### Graduate Programs • Departmental Admission Requirements

**Graduate School • Wichita State University • 1845 Fairmount • Wichita, Kansas 67260-0004 • (316) 978-3095 • www.twsu.edu/admg**

International applicants living outside the U.S. must meet the Graduate School international application deadlines: fall, April 1; spring, October 1. Some program areas have earlier deadlines.

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<th>Degrees</th>
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<tr>
<td>550 213</td>
<td>Accounting</td>
<td>Master of Professional Accountancy (MPA)</td>
<td>Total of 1,100 points based on the formula of 200 times the overall GPA in last 60 hours plus the GMAT score</td>
</tr>
<tr>
<td>750 213</td>
<td>Aerospace engineering</td>
<td>Master of Science (MS)</td>
<td>GPA 3.0 last 60 hours; undergraduate degree in engineering or related field</td>
</tr>
<tr>
<td>550 213</td>
<td>Anthropology</td>
<td>Doctor of Philosophy (PhD)</td>
<td>GRE (general); master’s degree in engineering or physical science</td>
</tr>
<tr>
<td>550 213</td>
<td>Art education</td>
<td>Master of Arts (MA)</td>
<td>15 hours in anthropology; GPA 3.0 in anthropology courses</td>
</tr>
<tr>
<td>550 213</td>
<td>Art, studio Ceramics Painting, Printmaking, Sculpture</td>
<td>Master of Fine Arts (MFA)</td>
<td>Bachelor’s degree in art education and meet requirements for Kansas state certification in this field; resume, portfolio; examples of scholarly work; GPA 3.0 in art courses; professional goals statement; interview</td>
</tr>
<tr>
<td>550 213</td>
<td>Biology</td>
<td>Master of Science (MS)</td>
<td>GPA 3.0 or higher in all biology courses; 24 semester hours in biology; 15 semester hours in chemistry; 3 reference letters from science faculty</td>
</tr>
<tr>
<td>550 213</td>
<td>Business</td>
<td>Master of Science (MS)</td>
<td>Total of 1,050 points based on the formula of 200 times the overall GPA plus the GMAT score; total of 1,100 points based on 200 times the GPA in last 60 hours plus the GMAT score</td>
</tr>
<tr>
<td>550 213</td>
<td>Business administration</td>
<td>Master of Business Administration (MBA)</td>
<td>Total of 1,050 points based on the formula of 200 times the overall GPA plus the GMAT score; total of 1,100 points based on 200 times the GPA in last 60 hours plus the GMAT score; application deadlines: last Monday in July for fall, first Monday in December for spring</td>
</tr>
<tr>
<td>570 230</td>
<td>Chemistry</td>
<td>Master of Science (MS)</td>
<td>BS Chemistry (ACS certified or equivalent); GPA 3.0 (overall and chemistry); 2 reference letters; statement of goals and research interests; GRE (general and chemistry); application deadlines: second Monday in November for spring, second Monday in April for fall</td>
</tr>
<tr>
<td>600 250</td>
<td>Communication Communication Theatre/Drama</td>
<td>Master of Arts (MA)</td>
<td>GRE (general); statement of purpose; 3.0 GPA over last 60 hours</td>
</tr>
<tr>
<td>550 213</td>
<td>Communicative disorders and sciences</td>
<td>Master of Arts (MA)</td>
<td>GRE (general); undergraduate major of at least 30 credit hours in speech, language, and hearing disorders or closely allied courses; GPA 3.0 in last 60 hours and major; 3 recommendation letters (2 from parent academic institution); personal essay; application deadlines: March 1 for summer and fall, October 1 for spring</td>
</tr>
<tr>
<td>550 213</td>
<td>Counseling</td>
<td>Master of Science (MS)</td>
<td>GRE (general); or MAT scores; 3 references; resume; professional experience; required test scores; application deadlines: March 1 for summer and fall, October 1 for spring; GPA minimum of 3.5 in at least one year of master’s degree</td>
</tr>
<tr>
<td>550 213</td>
<td>Computer science</td>
<td>Master of Science (MS)</td>
<td>GPA 3.0 last 60 hours; statement of professional goals; 3 reference letters; resume; possible personal interview; completion of 9 undergraduate hours in psychology and 6 additional hours in behavioral sciences; application deadlines: first Monday in October for spring, last Monday in March for summer or fall</td>
</tr>
<tr>
<td>600 250</td>
<td>Creative writing Fiction Poetry</td>
<td>Master of Fine Arts (MFA)</td>
<td>GPA 3.0 in English courses; 24 hours of relevant course work: Original writing in fiction 4 to 6 original poems</td>
</tr>
<tr>
<td>550 213</td>
<td>Criminal justice</td>
<td>Master of Arts (MA)</td>
<td>GPA 3.0 last 60 hours; a handwritten statement of interests and goals; GRE (general)</td>
</tr>
<tr>
<td>550 213</td>
<td>Curriculum and instruction</td>
<td>Master of Education (MEd)</td>
<td>GPA 3.0 last 60 hours; or acceptable GRE or MAT scores; teacher certifiability and teaching experience</td>
</tr>
<tr>
<td>550 213</td>
<td>Economics</td>
<td>Master of Arts (MA)</td>
<td>GPA 2.75 in last 60 hours, all economics courses, and required mathematics</td>
</tr>
<tr>
<td>550 213</td>
<td>Educational administration</td>
<td>Master of Education (MEd)</td>
<td>GRE (general) or MAT; 3 recommendations; resume; 1 year full-time teaching experience in accredited school; mentor support letter GRE (general) or MAT; district and building-level administrative certification; 3 recommendations; resume; goals statement; portfolio; district release; application deadline: November 1; GPA 3.5 for all graduate hours</td>
</tr>
<tr>
<td>550 213</td>
<td>Educational psychology</td>
<td>Master of Education (MEd)</td>
<td>GRE (verbal, quantitative, and writing); resume; 3 references; statement of goals; statement of research interests; application deadlines: first Monday in October for spring, last Monday in March for summer or fall</td>
</tr>
<tr>
<td>550 213</td>
<td>Electrical engineering</td>
<td>Master of Science (MS)</td>
<td>Undergraduate major in electrical engineering or equivalent; GPA 3.0 last 60 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Doctor of Philosophy (PhD)</td>
<td>GRE (general); master’s degree in engineering or physical science</td>
</tr>
<tr>
<td>TOEFL</td>
<td>Programs</td>
<td>Degrees</td>
<td>Departmental application requirements</td>
</tr>
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<td>---------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>550</td>
<td>Engineering management</td>
<td>Master of Engineering Management (MEM)</td>
<td>UG degree in engineering, technology, science, mathematics, or computer science; resume; GPA 3.0 last 60 hours and in all graduate work</td>
</tr>
<tr>
<td>600</td>
<td>English</td>
<td>Master of Arts (MA)</td>
<td>24 hours of relevant English courses; GPA 3.0 in English courses</td>
</tr>
<tr>
<td>550</td>
<td>Environmental science</td>
<td>Master of Science (MS)</td>
<td>BS/BA in any natural science; prerequisites: chemistry, physics, geology, biology, ecology, calculus, and statistics; 2 reference letters from science faculty; goal statement</td>
</tr>
<tr>
<td>550</td>
<td>Geology</td>
<td>Master of Science (MS)</td>
<td>Undergraduate major in geology or equivalent</td>
</tr>
<tr>
<td>575</td>
<td>Gerontology</td>
<td>Master of Arts (MA)</td>
<td>GPA 3.0 last 60 hours; names of 3 references</td>
</tr>
<tr>
<td>600</td>
<td>History</td>
<td>Master of Arts (MA)</td>
<td>Undergraduate major in history or equivalent; GPA 3.0 in all history courses</td>
</tr>
<tr>
<td>550</td>
<td>Industrial engineering</td>
<td>Master of Science (MS)</td>
<td>GRE (general) required if undergraduate degree not accredited by ABET; GPA 3.0 last 60 hours GRE (general); master’s degree in engineering or physical science</td>
</tr>
<tr>
<td>550</td>
<td>Liberal studies</td>
<td>Master of Arts (MA)</td>
<td>GPA 3.0 last 60 hours, essay; personal interview; application deadlines: October 1 for spring, April 1 for fall</td>
</tr>
<tr>
<td>550</td>
<td>Mathematics</td>
<td>Master of Science (MS)</td>
<td>Undergraduate major in math or equivalent; GPA 3.0 in mathematics courses</td>
</tr>
<tr>
<td>550</td>
<td>Mathematics-applied</td>
<td>Doctor of Philosophy (PhD)</td>
<td>GRE (advanced); GPA 3.0 overall and 3.25 in mathematics and statistics</td>
</tr>
<tr>
<td>550</td>
<td>Mechanical engineering</td>
<td>Doctor of Philosophy (PhD)</td>
<td>GPA 3.0 last 60 hours</td>
</tr>
<tr>
<td>550</td>
<td>Music</td>
<td>Master of Music (MM)</td>
<td>Accredited music bachelor’s degree; Audition; performance background</td>
</tr>
<tr>
<td>550</td>
<td>Music education</td>
<td>Master of Music Education (MME)</td>
<td>BM in piano performance or its equivalent; audition</td>
</tr>
<tr>
<td>550</td>
<td>Nursing</td>
<td>Master of Science in Nursing (MSN)</td>
<td>BM in music or music education; audition</td>
</tr>
<tr>
<td>550</td>
<td>Physical education</td>
<td>Master of Education (MEd)</td>
<td>BM or equivalent; reading proficiency in one: German, French, or Italian</td>
</tr>
<tr>
<td>550</td>
<td>Physical therapy</td>
<td>Master of Physical Therapy (MPT)</td>
<td>BM in physical therapy; reading proficiency; BM available in one: German, French, or Italian</td>
</tr>
<tr>
<td>550</td>
<td>Physics</td>
<td>Master of Science (MS)</td>
<td>GRE (general); 4 reference letters; departmental application; biographical statement; application deadline: February 1</td>
</tr>
<tr>
<td>550</td>
<td>Psychology</td>
<td>Doctor of Philosophy (PhD)</td>
<td>GRE (general); 4 reference letters; departmental application; biographical statement; application deadline: March 1</td>
</tr>
<tr>
<td>600</td>
<td>Public administration</td>
<td>Master of Public Administration (MPA)</td>
<td>GRE (general) or equivalent test; 3.0 GPA; 1 year work experience or health professional degree; MPH program application; 3 reference letters; statement of goals</td>
</tr>
<tr>
<td>570</td>
<td>Public health</td>
<td>Master of Public Health (MPH)</td>
<td>GRE (verbal and quantitative); 3 references; resume; statement of professional goals; statement of research interests; master’s degree in counseling or educational psychology or related area; application deadlines: first Monday in October for spring, last Monday in March for summer or fall; GRE writing assessment if no thesis in master’s program</td>
</tr>
<tr>
<td>350</td>
<td>School psychology</td>
<td>Specialist in Education (EdS)</td>
<td>GPA 3.0 last 60 hours; strong undergraduate preparation in liberal arts and sciences; departmental application; application deadline: January 1 for fall</td>
</tr>
<tr>
<td>550</td>
<td>Social Work</td>
<td>Master of Social Work (MSW)</td>
<td>GPA 3.0 last 60 hours; strong undergraduate preparation in liberal arts and sciences; departmental application; application deadline: February 1 for fall</td>
</tr>
<tr>
<td>550</td>
<td>Sociology</td>
<td>Master of Arts (MA)</td>
<td>3 reference letters; statement of purpose and research interests; 15 hours sociology; college algebra</td>
</tr>
<tr>
<td>550</td>
<td>Spanish</td>
<td>Master of Arts (MA)</td>
<td>24 hours intermediate/advanced Spanish; 12 hours advanced for nativespeakers; GPA 3.0 in Spanish courses</td>
</tr>
<tr>
<td>550</td>
<td>Special education</td>
<td>Master of Education (MEd)</td>
<td>GPA 3.0 last 60 hours or acceptable GRE or MAT scores; eligible for Kansas Teaching Certificate; application deadlines: April 15 for summer, July 1 for fall, December 1 for spring</td>
</tr>
<tr>
<td>550</td>
<td>Sport administration</td>
<td>Master of Education (MEd)</td>
<td>GPA 3.125 last 60 hours or GPA 2.750 and a score of 950 or higher on any two sections of the GRE</td>
</tr>
</tbody>
</table>

Addresses for exam information and applications:

- **GRE**
  - Graduate Record Examinations
  - Educational Testing Service
  - P.O. Box 6000
  - Princeton, NJ 08541-6000 USA
  - [www.gre.org/](http://www.gre.org/)

- **GMAT**
  - Graduate Management Admissions Test
  - Educational Testing Service
  - P.O. Box 6103
  - Princeton, NJ 08541-6103 USA
  - [www.gmat.org/](http://www.gmat.org/)

- **TOEFL**
  - Educational Testing Service
  - P.O. Box 6000
  - Princeton, NJ 08541-6000 USA
  - [www.Toefl.org](http://www.Toefl.org)
# Graduate Certificate Programs

**Graduate School • Wichita State University • 1845 Fairmount • Wichita, Kansas 67260-0004 • (316) 978-3095 • www.twsu.edu/admg**

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<th>Programs</th>
<th>Certificate concentrations</th>
<th>Certificate descriptions</th>
</tr>
</thead>
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<tr>
<td>600</td>
<td>Communication</td>
<td>Applied Communication</td>
<td>Provides concentrated study in a core of 14 hours of related, upper-level skills courses in applied communication. Covers established practices of professional communication and practical ways communication theory can be applied in work-related situations.</td>
</tr>
<tr>
<td>550</td>
<td>Liberal Studies</td>
<td>Great Plains Studies</td>
<td>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.</td>
</tr>
<tr>
<td>550</td>
<td>Nursing</td>
<td>Acute Care Nurse Practitioner, Adult Health and Illness Clinical, Family Nurse Practitioner, Neonatal Nurse Practitioner, Nursing and Health Care Systems Administration, Pediatric Clinical Nurse Specialist, Pediatric Nurse Practitioner, Psychiatric and Mental Health Nurse Specialist</td>
<td>Includes 12-20 hours of the existing Master of Science in Nursing curriculum depending on the specialty as an opportunity to gain additional graduate education in another nursing specialty option.</td>
</tr>
<tr>
<td>550</td>
<td>Physical Education</td>
<td>Coaching, Functional Aging</td>
<td>A program of 16 hours of study in exercise physiology, risk management and sport safety, motor development and skill acquisition, sport psychology, and organization and administration. A program of 13 hours of study of the nature and scope of the physiological aspects of aging and issues related to designing the environment for older adults.</td>
</tr>
<tr>
<td>570</td>
<td>Public Health</td>
<td>Public Health</td>
<td>A program of 16 hours of core public health training in basic public health competencies, including biostatistics, epidemiology, environment health sciences, health services administration and policy, and social and behavioral sciences.</td>
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Graduate Bulletin 2001-2002

The Graduate Bulletin, an official bulletin 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 Bulletin contains policies, policies of the Kansas Board of Regents, regulations, procedures, and fees current and in effect as it went to press. 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 bulletin 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 Bulletin

Portions of this bulletin may be viewed in electronic form on the internet: www.wichita.edu

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

Official Address

Graduate School
Wichita State University
1845 Fairmount
Wichita, Kansas 67260-0145
www.wichita.edu

Graduate School Telephone number is (316) 978-3095.

Notice of Nondiscrimination: Wichita State University does not discriminate on the basis of race, religion, color, national origin, gender, age, mental status, sexual orientation, status as a Vietnam-era veteran, or disability. Any person having inquiries concerning this may contact the Office of Equal Employment Opportunity, Wichita State University, 1845 Fairmount, Wichita, Kansas 67260-0145, (316) 978-3001.

