1 | GI -- Garvey International Center | A4 | OA/OB/OC -- WSU Old Town | -- |
| BR -- Ninnescah Biological Station | -- | GR -- Grace Memorial Chapel | C2 | PB -- WSU Police Department | D2 |
| CA -- CAC Theater | B3 | GW -- Grace Wilkie Hall | C2 | PR -- President's House | A3 |
| CD -- Child Development Center | A1 | HC -- Heskett Center | C2 | PP -- Printing Building | D3 |
| CE -- Corbin Education Center | C1 | HG -- Henrion Hall | B3 | PZ -- Pizza Hut | D3 |
| CH -- Clinton Hall | C3 | HH -- Hubbard Hall | C2 | RA -- Shocker Hall | B2 |
| CS -- Cessna Stadium | B1 | HR -- Human Resources Center | B3 | RS -- Student Center | C3 |
| CT -- Coleman Tennis Complex | B4 | HT -- Hartman Golf Practice Facility | -- | SC -- WSU South | -- |
| CU -- Campus Credit Union | D2 | JB -- Jabara Hall | C2 | UL -- Ulrich Museum | B3 |
| DA -- Duerksen Fine Arts Center | B3 | JH -- Jardine Hall | B3 | WA -- Wilner Auditorium | B3 |
| DB -- Advanced Ed in General Dentistry | inset | KA -- Charles Koch Arena | B2 | WC -- Woodman Alumni Center | E2 |
| DH -- Devlin Hall | C2 | LA -- Lake Afton Observatory | -- | WH -- Wallace Hall | C3 |
| EB -- Engineering Building | C3 | LH -- Lindquist Hall | C2 | WI -- Wiedemann Hall | B2 |
| EE -- Experiential Engineering Building | E3 | MC -- McKinley Hall | B3 | WL -- Wilkins Stadium | D2 |
| EH -- Elliott Hall | C3 | ME -- Media Resources Center | C3 | WM -- WSU West | -- |