Produced by University Publications and Advertising
Academic Calendar, 2001-2002

Fall Semester 2001
August 13-18 ....................................... Fall semester registration
August 18 ........................................... Classes begin
September 3 ....................................... Labor Day holiday
September 17 ..................................... Final date for filing Application for Degree card in Graduate School Office
October 12 ......................................... Midterm point
October 14-16 ..................................... Fall recess
October 30 ......................................... Final date for withdrawal with nonpenalty grades
November 18-January 9 ....................... Telephone registration period for spring semester
(Exact dates published in the Schedule of Courses)
November 21-25 ................................... Thanksgiving recess
December 7 ......................................... Final date for all degree requirements, excluding current courses, to be met and reported to the Graduate School, including: oral defense, comprehensive exam, incomplete grades, bound thesis*
All departmental requirements must have been met*
December 10 ..................................... Last day of classes
December 11 ...................................... Study day
December 12-18 .................................. Final examinations
December 19 ...................................... Fall semester ends

Spring Semester 2002
January 7-12 ....................................... Spring semester registration
January 19 ......................................... Classes begin
January 21 ......................................... Martin Luther King, Jr. Day, holiday
February 12 ...................................... Final date for filing Application for Degree card in Graduate School Office
March 15 ........................................... Midterm point
March 18-24 ..................................... Spring recess
April 5 ............................................... Final date for withdrawal with nonpenalty grades
April 17-August 5 ............................... Telephone registration period for spring semester
(Exact dates published in the Schedule of Courses)
May 3 ................................................ Final date for all degree requirements, excluding current courses, to be met and reported to the Graduate School, including: oral defense, comprehensive exam, incomplete grades, bound thesis*
All departmental requirements must have been met*
May 13 ............................................. Last day of classes
May 14 ............................................. Study day
May 15-21 ......................................... Final examinations
May 17-18 ......................................... Commencement
May 22 ............................................. Spring semester ends

*Graduate School deadlines to insure graduation that semester.
Summer Semester 2002
May 28-June 7 ..................................... Presession and workshops
May 27 ............................................. Memorial Day, holiday
June 3-7 ............................................. Summer Session registration
June 10 ....................................... Classes begin, first four-week term
June 21 ............................................. Final date for filing Application for Degree card in Graduate School Office
July 4 ............................................ Independence Day holiday
July 5 .............................................. Last day of first four-week term
July 8 ............................................. Registration for second four-week term
July 8 ............................................. Classes begin, second four-week term
July 27 ............................................ Final date for all degree requirements, excluding current courses, to be met and reported to the Graduate School, including: oral defense, comprehensive exam, incomplete grades, bound thesis*
All departmental requirements must have been met*
August 2 ...................................... Summer Session ends

*These dates may be subject to change.
*Graduate School deadlines to insure graduation that semester.
Graduate School

Offices: 107 Jardine Hall
Susan Kovar, interim dean
David Wright, associate dean
Margaret Wood, 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 to the Kansas Board of Regents.

The Graduate School provides opportunities to pursue advanced study in 56 master's, one educational specialist, and nine doctoral programs. More than 3,400 students—roughly one of every five WSU students—are graduate students. The University, classified by the Carnegie Foundation as a Doctoral II institution, annually grants approximately 35 doctorates.

The Graduate School defines graduate study as a specific set of skills needed to practice a profession or do advanced research. There are two types of graduate degrees: the professional master's and the research master's. The research master's degree involves experience in research and scholarship, and it may be a final degree or a step toward a doctorate degree.

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 doctorate degree.

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 the writing of a thesis or the completion of comprehensive exams.

The doctoral degree typically involves both course work 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, and directed readings to provide a comprehensive knowledge of an academic field. During this time, students may also begin independent research projects.

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. 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 the commitment to a graduate degree program, or who desire interdisciplinary course work 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.

Academic programs include master's, specialist, doctoral programs; and graduate certificate programs. Doctoral degrees are awarded in applied mathematics; chemistry; communicative disorders and sciences; educational administration; psychology-human factors and community-clinical; and in aerospace, electrical, industrial, and mechanical engineering.

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.

Exceptions to Regulations
Departures from the rules and regulations stated in the Graduate Bulletin require the filing and approval of a Request 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. Unusual and/or substantial deviations from stated rules and regulations require action by the Graduate Council.

Graduate Council
The Graduate Council consists of the dean of the Graduate School, ten 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. The council also advises with the dean on matters submitted by the dean and serves as a committee on exceptions.

Doctoral Sub-Council
The Doctoral Program Sub-Council 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, 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 vice president for academic affairs, the deans of the Graduate School and academic colleges, and regular faculty members nominated and approved for graduate faculty status.

Regular faculty are recommended for appointment to the graduate faculty by the chairpersons of their departments and approved by the Graduate Council. Recommendations for graduate faculty status are based on rank (above instructor); degree in the field, or training or experience; scholarly or professional work; and the need for the faculty member to hold graduate faculty status.

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. All regular graduate faculty hold the terminal degree in their discipline.

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.

At Wichita State, regular faculty are not automatically members of the graduate faculty. Department chairs nominate faculty for membership on the graduate faculty by submitting an application with a current academic resume. Applications are reviewed and acted upon by the Graduate Council. Regular faculty are normally appointed either as full members or as associate members, while adjunct faculty are appointed in the acting ad hoc category. Full members of the graduate faculty who work in doctoral programs are reviewed by the Doctoral Program Sub-Council for the privilege of chairing doctoral dissertations.

Full membership reflects the highest level of scholarly attainment and is defined as regular faculty ranking above instructor, with substantial interest in graduate education, and for whom a demonstrable...
departmental or program need exists. Faculty nominated for membership in this category shall be expected to hold the terminal degree or its equivalent in training and/or experience (with criteria and documentation supplied in cases for which equivalency is claimed) and be judged qualified to bear all designated academic responsibilities of the graduate program(s) in which they serve. It is expected that significant scholarly and/or artistic or creative achievement will be evident in the academic and professional resume presented in support of nominations and renewals for full membership in the graduate faculty.

Full members of the graduate faculty are the only faculty eligible to chair thesis committees. Full membership in the graduate faculty is also a prerequisite for doctoral dissertation chairing status.

Doctoral Dissertation Chairing Status is defined as full membership on the graduate faculty along with a demonstrable departmental or program need for the faculty member to hold dissertation chairing status. Substantial and sustained scholarly and/or artistic or creative achievement over the most recent five to seven years will be evident in the resumes of faculty nominated for this category. The extent of previous experience in serving on and supervising theses and/or dissertation committees, at WSU or elsewhere, will also enter into the consideration of dissertation chairing status and should be reflected in the resume accompanying the nomination.

Graduate Faculty Associate membership is available to adjunct faculty whose relationship with an academic department exceeds the usual visiting or joint appointment type of association. Nominations for membership in this category are approved by the Graduate Council and must be accompanied by a detailed statement of the nominee’s involvement with the department, including the extent to which the nominee will interact with regular faculty; be involved in department affairs; and be engaged in teaching, advising, and supervising student, and research. Other criteria are the same as for the full membership category. Appointments to this category are for one year and are renewable upon request by the department and approval of the Graduate Council.

Associate membership is defined as regular faculty ranking above instructor, with substantial interest in graduate education, and for whom a demonstrable departmental or program need exists. Faculty nominated for membership in this category shall be judged qualified because of academic and/or professional experience, to teach graduate credit courses and serve on thesis and/or dissertation committees. Normally, new faculty who have not had the opportunity to demonstrate scholarly activity will be nominated for the associate member category and, if requested, may be authorized to chair thesis committees for a period of three years.

Acting Ad hoc membership is defined as regular faculty or participating faculty in various temporary or part-time assignments. Nominees are judged qualified to teach graduate-level courses according to academic and/or professional experience. Appointment may not exceed the term of one year, but can be considered for annual renewal.

A complete listing of graduate faculty is available in the Graduate School Office. Departmental lists are available in the main office of each department. Students are advised to consult this list when selecting faculty advisors for theses and dissertations.

Graduate Coordinators
The Graduate School works closely with the 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 their 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 program and the Graduate School office, working with their departmental chair or other administrators in maintaining the quality and viability of their graduate program, 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

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 non-degree graduate status, students must request and submit a completed Application for Admission and appropriate credentials to:

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

Application forms may also be requested by e-mail at gradpgm@wshut.edu or through the website: http://www.wsum.edu/admgwww/

In order to receive graduate credit at Wichita State University, students must be admitted to the Graduate School. Admission is based primarily upon an applicant’s previous academic record; therefore, two official transcripts of all previous academic work, except work completed at WSU must be received along with the Application for Admission to the Graduate School.

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 fact that courses completed at one institution may be included on a transcript from another institution is not sufficient. Transcripts must be mailed directly from the institution where the work was completed.

Credentials other than official transcripts will be considered for application as a visiting guest student or nondegree, category B student. Please refer to page 10 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 WSU Application to for Admission to Graduate School, certain program areas will also require a departmental application.

Records required for admission evaluation for programs without application deadlines, and from applicants not requiring visa status, should reach the Graduate School at least three weeks before registration for the term when admission is desired. Materials received after this date will be processed as time of staff and faculty permits, but the Graduate School cannot guarantee 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 departments with enrollment limitations generally take action on new applicants in February or March for fall admission, early application is recommended.

Preference usually is given to degree-seeking applicants.

An admission to the Graduate School remains valid only if students enroll and complete at one class as graduate students within one calendar year of their admission date.

Admission Application Fee

All degree-bound applicants to the Wichita State University Graduate School who are U.S. citizens or permanent resident aliens must pay a one time fee of $25.

All degree-bound applicants to the Wichita State University Graduate School who will require a visa status to begin their graduate studies must pay a fee of $40 each time they apply to a graduate program. The fee is nonrefundable and must be paid in U.S. dollars.

There is no application fee for non-degree applicants.

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 chemistry, communicative disorders and sciences, counseling, educational administration, educational psychology, liberal studies, physical therapy, psychology, school psychology, and social work. Applicants to the program areas identified above should refer to departmental information in this bulletin for admission deadlines.

Admission Requirements

Degree Admission—Specialist and Master’s Programs

Applicants for full-standing admission to the specialist and master’s programs must meet the following requirements:

1. The applicant must 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 an American four-year 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.

2. Specific grade point average (GPA), entrance exam requirements, and prerequisite course work for degree-seeking students at the master’s or specialist level:

A grade point average of at least 2.750 based upon the last 60 hours of course work (or nearest semester or term break to this), including any post-bachelor’s
graduate work, and 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 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 summary page inside the front cover of this bulletin to determine if a specific program requires an entrance exam.

Degree Admission—Doctoral Programs
Applicants for full standing degree admission to the doctoral programs must meet the following requirements:
1. The applicant must 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 an American four-year 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.
2. A grade point average of at least 3.00 in the last 60 hours or nearest two years when the bachelor's degree is the admissions credential. Applicants with a master's degree or with completed graduate course work must have at least a 3.250 grade point average and no more than 9 hours of background deficiencies in the desired field of graduate study.
3. Acceptable scores on the General Aptitude Test from the Graduate Record Examination (within the last five years).

Degree Admission
Early application is recommended when seeking admission to a graduate degree program. See the Graduate Program Requirements list (inside front cover) for departmental application deadlines.

Include in your application packet:
1. A completed and signed application form
2. A check or money order payable to Wichita State University
   - American citizen $25
   - Non-resident alien $40 (see 4 below)
   - Permanent resident $25 (see 5 below)
3. Two (2) official transcripts in sealed envelopes from the institutions where you received or expect to receive your bachelor's or master's degree and where you have completed other academic work.

Applicants who are not American citizens and who do not have Permanent Residency Status also require:
5. A notarized copy of both sides of your Resident Alien card.

Non-Degree Admission
Persons who already possess a graduate degree, who do not want to seek a graduate degree at Wichita State University at this time, or who wish to take graduate courses for professional advancement or personal satisfaction, should apply for non-degree admission. Students originally admitted to a non-degree category may later request the department to consider a transfer to degree status or reapply for admission if the degree program is in a different department. A maximum of 12 hours of graduate credit taken while in a non-degree category may be counted toward a degree program, provided students have obtained the approval of their major departments and the graduate dean. There is no application fee for non-degree admission.

Non-Degree, Category A
Admission to this category provides students the opportunity to take any level of graduate course work for which they have the prerequisites. Students in this category are not restricted and may take courses at the 500- and above. Non-degree 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 requirement:
1. A bachelor's degree from a regionally accredited institution.
2. A grade point average of at least 2.750 based on the last 60 hours of course work (or nearest semester or term break to this), including any post-bachelor's graduate work. Some departments require higher grade point averages and other admission credentials.

Students who do not meet the 2.750 grade point average requirements may be admitted to this category on probation if reasonable evidence exists to indicate their ability to perform satisfactorily in 500-level or above course work.

Although there is no application deadline for non-degree, 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. Two (2) official transcripts in sealed envelopes, from the institutions, of a bachelor's degree from a regionally accredited institution or a copy of a teaching certificate.

Graduate Certificate Admission
Graduate certificates are awarded to students who desire interdisciplinary course work to complement their graduate degree program or to students 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 non-degree, category A status. All Graduate School policies relative to the admission criteria mentioned above apply.

Graduate Guest Admission
Graduate students in good standing at another regionally accredited graduate school may be admitted as a visiting guest. Such admission is valid for only one semester. Admission requires the submission of a completed Application for Admission 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, the student must obtain regular admission.

Graduate Readmission Following Academic Dismissal
Following academic dismissal, students who wish to be considered for readmission to Graduate School should first complete a minimum of 9 hours of upper-division letter-graded course work, selected with appropriate advisement. Such course work
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 readmission to a graduate program. Previously dismissed students who are recommended for admission under this policy will enter on probation.

Senior Rule Admission

Seniors at Wichita State or other 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 no later than two weeks before the semester in which they intend to enroll under the Senior Rule option.

Approval is needed from the student’s major advisor, the chairperson or graduate coordinator in the department in which the work is to be taken, the undergraduate dean of the student’s college, 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.

Supplemental Information for International Applicants

International students presently in the United States on a student visa obtained by admission to another U.S. university will not be considered for admission to Wichita State University until they have attended the institution issuing their original I-20 for at least one semester. Exceptions to this policy require the concurrence, in writing, of the institution issuing the original I-20.

The first semester enrollment of all international students must be in the program to which the student is admitted unless written permission to gain admission and enroll in a different program is obtained from the original department. The formal admission of international applicants 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) and financial resources (WSU Statement of Financial Responsibility) to support graduate work in America.

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 four-year equivalent degree, official copies of the degree statement or diploma are required.

International applicants who have completed graduate work or have attended an American university will need to submit two (2) official transcripts showing that work.

The Graduate School must receive official transcripts or mark sheets showing the actual award of the degree before applicants from abroad can be considered for admission.

TOEFL Examination

Applicants whose native language is not English must request the Educational Testing Service (ETS) to send their Test of English as a Foreign Language (TOEFL) scores. Waivers will be considered if applicants have attended a university in the United States as a full-time student. Full-time is defined as enrollment in academic courses for a minimum of one year.

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. An official copy of the TOEFL score—less than two years old—showing a minimum score of 550 for the paper-based test or 213 on the computer-based test is required. Photocopies of the TOEFL scores are unacceptable.

The following programs currently require a higher score than the minimum score:

<table>
<thead>
<tr>
<th>Program</th>
<th>Paper-based</th>
<th>Computer-based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>570</td>
<td>220</td>
</tr>
<tr>
<td>Communications</td>
<td>600</td>
<td>250</td>
</tr>
<tr>
<td>Creative Writing</td>
<td>600</td>
<td>250</td>
</tr>
<tr>
<td>English</td>
<td>600</td>
<td>250</td>
</tr>
<tr>
<td>Gerontology</td>
<td>575</td>
<td>220</td>
</tr>
<tr>
<td>History</td>
<td>600</td>
<td>250</td>
</tr>
<tr>
<td>Public Administration</td>
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<td>220</td>
</tr>
<tr>
<td>Public Health</td>
<td>570</td>
<td>220</td>
</tr>
</tbody>
</table>

If you are interested in studying English at WSU prior to beginning your graduate studies, write to:

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

Application forms may also be requested by e-mail at intadm@twsuvm.uc.twsu.edu or through the website at http://www.mrc.twsu.edu/ielc/ielchome.html

WSU Official Statement of Financial Responsibility

International applicants must demonstrate sufficient financial resources in order to support their graduate work in the United States. The WSU Official Financial Statement for International Graduate School Applicants is the form that must be used to demonstrate the resources. Bank statements or letters from relatives or employers will not be considered as a substitute for the WSU Official Financial Statement form.

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

1. A completed and signed application for admission.
2. A non-refundable $40 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 four-year equivalent degree, official copies of the degree statement or diploma are required.
4. Official certification of the minimum TOEFL requirement. A waiver will be considered if the applicant has attended an American 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 an American University within two years of the proposed semester of admission at Wichita State University.

Mandatory Health Insurance

Wichita State University requires that all non-immigrant international students have a specified minimum amount of medical insurance protection for every semester they are enrolled as a student at Wichita State University. Each non-immigrant international student must obtain and maintain medical insurance from a company authorized to do business in the United States, with the following minimum coverages:

- Basic injury and sickness benefits amounting to at least $10,000.
- Major medical coverage in an amount of at least $100,000.
- Coverage to provide for repatriation of the student’s remains to the student’s home country in the case of death.
- Coverage to provide for medical evacuation of the student to the student’s home country.
- 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.

WSU Former Graduate Students in Inactive Status

Students who have completed graduate course work at Wichita State University but who do not enroll for...
more than 12 months are placed in an inactive status on the Registrar's computer database. To enroll again, such students need to call the Graduate School office, (316) 978-3095, and ask to have their records reactivated. Such notification needs to be done at least one month in advance of any planned enrollment. Because of changes in program requirements, periods of non enrollment may result in the need to complete an application for readmission to the program.

Jardine Hall, on Alumni Drive at Wichita State's 17th and Hillside campus, houses offices for the Graduate School, Undergraduate Admissions, and Registrar.
Enrollment

Audit Credit
Graduate students may take any course for which they have the prerequisites and which is open to them on the basis of their admission category on an audit (no credit) basis. The tuition and fees for audit (no credit) are less than those for credit courses. Students enrolling in audit courses must enroll for credit and may be subject to full-time degree requirements. Use of the audit basis for a course must be declared at the time of enrollment.

Grade Reports
At the end of each semester, students may access their final grades through the Shocker Line for Student Access by calling (316) 978-6500 and listening for the grade option. Students desiring a printed report of their grades may make such a request through that system.

Identification Number
All students are identified in the University’s computer files by a unique nine-digit number. A Social Security number is the preferred number, however, no student is required to give their social security number for student identification purposes. A separate nine-digit identification number can be assigned by the Graduate Admissions area for applicants who decline to provide their Social Security number.

Load Definitions
At least 9 hours of graduate credit course work 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 only must meet the undergraduate requirement for certification as a full-time student (12 hours).

Graduate students may not enroll for more than 16 hours per semester (doctoral dissertation credit excluded), or 10 hours during an eight-week summer session. Exceptions will be considered for students admitted to programs requiring more than the maximum hours allowed. International students must enroll as full-time students (at least 9 hours of graduate credit course work) each semester.

While the Graduate School sets no official maximum number of hours, other than the 16-hour limit, students holding assistantships should work with their advisors to arrive at a load appropriate to their situations.

Graduate students holding assistantships during a fall or spring semester are expected to enroll in at least 9 credit hours of course work. Exceptions to allow full-time (20 hours of work per week) for graduate assistants to be enrolled in 6-8 hours may be approved by the department. Special consideration for thesis and research enrollments may be obtained by petitioning the Graduate School.

Registration, Drops and Adds, Late Fees
The Registrar establishes procedures for registration. Graduate students must enroll according to the procedures published in the Schedule of Courses and available on the University's website at www.wichita.edu for any given semester.

Newly admitted, currently enrolled, and former graduate students, not academically dismissed, are eligible for telephone registration. Call 978-6500 from a touch-tone phone, and follow the instructions provided. Some academic restrictions have been built into the system. Program specific restrictions may be considered for removal by contacting the appropriate department and requesting an electronic override.

Some restrictions cannot be overridden including non-degree, category B students enrolling in courses beyond the 799 level.

Once a student has enrolled and paid, classes can be changed only by filing a Drop and/or Add Form with the necessary signatures. 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.

Fees are charged for late enrollments. Only partial refunds are made after certain cutoff dates. Late enrollments or adds normally will not be approved after the 20th class day. Drops of classes with a grade of W (withdrawal) are also subject to a time limit established by the Registrar.

Students who find it necessary to completely withdraw from the University must process a drop form for each class.

Payment
Tuition and fees are required to be paid in full, including any financial aid or loans a student may have, before enrollment is complete and the student is eligible to attend classes.

A short-term loan program is available to assist students in making tuition payments through an installment payment plan. 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. These interest-free loans are limited to 75 percent of a student's total tuition and fees, plus a $30 nonrefundable administrative fee. Loans are available to students at the time of enrollment. Students must enroll in person to be eligible. Such loans must be repaid in three equal installments according to the deadlines for a given semester.

Residency
The residence of students, for tuition purposes, is determined by the acts of the Kansas State 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. This law and regulations are different than those that govern residency for any other purpose.

According to the law and regulations, a resident for tuition purposes is someone who has resided (been physically present) in Kansas for twelve consecutive months prior to enrollment/re-enrollment and who has demonstrated, during those twelve months, the intent to make Kansas their permanent home.

Certain exceptions are authorized by state law to pay the equivalent of resident fees:
(a) regular employees of the University and their spouse and dependent children (does not apply to student assistant and graduate assistants)
(b) persons on full-time active military duty stationed in Kansas, and their spouse and dependent children
(c) persons who were in active military service who were discharged or retired in Kansas
(d) persons who graduated from a four-year program at an accredited Kansas high school within 6 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 spouse and dependent children

Residents of Kansas, for fee purposes, who leave the state retain their residency as long as they return to Kansas in a permanent status within 12 months of departure.

The above information is a partial list of residency exceptions. The details about each of these exceptions are critical. None of the exceptions are automatic. Several require certification of appropriate information on specific forms. Contact the Office of the Registrar, (316) 978-3672, for more information.

Senior Citizen Enrollment
People wishing to enroll under the Senior Citizens Program in courses numbered 800 and above must first obtain the written permission of the instructor.

Special Fees and Refunds
The registration fee, required of all students enrolled on the Wichita State campus, supports the Educational Opportunity Fund, parking, student union, athletics, Heskett Center, Student Health Services, forensics, Student Government Association,
University Forum Board, student publications, and other student activities.

Prior to each semester, the Registrar establishes enrollment dates. Late registration is a special service resulting in extra costs for special staff and facilities. Students who register late are assessed late registration fees as published in the Schedule of Courses.

Students who drop credits and do not add credits will be charged the proportional percentage based on the week they drop the credits. The percentages are published in the Schedule of Courses.

Students who drop and add credits will not be required to pay additional tuition/fees if the following conditions are met:
(a) The drop and add occurs in one transaction.
(b) There is an equal number of credit hours added as are being dropped.
(c) The credits being added are taken during the same period of the semester as the credit being dropped. Credit hours from workshops and other irregular courses cannot be offset against regular semester courses or vice versa.

Refunds of tuition and fees will be granted for withdrawals in accordance with the dates and regulations published in the Schedule of Courses for a given semester. 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 the Controller, 201 Jardine Hall.

Students with extenuating circumstances may petition the Tuition Refund Board of Appeals for a higher refund than that allowed by policy. The petition forms are available at the Controller's Office, 201 Jardine Hall. In order to be considered, the petition must be filed with appropriate documentation and within the semester of enrollment for the course.

Students who receive approval from the University Exceptions Committee for a late withdrawal from a previous semester are not generally approved for tuition refunds. These are separate issues and decisions. No one other than the Controller's Office or the Tuition Refund Board of Appeals is authorized to determine the amount of tuition refund a student will receive.

**Student Identification Card**

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 is the only means by which students can utilize the following services: Ablah Library, Heskett Center, Athletic Ticket Office, Student Government, Student Health Services, and WSU Police Department.

**Transcripts**

Transcripts may be ordered in person at the Registrar's Office or by written request. Official transcripts are $5 per copy with the fee waived for currently enrolled WSU graduate students. Current enrollment for a semester/term starts with the first day of classes for a given semester/term, and extends until classes begin for the upcoming semester/term. A $10 fee for immediate service will be charged for all requests.

When ordering a transcript through the mail, include your full name, student ID number, birth date, first and last semester and years enrolled at WSU, complete information as to where to mail the transcript, your signature, and a check or money order for the appropriate amount ($5 per copy) payable to WSU. Mail the written request to:

Attention: Transcripts
Registrar's Office
Wichita State University
1845 Fairmount
Wichita, Kansas 67260-0058

**Withdrawal—Administrative**

Administrative withdrawal may be initiated by the Graduate Dean for the following reasons:
1. The student's class attendance is so irregular that in the instructor's opinion full benefit cannot be derived from the course.
2. The student fails to withdraw from one or more classes by the official procedure given in the Wichita State University Schedule of Courses.
3. The student does not meet the conditions for enrollment in courses numbered 800 and above.
4. The student's behavior is prejudicial to Wichita State University.
Academics

Graduate Advisors

Various patterns exist for advising degree-bound graduate students. Some departments have a central plan for new graduate students, after which individual advisors are assigned. Other departments assign new graduate students to advisors early in their graduate program.

Students in non-degree status within a program area may also be assigned faculty advisors for consultation purposes.

In all instances, advisors should be familiar with Graduate School rules and regulations as well as program and department 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 department 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

Courses carrying graduate credit are listed in the Graduate Bulletin. Only courses numbered 500 and above can carry graduate credit and are available to 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 an advanced 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 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.

Courses numbered 700 to 799 are structured primarily for graduate students, but upper-division undergraduate students may be admitted if they meet course prerequisites. In such mixed classes, a discernibly higher level of performance by graduate students is expected with the nature of this differential performance set by the professor. Graduate students enrolling in such classes automatically earn graduate credit unless the professor requests the Graduate School to have the enrollment designated on the transcript as "undergraduate credit only."

Courses numbered 700-899 are designed primarily for Graduate I students (students who ordinarily have not accumulated more than 30 hours in a graduate program). 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 600 and above are restricted to graduate students only.

In special cases, courses in areas where advanced degree programs are not currently available may carry graduate credit and apply toward an advanced degree in a related field or simply count as graduate credit for some non-degree 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.

Cooperative Education Internship Program

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

Enrollment in cooperative education courses for graduate credit can be made only through those departments who have an approved course numbered 781 and titled Cooperative Education. No other course titles such as independent study, special topics, and so forth can be used for cooperative education enrollment.

Graduate students desiring to participate in the Cooperative Education Internship Program should first consult with their major department and the Graduate School. The Cooperative Education office is located in 223 Grace Wilkie Hall. The telephone number is (316) 978-3688.

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 independent study, special problems, directed readings, individual projects, directed study, and so forth to identify opportunities for individual 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.
4. No more than 6 hours of independent study course work (excluding dissertation, thesis, and other independent study activities that are terminal requirements for a degree) can be used in a degree program.

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

Grades

Course work for graduate credit is normally graded A, B, C, D, or F.

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.

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, etc.) 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 courses transferred from another institution will not be counted in the WSU graduate grade point average. Courses transferred from another institution and graduate credit courses graded S (satisfactory) do not affect the graduate grade point average.

Incompletes

Students desiring credit for an incomplete grade assigned spring 1999 or later for regular courses (excluding research, dissertation, thesis, and other terminal projects) 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 I will be changed 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.
Probation

Students admitted to full standing in a degree program, or non-degree category A, will be placed on academic probation if their graduate grade point average falls below 3.00.

Students admitted on probation are automatically placed in full standing if they attain a cumulative grade point average of at least 3.00 after the completion of 9 hours of graduate credit course work.

Students placed on probation after admission are automatically returned to full standing if they attain a cumulative grade point average of at least 3.00 within 9 additional hours of graduate credit course work.

Dismissal

Students in any category may be dismissed from the Graduate School if they fail to maintain a grade point average of at least 2.00 in all work taken (including undergraduate courses) after admission.

Students may be dismissed from their degree program or non-degree category A and placed in non-degree category B if they fail to attain a cumulative grade point average of at least 3.00 upon the completion of 9 graduate credits after admission on probation or placement on probation after admission.

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 the degree. Students dismissed for this reason may be transferred to a non-degree category.

Following academic dismissal, students who wish to be considered for readmission to Graduate School should first complete a minimum of 9 hours of upper-division, letter-graded course work, selected with appropriate advisement. Such course work must be completed with a grade point average of 2.00 on a 4.00 scale or higher for the readmission application to be considered. Meeting this standard, along with both Graduate School and program-specific requirements, will permit readmission to a graduate program. Previously dismissed students who are recommended for admission under this policy will enter on probation.

Repeats

Graduate credit courses in which grades of C or above are earned may be repeated. Grades below C may not be used to satisfy degree requirements, but such courses may be repeated.

The latest grade of all repeated courses replaces the original grade to determine a student's grade point average.

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 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 course work 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 may be used toward the requirements of a graduate degree.

Transfer of Credit from Another University

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

1. 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, and (b) the credit is fully acceptable at the other institution in satisfaction of its advanced degree requirement, (c) the credit is applicable in terms of content to the student's program of study at WSU, and must carry a minimum grade value of 3.00 on a 4.00 point scale. Grades lower than B, including B-, will not be accepted.

2. Master's and specialist degree programs requiring fewer than 40 hours may include no more than one-third of the total hours or 12 hours whichever is greater, of graduate work completed at another accredited graduate school (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), Master of Business Administration (MBA), 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 course work hours required, exclusive of acceptable hours in a master's degree.

4. Courses considered for transfer must have been completed at an accredited graduate school and must carry a minimum grade value of 3.00 on a 4.00 point scale Grades lower than B, including B-, will not be accepted.

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 course work 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.

Graduate credit work from another university which has been accepted for transfer is not transferred or entered on a Wichita State University transcript, except for students completing degree programs, and only then after completion of all work for the degree, as defined on an approved Plan of Study.

Workshop, Extension, Correspondence Credit, and Credit by Exam

Workshops 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.

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.
Degree Completion

Commencement
Two commencements are held each year, one in December and one in May. Graduate students who complete degree requirements during the preceding summer or the fall semester are eligible to attend December commencement. Graduate students who complete degree requirements in the spring and upcoming summer semester are eligible to attend the May commencement.

Diplomas are available for distribution approximately one month following the close of a given semester. All degree recipients may obtain their diplomas from the Registrar's office. Diplomas will be mailed from that office upon written request that includes the name and student identification number of the degree recipient, the complete address where the diploma is to be mailed, and a copy of the degree recipient's drivers license or Shocker ID card.

Committee Structure
Committees for program completion exams are recommended by the major department and approved by the Dean of the Graduate School. Each committee must include at least three members chosen from the graduate faculty.

In master's programs, final oral examinations are required of all students presenting theses or research projects. Thesis committees include a minimum of three and a maximum of five voting members. Voting members are full or associate graduate faculty or people from outside the faculty judged to have exceptional competence in the field of research covered in the thesis and who have been approved by the dean of the Graduate School.

The chairperson of the examination committee must be a full graduate faculty member or an associate member with temporary authorization to chair the committee. A majority of the voting members must be from the major department. One voting member must be from an academic department outside the major department who is recommended by the student's advisor and approved by the dean of the Graduate School.

In doctoral programs, the Supervisory/Dissertation Committee is 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. At least one member, the graduate dean's representative, must be outside the major department. In addition to guiding the student to successful completion of the dissertation, this committee conducts the final oral examination.

Credits Required
All master's degrees require a minimum of 30 credit hours of graduate credit work, including 18 hours in courses numbered 700 and above, excluding workshops. Some programs require more than 30 credit hours, in which case at least 60 percent of the courses must be numbered in the 700 level or above, excluding workshops.

The total number of hours for the doctoral degree varies with the major department offering the program, including the division between course work and dissertation hours. At least 60 percent of the hours beyond the master's degree must be in courses numbered 800 and above. Specific program requirements are listed in the individual department's section of the Graduate Bulletin.

Degree Application
An Application for Degree card must be filed with the Graduate School within four weeks (20 class days) after the beginning of any fall or spring semester in which students plan to finish all requirements for the degree.

Students planning to graduate at the end of the Summer Session must file an Application for Degree within two weeks (ten class days) after the beginning of the regular eight-week session even if they plan to enroll for the second four-week session only. In the latter case, the degree card must be filed by the second week with an indication of intent to enroll for the second four weeks.

If, after a student files a degree card, the degree is not completed, a new card 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. In these cases, if all work is completed and reported to the Graduate School, students need not enroll for the following semester.

Examinations
Preliminary examinations are administered by several departments to determine students' qualifications for further graduate study. Qualifying and/or comprehensive examinations are required in all doctoral programs. Refer to the appropriate department's section of the bulletin or consult with the department for additional information about these examinations. Most departments also require written or oral comprehensive examinations.

The candidate passes if no more than one negative vote is cast.

Plan of Study
In order to officially define a program of study for a graduate degree, students must submit the Plan of Study form leading to admission to candidacy. The proposed plan identifying the completion option must be on file in the Graduate School office no later than the 20th day of the fall or spring semester, or the 10th day of the eight-week summer term, during the semester of graduation.

Students must meet the program requirements in effect at the time the Plan of Study option is officially approved. It is recommended, therefore, that the Plan of Study completion form 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.

A Plan of Study is developed in conjunction with the advisor and signed by the candidate, 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.

In master's programs, final oral examinations are required because of enrollment problems or other circumstances by submitting the Revision to Plan of Study form. 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.

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.

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 work in the Graduate School must be filed with the Graduate School office.

Time Limits
Courses started more than six years before the semester in which the master's degree work is completed may not be used as part of a degree program.
For doctoral programs requiring a master's degree for admission, the doctorate must be completed within six years from the effective date of admission. In those programs permitting admission directly after the bachelor's degree, the doctorate must be completed within nine years after the semester of admission.

In cases where the above time limits are exceeded and in which the student desires to have such course count toward degree completion, the outdated course must be validated or substituted with a course within the time limits, or a Request 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 must submit a 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 B or better performance by the student.

Transfer courses and work that originally received a grade of C or below may not 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 transcripts. The transcript will normally carry the grade of I (incomplete) 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 unless all degree requirements are met prior to the first day of classes of the semester of graduation. Enrollment is for the number of hours that accurately reflects demands of the students on University faculty and facilities.

**Thesis Preparation**

Three copies of the thesis/dissertation must be bound on white 8 1/2 x 11 inch paper. All copies must be on acid-neutral, 20-24 weight bond with a minimum rag content of 25 percent. Digital materials that are considered a part of the document must be included in a pocket attached by the bindery to the inside back cover.

The Graduate School will transmit two copies of the document to the University Library. The third bound copy will be presented by the student to the academic department that supervised the work.

For additional information about the preparation of the thesis, the student is referred to the Graduate School publication, *Guide to the Preparation of Theses and Dissertations*, which can be purchased in the WSU Bookstore.

**Tool or Language Requirements**

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

Any tool subjects (e.g., foreign language, computer programming, statistics, etc.) required by the major department 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.

**Supplementary 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 degree 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 3.00 in all courses on the student's WSU Plan of Study (excluding transfer work) and for all graduate work taken at WSU.

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.

3. Upon the advice and consent of the major department, a maximum of 6 semester hours of work in one earned master's degree program may be applied to a second master's degree. Such hours must meet the time limit requirement.

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

5. Master's and specialist degree programs requiring fewer than 40 hours 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), Master of Business Administration (MBA), and other more lengthy programs have special transfer credit allowances, as indicated in their program descriptions.

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.

7. Graduate students must be enrolled in the semester of graduation unless all degree requirements are met and reported to the Graduate School prior to the first day of classes of the semester of graduation.

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

All applicants who qualify for admission to the Graduate School may apply to their department chairman or the dean of their college for information on graduate fellowships and assistantships. Students admitted on probation or placed on academic probation following admission are not eligible for assistantship or fellowship awards.

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

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 are not normally considered for assistantship awards.

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

A graduate teaching assistantship may qualify the recipient for up to a 100 percent waiver of tuition. Potential applicants for graduate teaching assistantships who are non-native speakers of English must first attain a score of 50 or above on the Test of Spoken English (TSE)/SPEAK. The department chair 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 $5,000 to $12,000.

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 by April 15 for the following fall. Award amounts are determined by the individual program area.

Students desiring a listing of departmental graduate assistantships, fellowships, and scholarships are encouraged to obtain a copy of the Graduate School publication, Financial Opportunities for Graduate Students, or to contact the program area of their interest.

General Awards

The Graduate School awards a number of general awards and certain fellowships activities as described below. Inquiries about these awards and additional eligibility requirements should be made to:

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

Dora Wallace Hodgson Outstanding Graduate Student Awards

Established in 1995 through a donation to the WSU Endowment Association from the Dora Wallace Hodgson estate, awards are given annually for the following categories: Outstanding Doctoral Dissertation, Outstanding Master's Thesis, Outstanding Doctoral Student, Outstanding Master's Student, and Outstanding First Year Doctoral Student and Outstanding First Year Master's Student. Students nominated for any of the Dora Wallace Hodgson Awards must meet general eligibility requirements including: good standing in a degree-bound program, nomination by a faculty member, approval by their graduate coordinator or department chair and the dean of their college.

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. Deserving students are nominated by faculty.

Dr. Laiten L. and 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 science, foreign language, or education. Deserving students are nominated by faculty.

The WSU Endowment Association and City of Wichita Assistantships

In addition to the regular teaching and research awards, a number of graduate assistantships are provided by Wichita State University Endowment Association and from the City of Wichita and Sedgwick County mill levy funds. These awards require full-time study or a combination of research assistance and study equivalent to full-time study. The awards are made in graduate program areas judged to have a special need for graduate student support and are based primarily upon a student's academic record, experience, and other available supporting evidence. All such awards are made by the graduate dean upon recommendation of the selected departmental chairpersons and may include programs at both the master's or doctoral program level.

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 5 hours but not more than 8 hours, and who qualify for financial assistance. Applications, which may be obtained in the Graduate School office, are due by the first Monday in June for fall; first Monday in October for spring. A financial statement form is part of the application. For information and/or application, contact the Graduate School office.

Research Scholarships

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 in a degree program. Applicants must be enrolled in the semester prior to the semester of award and show satisfactory academic progress in course work related to the proposed course of study. Applications, which may be obtained at the Graduate School office, are due by the first Monday in October for fall; first Monday in February for spring.

Special Research Scholarships

The Special Research Scholarships 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.

Applicants must be in good academic standing, have a comprehensive Plan of Study on file with the Graduate School, and submit documentation that the
presentation has been accepted for presentation at a professional meeting. One award per student per calendar year may be considered. The application deadline is ongoing, but the application must be received in the Graduate School office four weeks prior to the presentation.

Dora Wallace Summer Research Award
The Dora Wallace Summer Research Award provides one-time summer support for master's and doctoral candidates enrolled in at least 1 hour of research courses. Nominations are accepted from faculty advisors with awards, made upon availability of funds. Programs will be notified of fund availability on an annual basis.

Need-Based Financial Aid
WSU’s Office of Financial Aid helps graduate students secure federal and state financial aid on the basis of need. Need is the difference between the cost of education—which includes tuition, fees, room, board, books, supplies, and other expenses—and the amount the student and their family can afford to pay. The amount the student and their family can pay is the Expected Family Contribution. The Expected Family Contribution is determined by evaluating the information provided on the financial aid application submitted to the government. The federal processing agency considers income, assets, family size, and the number in family attending college to determine the need for aid.

The first step in applying for these programs or loans is to complete a financial assessment form and to request the results be sent to the Wichita State University Office of Financial Aid. If need-based financial aid is required, the Graduate School strongly recommends that the completed application 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 need-based financial aid.

Application Deadlines
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 dates below.

Enrollment Period | Due Date
--- | ---
Spring | November 1
Summer | April 1
Fall | March 15

Work Opportunities
The Kansas Career Work-Study Program is administered by Wichita State's Office of Cooperative Education Internship Program. This state-funded program increases the number of off-campus jobs available to students. Besides earning money to help with graduate school expenses, graduate students also earn academic credit and gain practical degree-related experience. The earnings from a work-study program are figured into the total financial assistance package.

Many graduate students also participate in the University’s Cooperative Education Internship Program. In this program, students work at the local, state, or national level in a well-paying job that complements their academic field of study. Students earn academic credit while learning degree-related skills and earn money to support their graduate studies.

Danseuse Espagnole (Spanish Dancer) by Sophia Vari, one of approximately 70 sculptures in WSU's Martin H. Bush Outdoor Sculpture Collection, is a focal point in the University's Plaza of Heroines.
General University Policies

Human Relations

Notice of nondiscrimination. Applicants for admission and employment; students, parents, and employees are hereby notified that Wichita State University does not discriminate on the basis of race, religion, color, national origin, gender, age, marital status, sexual orientation, status as a Vietnam-era veteran, or disability in admission or access to, or treatment or employment in, its programs and activities. 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, Kansas 67260-0145. 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. The WSU bulletin is available in other formats. Inquiries should be addressed to the Office of Disability Services.

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 college 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 University.
6. To answer promptly all written notices from advisors, faculty, deans, and other University officers.
7. To file an Application for Degree card in the dean's office of the appropriate college at least two semesters before the expected date of graduation.
8. To enroll in only those courses for which the stated prerequisite(s) (if there are any) 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 responsibilities 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, probation, or suspension, consistent with campus provisions for due process.

The Student Code of Conduct provides guidelines for students' behavior as well as an overview of the discipline process. The code is published in the Student Handbook, which is available in the Office of Student Life, 105 Grace Wilkie Hall. It is also available on the WSU web site (www.wichita.edu) under University Policy and Procedures Manual.

Academic Honesty

Opportunities for learning at Wichita State University involve the students' rights to express their views and to take reasoned exception to the views of faculty; to examine all questions felt to be appropriate to a course of study; to be protected from improper disclosure of their views and beliefs; to be examined in a fair and impartial manner; and to be treated with dignity and respect. Students are responsible, however, for learning the content of any course of study outlined by their instructors, regardless of any views or judgments privately held and for demonstrating their attainment in an honest manner.

Students who compromise the integrity of the classroom are subject to disciplinary action on the part of the University. Violations of classroom standards include:
1. Cheating in any form, whether in formal examinations or elsewhere;
2. Plagiarism, using the work of others as one's own without assigning proper credit to the source;
3. Misrepresentation of any work done in the classroom or in preparation for class;
4. Falsification, forgery, or alteration of any documents pertaining to academic records;
5. Disruptive behavior in a course of study or abuse of authority toward faculty or fellow students;
6. Grounds of honesty, fairly applied to all students, is essential to a learning environment. Students violating such standards must accept the consequences; penalties are assessed by appropriate classroom instructors or other designated people. Serious cases may result in discipline at the college or university level and may result in suspension or dismissal. Dismissal from a college for academic dishonesty constitutes dismissal from the University. Students accused of abridging a standard of honesty may protect themselves through established academic appeal procedures and are assured of due process and the right of appeal from accusations or penalties felt to be unjust.

Access to Records (Privacy Law)

The Family Educational Rights and Privacy Act of 1974 (FERPA) is a Federal law which provides that the institution will maintain the confidentiality of student education records.

Wichita State University accords all the rights under the law to students who are declared independent. Those rights are: 1) the right to inspect and review the student's education records; 2) the right to request the 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; 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; and 5) the right to obtain a copy of Wichita State University's student records policy. You can obtain a copy of the policy from the Registrar's office.

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 persons 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, and to persons in an emergency in order to protect the health or safety of students or other persons. All these exceptions are permitted under the Act.

Within the Wichita State University 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, Controller, 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 accomplishment of some task or determination; 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. 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 Designation
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." Name, address(es), telephone number(s), dates of attendance, classification (freshman, sophomore, etc.), course load (full-time, half-time, less than half-time) class type (day, day/ evening, weekend only) previous institution(s) attended, major field(s) of study, awards, honors (includes Dean's list), degree(s) conferred (including dates), past and present participation in officially recognized sports and activities, physical factors (height, weight of athletes). Currently enrolled students may withhold disclosure of "Directory Information" (on an all or none basis) to non-institutional persons or organizations. You have an option to protect your privacy and not have such information as your address and telephone number released. Forms requesting the withholding of this information are available in the Registrar's Office, 117 Jardine Hall, and are returned to that office. Otherwise, the University assumes that you approve of disclosure of that information. The completed form must be received at the Registrar's Office by the end of the second week of the Fall Semester if you do not want to be included in the Campus Directory, which is published each Fall and which is available to people outside WSU. Requests to withhold "Directory Information" must be filed annually. Other than the Campus Directory, the University does not give or sell lists of students to private companies.

Family Educational Rights and Privacy Act
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: That information described in Section 99.3 of the "Final Rule on Education Records, Privacy Rights of Parents and Students." The information is defined by the code as: "Information relating to a student: Name, current address, level and school, date of birth, major field of study, participation in officially recognized activities and sports, height and weight of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous educational institution attended by the student. 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."

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 others 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 was no longer a student at the University. An example would be information collected by the University or the 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/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.

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 vice president for student affairs.

E. 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 or other family member; the address of the student; personal identifiers, such as social security or student numbers; personal characteristics or other information that would make the student's identity easily traceable.

H. School Official: faculty, staff, student employees or 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.

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 inspect, review, and/or receive copies of 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 and to copies of the records where necessary to provide full inspection and review. 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 $2.50 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 identification card and/or other positive identification.

D. 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 educational 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; (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.

E. An individual who is an applicant for admission to the University, or to one of its component parts, or who is a student in attendance at the University, may waive his or her right to inspect and review confidential letters and confidential statements of recommendation, except that the waiver may apply to confidential letters and statements only if:

(1) The applicant or student is, upon request, notified of the names of all individuals providing the letters or statements;

(2) The letters or statements are used only for the purpose for which they were originally intended;

(3) Such waiver is not required by the University as a condition of admission to or receipt of any other service or benefit from 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.

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

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:

(1) The applicant or student, upon request, is notified of the names of all persons providing letters;

(2) The letters are used only for the purpose for which they were originally intended;

(3) The waiver is not required as a condition of admission or for any other service or benefit of the University.

Waivers may be made with respect to specified classes of education records and/or persons or institutions. 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 the education records of a student, other than directory information, except as otherwise provided in this policy.

The University may, without the consent of the student, disclose directory information, as described earlier. If a student wishes to have such information withheld, he/she must notify the Office of the Registrar. If a student wishes to prevent the publication of such information in the University telephone directory, he/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 authorities to comply with a judicial order or subpoena, provided the University makes a reasonable effort to notify the student in advance of compliance; to financial aid personnel in conjunction with an application for financial assistance; to organizations conducting studies for accrediting functions; 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 which will be imposed; (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 in connection with an emergency if knowledge of the information is necessary to protect the health or safety of the student or any other individuals. Disclosures for this purpose shall take into account: (1) the seriousness of the threat to the health or safety of the student or individuals; (2) the need for the information to meet the emergency; (3) whether the parties to whom the information is disclosed are in a position to deal with the emergency; (4) the extent to which time is of the essence in dealing with the emergency.

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, a student’s parents, or a student’s legal guardian. The student will be notified in writing of any disclosure of grades made to his or her parents or legal guardian. Dependency, for this purpose, is defined by the Internal Revenue Code of 1954, Section 152. Should the student be financially indebted to the University, the 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

Each office which maintains education records shall adopt its own policy with regard to destruction of education 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 Request and Disclosures

The unit custodian shall maintain records 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.

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 by the vice president for student affairs.

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:

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

(2) 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.

(3) If the student agrees, the determination shall be noted in the record. The determination shall state the reasons for the decision.

(4) If the student disagrees with the decision of the unit custodian, the student may settle the dispute informally with the student affairs office with regard to the deletion or modification of the education record. The student affairs office shall notify the student of the decision.

(5) If the student wishes to file a complaint with the appropriate department, the student shall be notified of the opportunity to place with the education record a summary statement commenting upon the information in the record 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.

(6) If the student wishes to file a complaint with the appropriate department, the student shall not have a direct interest in the outcome of the challenge.

(7) If the student wishes to file a complaint with the appropriate department, the student shall be appointed by the vice president for student affairs or designee 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 vice president for student affairs or designee shall notify the student in writing of the decision. The decision must include a summary of the evidence and the reasons for the decision.

(8) In the event the decision of the vice president for student affairs 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 record 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.

(9) 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 vice president for student affairs, 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.

II. Complaint Procedure

If a student believes that the University is not in compliance with the Privacy Act, he/she should check first with the office involved and/or the Office of the Vice President for Student Affairs.

If a student wishes to file a complaint with the federal government concerning the University's failure to comply with the Privacy Act, he/she must submit the complaint, in writing, to the Office of the Family Educational Rights and Privacy Act, Department of Health, Education and Welfare, 330 Independence Avenue, S.W., Washington, D.C. 20201. The FERPA office will notify the student when the complaint has been received. The FERPA 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 guidelines concerning this hearing procedure, see Section 99.64 and following of the Privacy Act.

Accident or Injury

The State of Kansas and Wichita State University do not insure against accidents or injury to students which may occur during University-sponsored activities on or off campus. The University will make every reasonable attempt to advise students concerning potential danger of accident or injury. 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.
W. Frank Barton School of Business

School of Accountancy, (316) 978-3215—Bill D. Jarnagin, director

Marketing and Entrepreneurship
Professor: Charles L. Martin
Associate Professors: Donald W. Hackett (director, Center for Entrepreneurship), Dean E. Headley, Frederic B. Kraft, Robert H. Ross (chairperson)
Assistant Professors: Vincentia Claycomb, Terry Noel, Stephen Porter

The mission of the W. Frank Barton School of Business is to add value to students and to advance the practice of business through:
- offering undergraduate and graduate programs,
- conducting basic, applied, and instructional research,
- performing service that facilitates economic and personal development, and
- capitalizing on our metropolitan location.

The vision of the W. Frank Barton School of Business is to be recognized as the best source of high quality business education, prospective employees, scholarly research, and business development services in the community, state, and region.

Consistent with the University's role as the Regents' urban institution, 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 university, the faculty of the Barton School of Business are committed to programs and activities that will help sustain the contribution that urban centers make 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, 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 a learning environment 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. To increase 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.

Management
Endowed Professor: Gerald H. Graham (R.P. Clinton Distinguished Professor of Management, occupies the R.P. Clinton Endowed Chair of Management)
Professors: Dharma deSilva, Cynthia Lengnick-Hall
Associate Professors: John A. Belt, Nancy A. Bereman (associate dean, Barton School of Business), Manoj Gupta (chairperson), Mark Lengnick-Hall, Martha Sanders
Assistant Professors: Larry Iakos, Timothy Pett, James A. Wolff

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 metropolitan mission.

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

The school is a member of the American Assembly of Collegiate Schools of Business; its undergraduate and graduate programs are accredited by this organization.

Graduate degree programs in the school lead to the Master of Business Administration (MBA), Master of Professional Accountancy (MPA), Master of Science (MS) in business, and the Master of Arts (MA) in economics.

Master of Professional Accountancy
The Master of Professional Accountancy 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 emphases on communication skills, mathematics, and economics, and includes a broad exposure to the different aspects of business and management.

The program requires a minimum of five years of full-time collegiate study, when beginning as a freshman. Students who decide to enter the program later in their academic careers should consult with the graduate coordinator of the School of Accountancy to learn the approximate length of time it would take to earn the degree. For example, if your bachelor's degree is in accounting, then basically you would have one more year of full-time study to obtain the MPA degree.

Admission Requirements
Admission to the MPA professional curriculum is available to (1) qualified students who have not yet completed a bachelor's degree, and (2) qualified students who have completed a bachelor's degree (not necessarily in business or accounting) from an accredited college or university.

Full admission to the MPA professional curriculum, for students who have not yet completed a bachelor's degree, requires:
1. Completion of the preprofessional curriculum described below.
2. A minimum grade point average of 2.750 on all courses identified as Barton School of Business core courses.
3. A minimum grade point average of 3.000 on the following courses: Acct. 310, 320, 410, and 430.
4. A total of 1,100 points based on the formula of 200 times the overall grade point average on the last 50 hours plus the GMAT score.

Students who meet all the requirements above, except for having no more than 9 hours of preprofessional curriculum, may be admitted to the School of Accountancy if the minimum scholastic requirements (a total of 1,100 points based on the formula of 200 times the overall GPA plus the GMAT score) are met. Students holding a bachelor's degree in any field (not necessarily business or accounting) from a regionally accredited institution may be admitted to the School of Accountancy if they meet the minimum scholastic requirements (a total of 1,100 points based on the formula of 200 times the overall GPA plus the GMAT score). They may be admitted on a conditional basis as course scheduling permits.

Probationary Admission—All Students
Students who do not meet the minimum GMAT and/or grade point requirements may be admitted to probationary status by the director on the basis of sufficient evidence that they can satisfactorily complete the MPA program requirements and have the potential for a successful career in professional accounting.

Degree Requirements—Students Not Possessing a Bachelor’s Degree at Time of Admission

Preprofessional Curriculum
Students pursuing the Master of Professional Accountancy (MPA) are required to meet specific requirements for admission to the School of Accountancy. During the candidate's undergraduate work, the following requirements must be met:

1. The candidate must complete the general education requirements for Wichita State University, plus additional non-business courses for 62 semester hours. The following courses are specifically required by the School of Accountancy and may be counted within this 62 hours:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Econ. 201Q and 202Q, Principles of Economics</td>
<td>8</td>
</tr>
<tr>
<td>Upper-division economics courses</td>
<td>3</td>
</tr>
<tr>
<td>Econ. 231, Introductory Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Comm. 111, Basic Public Speaking, and Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>Eng. 710, Composition Business, Professional, and Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>Math 111, College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>Math 144, Business Calculus</td>
<td>3</td>
</tr>
</tbody>
</table>

2. The candidate must complete a minimum of 25 hours of the following Barton School of Business core requirements:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acct. 210, Financial Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 220, Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 366, Introduction to Information</td>
<td>3</td>
</tr>
<tr>
<td>Processing Systems</td>
<td>3</td>
</tr>
<tr>
<td>DS 496, Introduction to Production Management</td>
<td>3</td>
</tr>
<tr>
<td>DS 495, Management Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Fin. 340, Finance</td>
<td>3</td>
</tr>
<tr>
<td>Mgmt. 360, Concepts of Administration</td>
<td>3</td>
</tr>
<tr>
<td>Mgmt. 430, Business and Society</td>
<td>3</td>
</tr>
<tr>
<td>Mkt. 300, Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>

3. The candidate must complete the following courses required by the School of Accountancy.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preprofessional Accounting Core</td>
<td></td>
</tr>
<tr>
<td>Acct. 310, Financial Accounting and Reporting: Assets</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 320, Accounting for Decision Making and Control</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 410, Financial Accounting and Reporting: Equities</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 430, Introduction to Federal Income Tax</td>
<td>3</td>
</tr>
</tbody>
</table>

During the semester in which the preprofessional curriculum will be completed, the candidate for the MPA must apply for admission to the Graduate School. The GMAT should be taken during, or just prior to, this semester.

A bachelor's degree will be awarded at the time of conferring the MPA degree.

Professional Curriculum
Candidates in the professional curriculum who have completed the minimum preprofessional curriculum outlined above, must complete 56 credit hours in the following courses while maintaining an overall grade point average of 3.00 or better.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acct. 360, Accounting Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 410, Financial Accounting and Reporting: Special Entities and Complex Issues</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 620, Accounting for Strategic Support and Performance Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 630, Taxation of Business Entities</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 640, Principles of Auditing</td>
<td>3</td>
</tr>
<tr>
<td>Remaining Barton School of Business core requirements</td>
<td>3-6</td>
</tr>
<tr>
<td>Acct. 815, Financial Accounting and Reporting: Contemporary Issues</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 825, Management Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 835, Tax Research and Selected Topics</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 840, Advanced Principles of Auditing</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 860, Advanced Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Mgmt. 885, Strategic Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Graduate electives outside accounting. **
Other graduate electives (accounting or nonaccounting) **

As a minimum, the candidate’s program must include 30 graduate level hours, including 15 hours of accounting courses numbered 800 or above and a total of 21 semester hours of courses numbered 800 or above—excluding any courses which represent business core knowledge. A minimum of 154 credit hours (undergraduate and graduate) is required.

**Scores of courses under Preprofessional Curriculum. Core courses taken after admission to the MPA program must be graduate-level equivalent courses.

Electives must be selected to conform with AACSB standards for master’s in accounting programs. See the graduate coordinator of the School of Accountancy for assistance in making selections.

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. As a minimum, the candidate's program must total 50 graduate-level credit hours beyond the bachelor's degree, including 15 semester hours of accounting courses numbered 800 or above and a total of 21 semester hours in courses numbered 800 or above.

In general, we presume an undergraduate degree in business and an accounting major, equivalent to that offered at WSU. The following courses, or their graduate equivalents, must be included as part of the MPA degree program if not covered in the student's bachelor's degree.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acct. 210, Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 220, Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 260, Introduction to Information</td>
<td>3</td>
</tr>
<tr>
<td>Processing Systems</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 310, Financial Accounting and Reporting: Assets</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 320, Accounting for Decision Making and Control</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 410, Financial Accounting and Reporting: Equities</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 430, Introduction to Federal Income Tax</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 610, Accounting Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 610, Financial Accounting and Reporting: Equities</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 640, Principles of Auditing</td>
<td>3</td>
</tr>
<tr>
<td>Remaining Barton School of Business core requirements</td>
<td>3-6</td>
</tr>
<tr>
<td>Acct. 825, Management Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 835, Tax Research and Selected Topics</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 840, Advanced Principles of Auditing</td>
<td>3</td>
</tr>
<tr>
<td>Acct. 860, Advanced Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Mgmt. 885, Strategic Management</td>
<td>3</td>
</tr>
</tbody>
</table>
DS 350, Introduction to Production and Operations Management .......... 3
DS 495, Management Information Systems ........................................ 3
Econ. 201Q, Principles of Macroeconomics ........................................ 3
Econ. 202Q, Principles of Microeconomics ......................................... 3
Econ. 231, Introductory Business Statistics ....................................... 3
Fin. 340, Financial Management I .................................................. 3
Mgmt. 360, Management and Organizational Behavior ......................... 3
Mgmt. 430, Business, Government, and Society .................................. 3
Mgmt. 681, Strategic Management ................................................... 3
Math. 111, College Algebra ................................................................... 3
Mkt. 300, Marketing ............................................................................ 3
Mkt. 144, Business Calculus .................................................................. 3

The following graduate-level course work must be completed:

Courses Hrs.  
Acct. 815, Financial Accounting and Reporting: Contemporary Issues ........ 3
Acct. 825, Management Control Systems ......................................... 3
Acct. 835, Tax Research and Selected Topics ..................................... 3
Acct. 840, Advanced Principles of Auditing ..................................... 3
Acct. 860, Advanced Accounting Information Systems ....................... 3
Graduate electives outside accounting .............................................. 9
Other graduate electives (accounting or non-accounting) ............. 6

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; and entrepreneurship 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 emphasis may be developed in a variety of subjects as explained later.

The total hours required of students and the level at which they begin participation in the MBA program depend on their academic preparation. The total number of hours required for completion of an MBA ranges from 30 to 64.

Most of the courses that can be taken for graduate credit and almost all of those on the 800 level 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 shown scholarship, strong personal motivation, and the ability to develop skills necessary to assume positions of leadership.

Although various criteria are considered in granting admission, special attention is given to the applicants’ grade point averages on academic work completed and to their scores on the Graduate Management Admission Test (GMAT) taken within the last six years. To be admitted, applicants must have 1,050 points based on the formula: 200 times a student’s overall grade point average, plus the GMAT score; or 1,100 points based on 200 times the grade point average on the last 60 hours of graduate and undergraduate work completed, plus the GMAT score.

Students who do not meet the above criteria may be considered for admission through an exceptions process. Information on this process may be obtained from the Graduate Studies in Business Office.

International students also are required to have a minimum score of 550 on the Test of English as a Foreign Language.

Applications for degree admission are reviewed twice a year, in the fall and spring. Deadlines for submitting applications to the Graduate School are the first Monday in December for consideration for spring admission and the last Monday in July for consideration for fall admission. International applicants living outside the United States must submit their applications by April 1 for fall consideration and October 1 for spring consideration. Applicants who apply after these deadlines are considered in the order in which their completed applications materials are received.

Degree Requirements  
Advanced Standing: Students with strong backgrounds in mathematics and business administration may be granted advanced standing in the MBA program through equivalent credit for background fundamental 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 background fundamental courses, depending on the depth of their undergraduate or previous graduate preparation. The MBA program may consist of as few as 30 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 work in economics or statistics to be granted credit for these courses.

Determination regarding equivalency credit will be made following admission to the program.

MBA Course Requirements  

**Prerequisites**  
Math. 144, Business Calculus ..................................................... 3
Econ. 231, Introductory Business Statistics ................................. 4

**Background Fundamental Courses**  
Acct. 800, Financial Accounting .................................................. 3
DS 850, Production and Operations Management .......................... 3
DS 874, Management Information Systems .................................. 3
Econ. 800, Analysis of Economic Theory ..................................... 3
Fin. 840, Financial Systems ......................................................... 3
Mgmt. 860, Management of Organizations ..................................... 3
Mkt. 800, Marketing Systems ....................................................... 3

Required Courses  
Acct. 801, Managerial Accounting .............................................. 3
Econ. 804, Managerial Economics .................................................. 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
Mkt. 801, Marketing Management .................................................. 3
Mgmt. 862, Organizational Behavior ............................................... 3
Mgmt. 885, Advanced Strategic Management (taken during last semester) ................................................................. 3

***Electives**  

* These courses are to be taken only if a specific void 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.  
*** Two Independent Studies may also be taken as electives (3 credit hours each).

Policies  
1. A candidate's individual Plan of Study must be approved by the director or associate director. This plan must be filed within a month of the completion of 12 hours of graduate work.
2. All candidates must complete 27 hours of 800 level courses including: Acct. 801, Econ. 804, Fin. 850, Mgmt. 803 or Mkt. 803, Mgmt. 862, Mgmt. 885, Mkt. 801 and 6 hours of electives. The additional 3 hours of electives may be at either the 800 level or the 600 level.
3. General topic interest areas offered in the Barton School of Business are accounting, entrepreneurship, finance, managerial economics, marketing, operations analysis and production management, organizational behavior, and human resource management.
4. 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.

**Executive Master of Business Administration**

The Executive Master of Business Administration degree program is developed exclusively for high-potential professionals. The program focuses on the needs of professionals as well as the demands of the globally competitive business community. The EMBA 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 and entrepreneurship departments.

The EMBA program is completed in twenty-two months and requires completion of fourteen classes (36 credit hours). All classes meet on Saturdays.

**Admission Requirements**

Admission to the EMBA is granted to students who hold mid- or upper-level professional positions in businesses and nonprofit organizations. All students must hold a bachelor’s degree from a regionally accredited institution. Previous academic training in business is not required for admission to the EMBA program.

Although various criteria are considered in granting admission, special attention is given to the applicant’s work experience; potential for advancement in their organization; and score on the Graduate Management Admissions Test (GMAT). All applicants are required to submit application materials including letters of recommendation and personal essays, and are required to complete a personal interview with Barton School faculty and/or administrative staff.

International students also are required to have a minimum score of 550 on the Test of English as a Foreign Language.

**Degree Requirements**

All students must complete 36 hours of course work. Students progress through the program as a group. Of the required 36 hours of course work, 5 of those hours are electives. EMBA participants, as a group, choose elective classes to be taken.

**EMBA Course Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>EMBA 800, Statistical Analysis and Quantitative Methods for Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 801, Human Behavior and the Management of Organizations</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 802, Marketing for Executive Management</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 803, Economic Analysis for Managers</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 804, Global Business and Competitiveness</td>
<td>2</td>
</tr>
<tr>
<td>EMBA 805, Operations Management</td>
<td>2</td>
</tr>
<tr>
<td>EMBA 806, Accounting, Financial Reporting, and Control</td>
<td>2</td>
</tr>
<tr>
<td>EMBA 807, Corporate Finance</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 808, Managerial Accounting for Management</td>
<td>3</td>
</tr>
<tr>
<td>EMBA 809, Information Technology for Management</td>
<td>2</td>
</tr>
<tr>
<td>EMBA 810, Managerial Investment Strategies</td>
<td>2</td>
</tr>
<tr>
<td>Electives</td>
<td>5</td>
</tr>
</tbody>
</table>

**Master of Science in Business**

The Master of Science in Business is oriented toward developing students' specializations in business administration, as well as refining their research capabilities. Students must plan their programs, with the approval of their advisors, to include specialization in one of five areas: finance, management, marketing, human resource management, or entrepreneurship. Two options are available under the MS program in business; Option A requires the presentation of a thesis, Option B requires a special project.

**Admission Requirements**

Admission is determined by a number of factors, including the applicant’s grade point average at the undergraduate level and score on the Graduate Management Admission Test (GMAT) taken within the last six years. General minimum requirements for admission are:

1. A bachelor's degree from a regionally accredited university.
2. A total of 1,050 points based on the formula: 200 times the student’s overall grade point average plus the GMAT score; or 1,100 points based on 200 times the grade point average on the last 60 hours of undergraduate work completed, plus the GMAT score.

International students also are required to have a minimum score of 550 on the Test of English as a Foreign Language.

**Degree Requirements**

Students admitted to the MS in Business program must complete the same set of prerequisites and background fundamentals as were previously listed for the MBA program. As in the MBA program, students may be granted equivalent credit for any or all of the background fundamental courses, depending on the depth of their undergraduate or previous graduate preparation.

Beyond the background fundamentals, the degree program includes 31 to 33 hours of work, including Thesis or Special Project hours. All course work taken for the degree must be approved by the student's advisor. (Courses identified as background fundamentals may not be included in the 31-33 hours required for the degree.)

Students obtaining the MS in business (under either option) are required to complete 6 hours of methods courses designed to enhance the student's capabilities for practical applications and/or research in the field of specialization. Methods courses would likely be drawn from such courses as research methods, statistical analysis, and experimental design.

Additional requirements under each option area are as follows:

Option A: Option A requires the completion of 33 credit hours of work, including at least 22 hours in 800-level courses. In addition to the two required courses specified earlier, candidates must present a thesis, in their area of specialization, for a total of 4 semester credit hours. They must also take at least 9 hours in this area of specialization.

A preliminary oral examination over the thesis proposal is required. Candidates also must present an oral defense of their thesis conducted according to the requirements of Wichita State University’s Graduate School.

Option B: Option B requires the completion of a minimum of 33 credit hours of work, including at least 24 hours in 800-level courses. In addition, at least 15 hours must be in the area of specialization. Admission to Option B must be approved by the MS committee.

Of the 15 hours of specialization, 3 credit hours must be taken as a special project in the student's area of specialization. The special project may involve original case research or field research. This project must be approved by the MS committee and ordinarily is directed by a group of graduate faculty members.

For Option B, a final oral examination, conducted according to the requirements of the MS committee, is held over a student's entire degree program.

**Master of Arts in Economics**

The Department of Economics presents a curriculum leading to the Master of Arts (MA) degree. Courses of study allow a concentration 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 subspecialty is particularly suitable for students who wish to continue their studies in economics at the doctoral level. Financial economics includes course work 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**

- Academic four-year undergraduate degree from a regionally accredited institution.
• Admission based primarily on grade point average (GPA) and background in economics.
• Admission to full standing requires a GPA of 2.75 or forth the last 60 hours of their course work and all courses in economics and required mathematics.
• Must have completed intermediate level macro- and microeconomics, plus one course in calculus and one in statistics with a grade of C or better. These course deficiencies can be made up during the first year.
• The Graduate Record Examination (GRE) is not required.
• Non-native speakers of English must have received 550 on the paper-based or 213 on the computer-based Test of English as a Foreign Language (TOEFL); 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.

Core courses—15 hours
- Econ. 702, Mathematical Methods in Economics .................................................. 3
- Econ. 731, Applied Econometrics I ................................................................. 3
- Econ. 801, Macroeconomic Analysis ................................................................ 3
- Econ. 802, Microeconomic Analysis ............................................................... 3
- 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.

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
- Eco 740, Monetary Problems and Policy .................................................. 3

International Economics Tract
- Econ. 672, International Economics and Business ........................................... 3
- Econ. 674, International Finance (cross-listed as Fin. 625) .................................. 3
- Econ. 870, International Finance and Investment (cross-listed as Fin. 820) .......... 3
- Two additional economics/international related courses (such as International Management) and a 3-hour research project (9 credit hours) or one additional economics/international course and 3 hours of thesis (6 credit hours).

Business Economics
In addition to Econ. 731 and 801 listed above, the business economics subspecialty requires the following courses:
- Econ. 802, Microeconomic Analysis or Econ. 804, Managerial Economics .................................................. 3
- Econ. 803, Analysis of Financial Conditions and Forecasting or Econ. 831, Applied Econometrics 3
- 800-level business courses in at least two fields ........................................... 9

Independent Research. Students electing the independent research option are required to complete 30 graduate semester hours and 3 additional hours of independent research. Independent research is taken under the direction of a graduate faculty member of the economics department. The final product is a written paper summarizing the research submitted to the department. The research paper must be read and approved by two faculty members in addition to the faculty advisor.

Comprehensive Examination. Students electing to take the comprehensive examination option are required both to complete 33 graduate semester hours and pass a written comprehensive examination.

Executive Master of Business Administration (EMBA)
Graduate Studies in Business
Courses for Graduate Students Only
EMBA 800, Statistical Analysis and Quantitative Methods for Decision Making. (3). Introduces methods of statistical inference, emphasizing applications to administrative and management decision problems. Includes classical estimation and hypothesis testing, regression, correlation, analysis of variance, and nonparametric methods. Prerequisite: admission to EMBA program.

EMBA 801, Human Behavior and the Management of Organizations. (3). 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. Marketing for Executive Management. (3). Focuses on the analysis, planning, and implementation of marketing strategies from middle- and upper-management perspectives. Introduces key concepts and methods for the development of integrated marketing programs. Prerequisite: admission to Executive MBA program.

EMBA 803. Economic Analysis for Managers. (3). Focuses on the behavior of the firm’s product and labor markets, the consequences of business, regulatory and tax policies, industry pricing, research and development strategies, transfer pricing, the effects of vertical and horizontal integration, leveraged buy-outs and principal-agent problems. Prerequisite: admission to Executive MBA program.

EMBA 804. Operations Management. (2). Focuses on the processes by which goods and services are supplied, produced, and distributed in organizations. Emphasizes systems for analyzing design and operational problems in the production/operations function. Prerequisite: admission to Executive MBA program.

EMBA 805. Global Business and Competitiveness. (2). 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 Executive MBA program.


EMBA 807. Corporate Finance. (3). Focuses on the strategic decision that an organization makes leading to capital spending. Also includes the risk element in financial decision making and the financial instruments that have evolved to reallocate risk in the economy. Prerequisite: admission to Executive MBA program.

EMBA 808. Using Accounting Information to Improve Strategic and Operational Performance. (3). Focuses on the use of financial information in management decision making. Includes internal reporting systems, cost management systems, planning and budgeting, performance measurement issues, and activity-based management. Prerequisite: admission to Executive MBA program.

EMBA 809. Information Technology. (3). Focuses on information as a resource and the links between business strategy and information technology, the organizational implica-
tions of technology, and how to successfully incorporate information technology into organizations to support management decision making and control. Prerequisite: admission to Executive MBA program.

EMBA 810. Managerial Investment Strategies. (2). Focuses on investment management, asset pricing models, factor models, performance assessment, option pricing, and other derivative securities. Prerequisite: admission to Executive MBA program.

EMBA 811. Managerial Strategy. (3). Integrates the other courses in the program by addressing the strategic management of an organization. Focuses on developing a strategic plan that maximizes shareholder value, generates commitment and effective action from others in the organization for implementing the plan, and developing a strategy consistent with the organization's resources while increasing shareholder value by satisfying customers better than do competitors. Prerequisite: admission to Executive MBA program.

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: Acct. 220 and 260; Math. 111 or 112; senior 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: Acct. 410 or equivalent; Math. 111 or 112; senior 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 competitive advantage and/or competitive advantages. Focuses on goal-congruent strategies and incentives. Prerequisites: junior standing; Math. 111 or 112; Acct. 260 and 320.

Acct. 630. Taxation of Business Entities. (3). Studies the federal tax law as it applies to corporations, partnerships, S corporations, and tax-exempt entities. Examines the effect of taxation on business decisions. Prerequisites: junior standing and Acct. 430 or equivalent.

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: Acct. 260, 410, 560; Math. 111 or 112; senior standing.

Acct. 690. Seminar in Selected Topics. (1-3). Repeatable for credit with School of Accountancy consent.

Acct. 777. Review for Professional Examinations. (1-4). Prepares students for professional certification examinations in accounting, including the CPA, CMA, and CIA examinations. Enrollment governs whether course is offered. Graded S/U and may be repeated for credit. Registration for up to 6 semester hours is permitted. Credit for this course does not count for degree credit in the School of Accountancy or Barton School of Business. Prerequisites: permission of the School of Accountancy.

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. 800. Financial Accounting. (3). A study of the basic structure of accounting, income determination, asset valuation, liability recognition, and accounting for ownership equity. Includes the interpretation and analysis of financial statements. Prerequisite: no previous credit in accounting or permission of the School of Accountancy.

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. Prerequisite: Acct. 800 or equivalent.

Acct. 802. The Effect of Taxation on Management Decisions. (3). Introduces the basic tax concepts of income, deductions, and credits that will enable managers to (1) understand the tax consequences of their business decisions and (2) communicate effectively with tax professionals in structuring business transactions. Prerequisites: graduate standing and Acct. 800 or equivalent, or permission of the School of Accountancy.

Acct. 815. Financial Accounting and Reporting: Contemporary Issues. (3). Uses the case method 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 broadcasting 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. 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. 430 (or equivalent), or permission of the School of Accountancy.

Acct. 840. Advanced Principles of Auditing. (3). An advanced study of auditing emphasizing EDP auditing statistical sampling and ethics. Prerequisites: graduate standing and Acct. 510 and 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.


Business Law (B. Law)

Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit

B. Law 690. Seminar in Selected Topics. (1-9). Repeatable with departmental consent. Prerequisite: junior standing.


Courses for Graduate Students Only

B. Law 831. Legal Environment of Business. (3). An introduction to the legal environment within which the business system operates. Considers the functions of law in relation to the business system, the institutions and processes involved in the interaction between business, society, and government and the major frameworks of private and public law. Emphasizes the role of public law from a managerial perspective, including the ethical and social responsibility aspects of business behavior.

B. Law 890. Seminar in Special Topics. (1-3). Repeatable with departmental consent.
BARTON SCHOOL OF BUSINESS/ECONOMICS 31

B. Law 891. Directed Studies. (1-5). Prerequisite: departmental consent.

Decision Sciences (DS)
Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit

DS 575. Decision Making Techniques. (3). An introduction to the quantitative techniques commonly used for managerial decision making and their application to problems in such areas as production, distribution, and finance. Includes linear, integer, goal and dynamic programming, transportation models, network models, queuing theory and simulation. Prerequisite: DS 350.

DS 651. Design of Operations Systems. (3). Gives an in-depth view of the long-term design aspects of operations systems. Includes process analysis and design, production control information systems, facilities planning, materials handling system, job design, personnel planning and scheduling and current issues. Prerequisite: DS 350.

DS 652. Operations Planning Systems. (3). Gives an in-depth analysis of the short-term or operational aspects of goods- or service-producing systems. Includes forecasting methods, inventory control models, material requirements planning, aggregate planning and scheduling, and current issues. Prerequisite: DS 350.

DS 690. Seminar in Selected Topics. (1-5). Repeatable with departmental consent. Prerequisite: junior standing.

DS 750. Workshop in Decision Sciences. (1-4). Prerequisite: junior standing.

Courses for Graduate Students Only

DS 850. Production and Operations Management. (3). Concepts for planning and controlling the production of either goods or services. Topics include: linear programming, scheduling, quality control, inventory models, and waiting-line models. Not open to students with credit in DS 350. Prerequisite: calculus and statistics.

DS 851. Intermediate Production Management. (3). Theory of productive systems, decision making under uncertainty and advanced technological forecasting methods for business and industry. Application of forecasting methods and some operations research models to real-world productive systems. Prerequisite: DS 350 or 850.

DS 871. Multivariate Statistical Methods. (3). A study of selected multivariate statistical methods used in support of modern decision making. Includes multivariate hypothesis testing, multiple regression, correlation, analysis of variance and covariance, and discriminant analysis. Prerequisite: Econ. 870 or Econ. 231.

DS 872. Advanced Statistical Analysis. (3). Examines topics such as sample design, chi square, variance analysis and correlation, and regression analysis from conceptual and decision-making points of view. Prerequisite: DS 871.

DS 875. Management Science. (3). Provides quantitative bases from which the student may develop analytical abilities for use as a decision maker. Areas of study include mathematical programming, game theory forecasting, queuing theory, and simulation. Prerequisite: calculus.

DS 876. Advanced Management Science. (3). An in-depth examination of selected management science models. Includes advanced inventory and quality control topics, goal programming, and other current decision-making techniques. Prerequisite: DS 875 or departmental consent.

DS 890. Seminar in Special Topics. (1-3). Repeatable with departmental consent.

DS 891. Directed Studies. (1-6). Prerequisite: departmental consent.

DS 893. Special Project in Decision Sciences. (1-4). A special project including original case research, supervised internships, or field research. Prerequisite: approval of the MS Committee. Open only to MS in business candidates.

Economics (Econ.)
Department of Economics

Courses for Graduate/Undergraduate Credit

Econ. 605. History of Economic Thought. (3). A critical analysis of economic thought, the factors that influence this thought and its impact upon the social and economic development of the modern world. Prerequisites: Econ. 310Q, 202Q, or 100, and junior standing.

Econ. 614. Industrial Economics and Antitrust Policy. (3). Examines the behavior of firms within industries emphasizing antitrust policy. Includes pricing behavior, distributional effects, entry deterrence, advertising, and mergers. Prerequisites: Econ. 201Q and 202Q and junior standing.

Econ. 615. Economics of Transportation. (3). A study of how businesses can effectively use transportation both nationally and internationally. Also includes the physical and economic characteristics of transportation modes, basic concepts of logistics, and problems and policies related to transportation. Prerequisites: Econ. 310Q and 202Q, or Econ. 800, and junior standing.

Econ. 617. Economics of Regulation. (3). A study of the theory and practices of regulation. Includes both the traditional regulation of public utilities and communications and the newer forms of regulation, such as safety and environmental regulations. Prerequisites: Econ. 201Q, 202Q, or 800, and junior standing.

Econ. 622. Comparative Economic Systems. (3). A comparative analysis of the evolutionary structure of capitalism, socialism, and communism. Emphasizes differences in pricing resource allocation, distribution of income, and economic planning. Prerequisites: Econ. 201Q, 202Q, or 800, and junior standing.

Econ. 625. Economic History of Europe. (3). Cross-listed as Hist. 614. An analysis of the development of economic institutions; the rise of capitalism and its influence on overseas expansion, technology, precious metals, politics and war; changes in economic ideologies; and cultural effects of economic change. Prerequisites: Econ. 201Q and junior standing.

Econ. 627. Economic History of the United States. (3). Cross-listed as Hist. 515. An 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. 201Q and junior standing.

Econ. 660. Labor Economics. (3). An introduction to labor economics surveying both theoretical and empirical research in this field. Includes labor markets, wage determination, and human capital theory. Prerequisites: Econ. 201Q, 202Q, or 800, and junior standing.

Econ. 661. Collective Bargaining and Wage Determination. (3). An examination of economic and legal aspects of collective bargaining and the major issues and problems inherent in the bargaining process. Explores the manner in which wages are determined under various institutional relationships and the effects of collective bargaining on wages, employment, and prices. Prerequisites: Econ. 201Q and 202Q, or Econ. 800, and junior standing.

Econ. 662. Work and Pay. (3). Investigation of the economic aspects of work and pay emphasizing the nature of work under capitalism and the manner in which wages are determined. Covers quality of work life, labor force participation and mobility, labor market discrimination, and labor market contracts and work incentives. Prerequisites: Econ. 201Q and 202Q, or Econ. 800, and junior standing.

Econ. 663. Economic Insecurity. (3). Cross-listed as Geron. 663. Personal economic insecurity, such as unemployment, old age, health care, disability, and erratic economic fluctuations. Includes costs and benefits of government action to aid in meeting such insecurities. Prerequisites: Econ. 201Q, 202Q, or 800, or instructor's consent; junior standing.

Econ. 671. Economic Growth and Development. (3). Survey of leading growth theories, emphasizing the processes of development and capital formation in developed and underdeveloped economies. Analyzes determinants of real income, resource allocation, investment criteria, balance of payment problems, national policies, and related topics within this framework. Prerequisite: Econ. 201Q, 202Q, or 800, and junior standing.

Econ. 672. International Economics and Business. (3). A survey of the economic foundations of international trade, finance, and investment. Includes foreign exchange mar-
kets, 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. Prerequisites: Econ. 201Q, 202Q, or 800, and junior standing.

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: Fin. 346, Econ. 201Q, 202Q, or 800, and junior standing.

Econ. 688. Urban Economics. (3). Cross-listed as P. Adm. 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. 201Q and 202Q, or Econ. 800, and junior standing.

Econ. 692. Group Studies in Economics. (1-3). Repeatable for credit with departmental consent. Prerequisite: junior standing.

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: Econ. 201Q, 202Q, or 800, and Math. 144 or equivalent, and junior standing.

Econ. 731. Applied Econometrics I. (3). A study of regression techniques including 'logit/probit' analysis through business, finance, and economics examples. Reviews the fundamentals of statistics and covers practical model building, estimation of results, and various diagnostic tests. Prerequisites: Econ. 231 and junior standing.

Econ. 740. Monetary Problems and Policy. (3). An examination of historical and contemporary monetary issues in the context of the global economy. Prerequisites: Econ. 201Q, 202Q, or 800, 346; and junior standing.

Econ. 750. Workshop in Economics. (1-4). Prerequisite: junior standing.

Econ. 765. Public Sector Economics. (3). Cross-listed as P. Adm. 765. An analysis of fiscal institutions and decision making in the public sector of the American economy, budget planning and execution, taxation, debt, and fiscal policy. Prerequisites: Econ. 201Q, 202Q, or 800, and junior standing, or instructor's consent.

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. 802. Microeconomic Analysis. (3). An analysis of the consumer, the firm, and competitive and noncompetitive markets using mathematical models. Prerequisites: Econ. 302.

Econ. 803. Analysis of Business Conditions and Forecasting. (3). An intensive study of research methodologies and forecasting for real life business decision making. Covers formation of research questions, specification of models, collection of time series and survey data, applications of forecasting techniques, and interpretation and communication of the results. Prerequisites: Econ. 800 or equivalent and one semester of introductory statistics.

Econ. 804. Managerial Economics. (3). A survey of theoretical and analytical tools of economics that are useful in decision making by managers. Prerequisites: Econ. 201Q, 202Q, or 800, and 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. 731 and 702 or equivalent.

Econ. 840. Seminar in Monetary Theory. (3). An examination of neoclassical and contemporary monetary theories. Includes an analysis and an evaluation of current monetary problems. Repeatable for credit with departmental consent. Prerequisites: Econ. 202Q and 346.

Econ. 847. Speculative Markets. (3). Cross-listed as Fin. 822. Analysis of the markets for speculative securities such as futures, options and commodities. Evaluates underlying theories explaining speculative markets in which such securities are traded. Discusses trading strategies such as hedging and arbitrage. Prerequisite: Fin. 840 or equivalent.

Econ. 861. Seminar in Contemporary Labor Issues. (3). An intensive analysis of contemporary problems in the field of labor. The specific nature of the problems is determined by the interest of those enrolled in the course. Repeatable for credit with departmental consent. Prerequisite: instructor's consent.

Econ. 865. State and Local Government Finance. (3). Cross-listed as Pol. S. 865 and P. Adm. 865. An analysis of state and local government expenditure and revenue systems, with an introduction to state and local financial administration. Prerequisites: Econ. 765 or instructor's consent.

Econ. 870. International Finance and Investment. (3). Cross-listed as Fin. 820. 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. 672 or 674, Mgmt. 561, or Fin. 625.

Econ. 891. Directed Study. (1-3). Repeatable for credit. Prerequisite: departmental consent.

Econ. 896. Thesis. (1-2).

Entrepreneurship (Entre.)
Department of Marketing and Entrepreneurship

Courses for Graduate/Undergraduate Credit

Entre. 606. New Product Marketing. (3). Cross-listed as Mkt. 606. Addresses identifying, evaluating, developing, and commercializing new products within both smaller and larger firms. Explores the role of the product/brand manager, a person who often acts as an internal entrepreneur. Prerequisite: Mkt. 300.

Entre. 608. Selling and Sales Force Management. (3). Cross-listed as Mkt. 608. An analysis of current behavioral concepts of personal selling and the problems and policies involved in managing a sales force. Prerequisite: Mkt. 300.


Entre. 620. Growing and Managing an Entrepreneurial Firm. (3). Focuses on the organization, operation, marketing, and financial management of an on-going 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. Prerequisite: Entre. 220C or 320 and junior standing or instructor’s consent.

Entre. 668. Developing a Successful Business Plan. (3). Emphasizes the development of a comprehensive business plan which incorporates financial and organizational prin-
Finance (Fin.)
Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit


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 and junior 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; Econ. 201Q, 202Q, or 800; and junior standing.

Fin. 631. Money and Capital Markets. (3). A study of domestic and international financial markets, instruments, and institutions and the determinants of the general level and structure of interest rates and security prices. Also covers management of interest rates and portfolio risk using a variety of techniques. Prerequisites: Fin. 340 and junior standing.


Fin. 650. Financial Modeling. (3). Provides students experience in solving a variety of financial problems using a modern computer spreadsheet program. Assignments, covering topics from both corporate finance and investments, closely simulate the types of projects faced by financial managers and practitioners. Prerequisites: Fin. 440 and Acc. 260.

Fin. 660. Cases in Finance. (3). An exploration of the problems and operations for which the financial officer is responsible, emphasizing controversial aspects of financial analysis. This is the capstone course in the finance major and should be taken at the end of a finance program. Prerequisites: Fin. 340, 440, 6 hours of accounting, or departmental consent, and junior standing.

Fin. 690. Seminar in Selected Topics. (1-6). Repeatable with departmental consent. Prerequisites: Fin. 340 and junior standing.

Fin. 750. Workshop in Finance. (1-4). Prerequisites: Fin. 340 and junior standing.

Courses for Graduate Students Only

Fin. 810. Short-term Financial Management. (3). Provides state-of-the-art information in short-term financial management. Discusses how cash moves across international borders and within foreign countries and the influence of electronic communications on short-term financial management. Prerequisite: Fin. 840 or equivalent.

Fin. 812. Capital Budgeting. (3). A study of the organization and operation of the capital budgeting system. Explores problems in partial decentralization and in comparability of estimates of funds flow. Includes contemporary methods of treating uncertainties and constraints and the application of programming techniques. Also explains the determination of appropriate discount rates. Prerequisite: Fin. 940 or equivalent.

Fin. 820. International Finance and Investment. (3). Cross-listed as Econ. 870. 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 these courses: Econ. 672 or 674, Mgmt. 561, or Fin. 625.

Fin. 821. Investment Analysis and Portfolio Management. (3). Study of the basic theory and practice of security valuation and investment management. Includes security and portfolio analysis, selection of investment media, and measurement of performance. Prerequisites: Fin. 840 and Econ. 830.

Fin. 822. Risk Management with Options and Futures. (3). Cross-listed as Econ. 847. Discusses the use of futures and options contracts in managing some of the risks associated with business and investment. Also discusses theoretical issues to provide a basis for understanding the practical uses of these securities. Prerequisite: Fin. 840 or equivalent.

Fin. 830. Financial Institutions and Markets. (3). Analyzes the management and operations of firms in the financial services industry. Studies the competitive money and capital markets in which they operate. Emphasizes risk management in the financial institution using a variety of techniques. Prerequisite: Fin. 840 or equivalent.

Fin. 840. Principles of Finance. (3). An intensive analytical introduction to finance from the management viewpoint, including
the theory of financial management, the financial institutional
structure, and an analysis of a variety of practical problems of
business finance. Prerequisite: Acct. 800 or equivalent.

Fin. 850. Managerial Finance. (3). Provides knowledge and
tools to make informed investment and financing decisions.
Includes capital markets, advanced capital budgeting, decision
making under uncertainty, asset pricing models, contingent
claims models, capital structure, dividend policy, mergers,
restructuring, and corporate control and exchange rate systems and international finance. Prerequisite: Fin. 840 or equivalent.

Fin. 860. Cases in Financial Management and Investments. (3). An integrated treatment of basic business
finance, financial management, financial statement analy­sis, and financial institutions. Prerequisite: Fin. 810 or equivalent.

Fin. 890. Seminar in Special Topics. (1-3). Repeatable with
departmental consent. Prerequisite: Fin. 840.

Fin. 891. Directed Studies. (1-6). Prerequisite: Fin. 840 and
departmental consent.

Fin. 893. Special Project in Finance. (1-4). A special project
including original case research supervised internships or field research. Prerequisite: approval of the MS committee. Open only to MS in business degree candidates. Prerequisite Fin. 840.


Human Resource Management (HRM) Department of Management

Courses for Graduate/Undergraduate Credit

HRM 664. Labor Relations. (3). Presents the philosophy underlying labor legislation and the function of collective
bargaining in labor-management relationships. Prerequisite junior standing.

HRM 665. Human Resource Selection. (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
screening and interviewing, also validation of selection tech­niques. Prerequisite: HRM 466 or instructor's consent.

HRM 668. Compensation. (3). Approaches to compensation
practices 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. Prerequisite: HRM 466 or instructor's consent.

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. Prerequisite: HRM 466 or instructor's consent.

HRM 670. Seminar in Selected Topics. (1-3). Repeatable with
departmental consent. Prerequisite: HRM 466 or instructor's consent.

HRM 750. Workshop in Human Resources. (1-4). Prerequisite junior standing.

Courses for Graduate Students Only

HRM 867. Seminar in Personnel Administration. (3). An
in-depth study and analysis of several critical and/or major
issues in the preparation of a human resource management plan. Prerequisite: HRM 466 or instructor's consent.

HRM 868. Wage and Salary Administration. (3). A study of
job evaluation and other procedures that lead to the develop­ment of a sound wage and salary structure. Prerequisite: HRM 466 or instructor's consent.

HRM 890. Seminar in Special Topics. (1-3). Repeatable with
departmental consent.

HRM 891. Directed Studies. (1-6). Prerequisite: departmen­tal consent.


International Business (IB) Department of Management

Courses for Graduate/Undergraduate Credit

IB 600. International Management. (3). Studies manage­ment concepts and practices applicable to business opera­tions in an international setting. Examines a wide range of
problems associated with business operations across
country boundaries. Discusses cultural differences, lan­guage barriers, nationalism, protectionism, trade, and corpo­rate strategy and policy. Prerequisite: Mgmt. 360 or concurrent enrollment and junior standing.

601. Problems and procedures of marketing in foreign coun­tries. Includes the effects of foreign cultures and marketing systems on the design of marketing programs. Pro­erequisites: Mkt. 300 and junior standing.

IB 625. International Financial Management. (3). Cross­listed as Econ. 675 and Fin. 625. A study of the interna­tional financial and monetary system, emphasizing currency markets. Also examines market instruments and tech­niques, including derivatives and synthetic instruments and their application to management of currency risk in inter­national trade and finance. Prerequisites: Fin. 340, Econ.

IB 690. Special Topics in International Business. (3). Covers emerging topics within the field of international
business. Prerequisite: completion of IB 600 and junior standing.

Management (Mgmt.) Department of Management

Courses for Graduate/Undergraduate Credit

Mgmt. 561. Introduction to International Economics and Business. (3). Cross-listed as Econ. 562. A survey of the eco­nomic foundations of international trade and investment. Studies international trade, theory, and policy (the interna­tional economy). Demands the theoretical foundation of the multi­national firm within that environment. Prerequisites: Econ.

Mgmt. 566. Designing Effective Organizations. (3). Studies how work and workgroups can be structured to best
accomplish the goals of an organization. Explores the inter­play of design, technology, strategy, and environment, and
discusses frameworks that promote growth, market responsi­bility, innovation, and global competitiveness. Emphasizes skills necessary to manage change for max­imum effectiveness of individuals, workgroups, and the organization as a whole. Prerequisites: Mgmt. 360 or concurrent
enrollment and junior standing.

Mgmt. 661. Coaching, Developing, and Mentoring. (3). Managers and leaders of all kinds are judged not on what
they do but upon how well they subordinate perform. Course develops positive, supportive management skills for
helping individuals and groups achieve their potential. Covers the importance of identifying and hiring superior per­sonnel, 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 or concurrent enrollment
and junior standing.

Mgmt. 662. Managing Workplace Diversity. (3). Modern organizations face the challenge of managing employees
from diverse backgrounds and talents to provide consistent and successful ingredients. Course examines diversity from the perspective of maximizing benefits to group and organizational effectiveness, including developing skills that facilitate the constructive resolution of conflict, encouraging cooperation and teamwork, and enhancing identification with the work unit. Prerequisites Mgmt. 360 or concurrent enrollment and junior standing.

Mgmt. 663. Building Effective Work Teams. (3). Significant changes in the business environment have motivated wide­spread support for the use of teams to accomplish work­related tasks. Course promotes an understanding of the organizational context of a team culture through an analysis of how teams form and group processes that enhance goal accomplishment. Emphasizes skills necessary to man­
age the organization's culture, improve group performance, and increase collaboration among team members. Prerequisites: Mgmt. 360 or concurrent enrollment and junior standing.

Mgmt. 680. Making Effective Decisions. (3). A study of the theories of decision making with attention to the factors of creativity, the quest for subjective certainty, rationality, cognitive inhibitors, problem identification, evaluation of alternatives, applications of qualitative methods to decision processes, and decision implementation. Prerequisites: Mgmt. 360 or concurrent enrollment and junior 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, and senior standing.

Mgmt. 690. Seminar in Selected Topics. (1-5). Repeatable with departmental consent. Prerequisite: junior 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. Prerequisite: Econ 231 or equivalent.

Mgmt. 812. Introduction to Total Quality Management. (3). Cross-listed as Entre. 812 and Mkt. 812. Introduces the philosophy of quality improvement and compares/contrasts these views with traditional management thought. Also introduces the basic components of the quality improvement process. Includes application exercises in quality improvement techniques and experience with team concept.

Mgmt. 836. International Business Administration. (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.

Mgmt. 860. Management of Organizations. (3). An introduction to management and organizational theory. Includes classical and contemporary management theory, human relations, group dynamics, motivation, communication, organizational structure and design, and behavioral control.

Mgmt. 862. Organizational Behavior. (3). The study of individual and group behavior as it affects organizational functioning. Applies concepts such as motivation, personality, interpersonal relations, upward management, conflict management, and leadership to organizational settings, emphasizing analysis and action-planning. Prerequisite: Mgmt. 860 or departmental consent.

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: Mgmt. 860 or departmental consent.

Mgmt. 869. Research in Behavioral Science. (3). An analysis of some of the concepts and tools in behavioral science relevant to research in organizations. One or two areas such as motivation, cognitive processes, attitudes, and values, etc., may be analyzed in depth. Prerequisite: Mgmt. 862 or departmental consent.

Mgmt. 885. Advanced Strategic Management. (3). An analysis of business problems from a strategic perspective. Builds on prior course work 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. 886. Seminar in Research Methodology. (3). A study of concepts and procedures in the design and performance of research.

Mgmt. 890. Seminar in Special Topics. (1-3). Repeatable with departmental consent.

Mgmt. 891. Directed Studies. (1-5). Prerequisite: departmental consent.

Mgmt. 892. Special Project in Management. (1-4). A special project including original case research, supervised internships or field research. Prerequisite: approval of the MS Committee. Open only to MS in business degree candidates.


Management Information Systems (MIS)

Department of Finance, Real Estate, and 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. Prerequisite: MIS 350.

MIS 650. Problem Solving, Decision Support, and Expert Systems. (3). Introduces the design and implementation of decision support systems (DSS). Emphasize problem solving and decision modeling techniques pertinent to representative problems in different business functional areas including accounting, finance, human resources, management, marketing, and production. Students utilize various end-user tools, including 4GLs, spreadsheets, statistical software, DSS generators, expert system shells, and EIS software to undertake several DSS implementation projects. Prerequisite: MIS 600.

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, organizing the IS department, IS personnel management, IS project management, and the role of IS as a user-support entity. Prerequisite: MIS 600.

MIS 874. Management Information Systems. (3). A study of the structure and the strategic organizational role of computer-based information systems in organizations. Covers transaction processing/accounting information systems, management reporting and executive information systems, decision support and expert systems, and workflow information systems. An information resource management perspective emphasizes issues of building an information architecture, data integration and administration, and managing risk in information systems development efforts.

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, ensuring database integrity, database conversion, database administration, and data management for computer integrated manufacturing. Prerequisite: DS 874 or instructor's consent.

Marketing (Mkt.)

Department of Marketing and Entrepreneurship

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. Prerequisites: Mkt. 300 and junior standing.

Mkt. 604. Distribution Management. (3). A study of all areas involved with the distribution of a firm's products or services. Focuses on such issues as the development of a firm's marketing channels and its relationships with wholesalers and retailers as well as the management of the firm's
storage facilities, inventory control, procedures, and shipping facilities. Prerequisites: Mkt. 300 and junior standing.

Mkt 606. New Product Marketing. (3). Cross-listed as Entre. 606. Addresses identifying, evaluating, developing, and commercializing new products within both smaller and larger firms. Explores the role of the product/brand manager, a person who often acts as an internal entrepreneur. Prerequisite: Mkt. 300.

Mkt 607. Promotion Management. (3). An analysis of all issues involved with the promotion of an organization and its products or services. Deals with the development of advertising campaigns, management of the personal sales force, development of special promotional activities, and management of public relations. Prerequisites: Mkt. 300 and junior standing.

Mkt 608. Selling and Sales Force Management. (3). Cross-listed as Entre. 608. An analysis of current behavioral concepts of personal selling and the problems and policies involved in managing a sales force. Prerequisites: Mkt. 300.

Mkt 609. Marketing Programs. (3). A study of all aspects of the marketing mix that are integrated to make an effective and coordinated marketing program. Prerequisites: Mkt. 300 and 6 additional hours of marketing.

Mkt 690. Seminar in Selected Topics. (1-5). Repeatable with departmental consent. Prerequisite: junior standing.

Mkt 750. Workshop in Marketing. (1-4). Prerequisite: junior standing.

Courses for Graduate Students Only

Mkt 800. Marketing Systems. (3). An intensive analytical introduction to the combination of institutions that comprise the overall marketing system. Also presents the marketing function as a major subsystem within the individual business firm.

Mkt 803. Marketing Management. (3). Develops an understanding of the difference between a sales/marketing department and a marketing orientation. Emphasizes the integral role of marketing orientation throughout the modern organization. Prerequisite: Mkt. 300 or equivalent.

Mkt 805. Consumer Decision Processes. (3). An examination of different aspects of the behavior of consumers and the factors that help explain their behavior. Includes an analysis of current concepts and models. Prerequisite: Mkt. 800 or departmental consent.

Mkt 807. Services and Nonprofit Marketing. (3). Examines the characteristics of commercial and nonprofit services that pose unique marketing challenges for these types of organizations. Prerequisite: Mkt. 800 or equivalent.

Mkt 812. Introduction to Total Quality Management. (3). Cross-listed as Entre. 812 and Mgmt. 812. Introduces the philosophy of quality improvement and compares/contrasts these views with traditional management thought. Also introduces the basic components of the quality improvement process, includes application exercises in quality improvement techniques and experience with team concept.

Mkt 890. Seminar in Special Topics (1-3). Repeatable with departmental consent.

Mkt 899. Directed Studies. (0-5). Prerequisite: departmental consent.

Mkt 893. Special Project in Marketing. (1-4). A special project including original case research, supervised internships, or field research. Prerequisite: approval of the MS Committee. Open only to MS in business degree candidates.


Real Estate (RE)

Mkt 811. Real Estate Finance. (3). Real estate financing instruments, institutions, traditional and creative financing techniques. Risk analysis, mortgage financing and underwriting, primary and secondary mortgage markets. Prerequisite: Fin. 340. RE majors should have completed RE 310.

Mkt 813. Real Estate Investment Analysis. (3). Equity investor decision criteria, institutional and ownership equity investment constraints, financial leverage opportunities, cash flow analysis, and creative income tax strategies. Prerequisite: Fin. 340. RE majors should have completed RE 310.

Mkt 819. Urban Land Development. (3). A hands-on course to familiarize students with all aspects of land development including supply and demand analysis, site selection, feasibility analysis, development financing, cash flow budgeting, and marketing strategies. Prerequisite: RE 310 or 611 or 613.

Mkt 890. Seminar in Selected Topics. (1-4). Repeatable with departmental consent. Prerequisite: junior standing.


Courses for Graduate Students Only

RE 810. Real Estate Feasibility Analysis. (3). Theory and practice of analyzing the feasibility of both new construction and redevelopment of income-producing projects. Approaches detailed comprehensive case studies with contemporary analytical techniques. Prerequisites: RE 310, 414, and 611.


RE 891. Directed Studies. (1-3). Prerequisite: departmental consent.

RE 893. Special Project in Real Estate. (1-4). A special project including original case research, supervised internships, or field research. Prerequisite: approval of the MS Committee. Open only to MS in business degree candidates.


The following abbreviations are used in the course descriptions: L stands for lecture and L for laboratory. For example, RE 21, means 4 hours of lecture and 2 hours of lab.
College of Education

Departments
Administration, Counseling, Educational and School Psychology, (316) 978-3326—Charles Romig, chairperson
Communicative Disorders and Sciences, (316) 978-3240—Harold T. Edwards, interim chairperson
Curriculum and Instruction, (316) 978-3322—Kay L. Gibson, chairperson
Kinesiology and Sport Studies, (316) 978-3340—Lori Miller, chairperson

The College of Education offers programs leading to the Master of Arts (MA) in communicative disorders and sciences; the Master of Education (MEd) in counseling, curriculum and instruction, educational administration, educational psychology, physical education, sport administration, and special education; the Specialist in Education (EdS) in school psychology; the Doctor of Education (EdD) in educational administration; and the Doctor of Philosophy (PhD) in communicative disorders and sciences.

Graduate offerings include courses which help students meet requirements for state certification or licensure as principals, supervisory personnel, district school administrators, school counselors, early childhood teachers, English-as-a-Second-Language/bilingual education teachers, special education teachers, reading specialists, school psychologists, speech and language pathologists, audiologists and gifted teachers. Other programs are available to support the continued academic and professional development of teachers. Graduate offerings also are available to support careers in sport-related businesses and exercise-related programs at all levels.

Admission Requirements
Specific admission requirements for each degree specialization are described in each department's section of the Graduate Bulletin. Applicants for admission should review admission criteria well in advance of intended enrollment dates since some program admissions are determined by a faculty committee once a year or once each semester. 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 are 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 course work (including any post-bachelor’s graduate work). This includes any experience that prepares a student for graduate study. Students should have no more than 9 hours of background deficiencies in the major field of graduate study required. For most degree programs, admission requirements exceed these minimums.

Degree Requirements
Each advanced program of study specifies the number of semester hours of graduate course work required, elective courses, practicum, comprehensive examinations, portfolio, project, and/or thesis requirements. Specific degree requirements are listed on program sheets available from departmental offices. A thesis option in most MA or MEd programs (check departmental descriptions) may be elected. Appropriate topics range from basic to applied action research, and approaches vary from historical to descriptive to experimental, both qualitative and quantitative. Thesis programs typically require a minimum of 30 credit hours, approval of the thesis proposal by the student's graduate advisor and thesis committee, and an oral examination over the thesis topic. The committee is appointed by the student's advisor to determine whether the student should pass an oral examination over their research.

Candidates not choosing to do a thesis are expected to complete a portfolio, comprehensive examination, or project, depending on specific program requirements. Check each department's Degree Requirements section of the Graduate Bulletin for specific non-thesis requirements.

To remain in good standing in a graduate degree program requires a grade point average of at least 3.0 in all courses on the student's course Plan of Study and in all graduate work taken at WSU. 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.

Financial Assistance
Some financial assistance to support graduate study is available, including federal traineeships, assistantships, and Wichita State University fellowships. Full degree status is required to receive financial assistance.

Applications for graduate program admission must be submitted by departmental deadlines for eligibility for student loans and scholarships.

Initial Teacher Certification
Both undergraduates and degree/noneed degree graduates may pursue initial teacher certification/licensure as a teacher (K-12 schools) through Wichita State University. Individuals interested in this should contact the Education Support Services in the College of Education, (316) 978-3300, to inquire about teacher education as a graduate student.

Administration, Counseling, Educational, and School Psychology
Graduate Faculty
Professors: Linda Bakken, Orpha K. Duell, Randolph A. Ellsworth (associate dean), Carol B. Furtwengler, Willis J. Furtwengler, James J. Rhatigan (senior vice president), Charles A. Romig (chairperson), Marlene Schommer-Aikins
Associate Professors: Ian Gibson, W.C. Joseph Mau, Nancy A. McKellar, Randall Turk
Assistant Professors: Marci R. Ginton, Ruth A. Hitchcock, Jean A. Patterson

Degrees and Areas of Specialization
The Department of Administration, Counseling, Educational, and School Psychology offers programs leading to the Master of Education (MEd) in educational administration for students pursuing certification endorsement at the building level, the MEd in counseling, the MEd in educational psychology, the Specialist in Education (EdS) in school psychology, and in all graduate work taken at WSU. Demonstrate 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.

Master of Education Requirements
The Master of Education (MEd) in counseling and in educational psychology may be earned under a thesis or nonthesis option. The nonthesis option in counseling requires 46 credit hours of course work and a written comprehensive examination. The thesis option in counseling requires 54 credit hours of course work plus an oral examination over the thesis. For state certification recommendation in elementary or secondary school counseling, 46 credit hours are required under the nonthesis plan and 54 credit hours are required under the thesis plan. The MEd in educational psychology may be earned under a thesis or nonthesis option. The nonthesis option requires 36 credit hours of course work and a written comprehensive examination. The thesis option requires 32 credit hours of course work plus an oral examination over the thesis. The Master of Education (MEd) in educational administration and supervision is a 33 credit hour nonthesis program. Students pursuing certification endorsement as building administrators must complete this program in its entirety. A comprehensive written examination is required.

Candidates for the nonthesis MEd in 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. The written comprehensive examination is scheduled from 8 a.m. to noon on the second Saturday in October in the fall semester and the first Saturday in March in the spring semester.

Candidates for the nonthesis MEd in educational administration are required to pass a written comprehensive examination. The written comprehensive examination is scheduled on a Saturday toward the end of the fall and the spring semesters.

Applications for admission to the MEd in counseling will be reviewed twice a year, in the fall and spring. Deadlines for submitting applications to the Graduate School will be the first Monday in October for consideration for spring admission and the last Monday in March for consideration for summer or fall admission. All completed applications will be considered for admission within four weeks after the application deadline. In the event that all available openings are not filled from the pool of completed applications, candidates who apply will be considered in the order in which their applications are completed.

Applications for admission to the MEd in educational psychology and educational administration 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—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 course work (including any post-bachelor's graduate work). They must also submit: (a) names, addresses, and telephone numbers of three people to serve as references; (b) a statement of professional goals; (c) a resume; and (d) evidence of completion of 9 credit hours of undergraduate psychology, plus 6 additional undergraduate hours in the behavioral sciences.

Admission to the MEd program in counseling does not require the teaching certificate; however, students whose career goals include Kansas school counseling certification must hold a Kansas teaching certificate and have two years of teaching experience prior to recommendation for school counselor certification. Only people who have been admitted to and have completed the MEd in counseling program at the 46 credit hour nonthesis level or at the 54 credit hour thesis level, hold a Kansas teaching certificate and have two years teaching experience may be recommended for certification as a school counselor.

Admission Requirements—Educational Administration and Supervision

Applicants must have a minimum 3.000 grade point average in their last two years (60 hours) of college course work from accredited institutions and score approximately 480 or above on any two of the three General Tests of the GRE or score approximately 42 or above on the Miller Analogies Test. 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 conferred.
2. Three Reference Report Forms from supervisors and/or professional peers of which at least one must be from a supervisor that attests to the applicant's potential as a building administrator.
3. Evidence of certification for a role in the public/private schools and at least one year of accredited experience.
4. A resume or curriculum vita of education and professional experience.
5. A brief statement of professional goals related to completion of the master's degree and/or certification as a public school administrator.
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.

Admission Requirements—Educational Psychology

To be considered for admission to the MEd in educational psychology, students must provide their grade point average for the most recent 60 credit hours of undergraduate course work; Graduate Record Examination scores (verbal and quantitative); Graduate Record Examination 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. The Graduate Record Examination (GRE) and grade point average (GPA) will be evaluated using the following index:

\[
\text{GPA} + \frac{(\text{GRE Verbal} + \text{GRE Quantitative})}{400}
\]

Ordinarily, applicant's scores on this index will equal or exceed 5.5 and master's degree grade point averages will equal or exceed 3.900. The GPA and GRE index of 5.5 could be achieved by a student who attained a combined verbal and quantitative score on the GRE of 1,000 and a B average over the last 60 credit hours of undergraduate course work.

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 subject review, and final oral examination.

District Educational Administration—Endorsement Requirements

Applicants must have a minimum 3.250 grade point average for the first 30 hours of graduate course work leading to a building-level certification from an accredited institution and a score of approximately 500 or above on any two of the three General Tests of the GRE or a score of approximately 46 or above on the Miller Analogies Test. 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 conferred.
2. At least three recommendations from supervisors and/or professional peers of which at least one must be from a supervisor that attests to the applicant's potential as an administrator.
3. Evidence of certification at the building level for a role in the public/private schools and at least three years of accredited experience.
4. A resume or curriculum vita of educational and professional experience.
5. A brief statement of professional goals related to the completion of the specialist degree and/or certification as a public school administrator.

School Counseling—Endorsement Requirements
The school counseling endorsement program requires 32 credit hours of course work. For state certification recommendation, students must have two years of full-time teaching experience. Applicants must have a minimum 3.00 grade point average for the last 60 hours of course work (including post-bachelor's graduate work). They must submit: (a) evidence of a current teaching certificate; (b) evidence of completion of a master's degree in a related field; (c) names, addresses, and telephone numbers of three people to serve as references; (d) a statement of professional goals; (e) a resume; and (f) evidence of completion of 9 credit hours of undergraduate psychology, plus 6 additional hours in the behavioral sciences.

Doctor of Education
The Department of Administration, Counseling, Educational, and School Psychology offers courses leading to the doctor's degree in educational administration (EdD).

Admission Requirements
Students applying for admission to the EdD program must have completed graduate work equivalent to the master's degree at an accredited institution. Applicants must have a minimum grade point average of 3.500 on a 4.000 scale for all graduate-level hours (i.e., master's and/or specialist degrees) and a score of 500 or above on any two of the three General Tests of the GRE or a score of 46 or above on the Miller Analogies Test. 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 conferred.
2. At least three letters of recommendation from supervisors and/or professional peers which attest to the applicant's potential for success as an administrator.
3. Evidence of building-level and district-level certification for a role as an administrator in the public/private schools and at least three years of accredited experience.
4. A resume or curriculum vita of educational and professional experience.
5. A brief statement of professional goals related to the completion of the doctoral degree in educational administration and certification as a public school administrator.
6. A professional portfolio which includes samples of written or media products disseminated to constituent groups.

Applications for admission are reviewed once a year. Applications must be completed by November 1 in order for candidates to be considered for admission for the following summer. All completed applications are considered for admission by the end of the fall semester. In the event that all available openings are not filled from the pool of completed applications, candidates who apply are considered in the order in which their applications are completed.

A comprehensive screening process is used to select an annual cohort of six students. Students who are selected for the interview process need to ensure: (a) availability to meet all day on Wednesdays, and (b) availability of a Macintosh notebook equipped to meet program requirements.

Completion of requirements includes core courses, a minimum of 15 dissertation hours, final examinations, and an approved dissertation.

Certification Programs
The Department of Administration, Counseling, Educational, and School Psychology provides degree programs and course work that lead to State of Kansas certification endorsement in the following areas:

- Supervisor
- Building Administrator
- District Administrator
- School Counselor
- School Psychologist
- Director of Special Education

Counseling, Educational, and School Psychology (CESP)

Courses for Graduate/Undergraduate Credit

CESP 681. Cooperative Education (1-4). A work-related placement that integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic program. Prerequisite: graduate standing in the department and department chairperson approval. No more than 3 credit hours will be allowed in one Plan of Study. Repeatable for credit. Offered Cr/NCr.

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). An introduction to statistics, including measures of central tendency, measures of variability, correlation, chi square, median test, t test, correlated t test, and one way and two-way analysis of variance.

CESP 707. Child Abuse and Neglect. (1). Acquaints students with the etiological factors, potential indicators, consequences, reporting procedures, and treatment strategies associated with child abuse and neglect. Covers DSM-IV diagnostic categories associated with abuse and neglect.

CESP 718. 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 334 or equivalent, and CESP 701 or equivalent or instructor's consent.

CESP 732. Behavior Management. (3). Presentation and utilization of psychological principles and techniques for dealing with developmental behavior and learning patterns. Emphasizes the preschool and elementary school child. Prerequisite: CESP 334 or equivalent or departmental consent.

CESP 750. Workshops. (1-6).

CESP 752. Special Studies In Education. (1-5). For students with personnel and guidance interests. May emphasize different preselected areas during a semester. Repeatable with advisor's consent. Prerequisite: instructor's consent.

Courses for Graduate Students Only

CESP 802. Introduction to Interaction Process. (1). S/U grade only. 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. Prerequisite: counseling major or departmental consent. To be taken concurrently with CESP 804.

CESP 803. Counseling Theory. (3). A study of selected theories of counseling. Prerequisite: CESP 804 or concurrent enrollment or admission to school psychology program.

CESP 804. Principles and Philosophy of Counseling. (3). The development of a guidance philosophy, including a study of the helping relationship and the services that are part of school, agency, and other institutional settings. Prerequisite: admission to counseling program.

CESP 807. Counseling: Child Abuse and Neglect. (2). The etiology, symptoms and indicators, treatment, and prevention issues of physical abuse and neglect, emotional abuse and neglect, and sexual abuse. Prerequisites: CESP 701, 704, 802, 803, 804.

CESP 808. School Psychology Professional Issues. (3). Examines roles and functions of school psychologists within the context of 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 810. Elementary School Counseling. (3). The role of the elementary counselor in providing individual and group counseling, group guidance, and consultation in the school setting. Prerequisites: CESP 701, 704, 802, 803, 804.


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 lifespan, (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 701, 704, 802, 803, 804.

CESP 819. Social Psychology of Education. (3). A critical study of the individual in social interaction in a variety of educational settings. Application of theory and research to school-related issues and problems.

CESP 820. Learning Theory and Instruction. (3). Applications of some major learning theories and learning principles. Prerequisite: CESP 701 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 helping-seeking attitudes and behaviors, and understanding how the potential sources of cultural misunderstandings, biases, and prejudice may affect their counseling effectiveness. Prerequisites: CESP 701, 803 or 804, 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 701 and 704; counseling students must also have CESP 802, 803, 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, 821, 822, Psy 940, and counseling major or departmental consent.

CESP 825. Group Counseling Techniques. (3). Examines different kinds of groups, group selection, communication patterns in groups, and issues to be addressed in group settings. Prerequisites: CESP 728, 802, 803, 804; Psy 940; and counseling major or departmental consent.

CESP 830. Introduction to Marriage and Family Counseling. (3). A survey course on marriage and family counseling including theory, techniques, and research in the field. Prerequisite: CESP 803 or departmental consent.


CESP 837. Family Issues in Counseling. (2). Teaches basic family processes and how they impact the growth and development of children and adolescents. Covers family systems theory, the family life cycle, cultural and social influences on families, family functioning, the impact of substance abuse on the family, and the unique challenges faced by single parent and blended families. Presents basic family assessment and therapy techniques. Prerequisite: graduate standing.

CESP 840. Psychology of Exceptional Children. (3). Study of the conceptual and theoretical formulations, empirical evidence, and research concerning behavioral characteristics of exceptional children.

CESP 853. 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 consent.

CESP 855. Law, Ethics, and Multicultural Issues for School Psychologists. (2). 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 857. 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 and instructor's consent.

CESP 858. Diagnostic Testing. (3). An in-depth examination of the assessment process. Studies the theories 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 822, 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 822 or departmental consent.


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 866. Practicum in Guidance Services. (2-3). Supervised practice in administration, test interpretation, group counseling, and other activities of the department. Prerequisites: CESP 833 or 810 and instructor's consent.

CESP 867. Practicum in Group Guidance and Counseling Methods. (3). Supervised practice in group guidance and counseling. Repeatable for 3 hours of additional credit. The second practicum must be in a different area or have a different focus from that of the first. Prerequisites: CESP 825, 855, and instructor's consent.


CESP 881. Seminar in School Psychology. (1). Examines current trends and issues within the area of school psychology. Also considers alternative role models for the school psychologist from the standpoint of research and program development in related areas such as special education, general education, and professional psychology. Repeatable to a maximum of 4 hours. Prerequisite: CESP 804 or concurrent enrollment or instructor's consent.

CESP 889. Special Problems. (1-3). Directed reading and research under the supervision of a graduate instructor. Prerequisite: departmental consent.
CESP 903. Counseling Theory II. (3). In-depth critical review of research and applicability of major theories to the evaluation and design of interpersonal intervention strategy.

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.

CESP 915. Intervention Design. (2). Gives the student further experience and skill in utilizing theories of interpersonal relations in creating macro- and micro-learning experience designs for individuals or groups experiencing dysfunctional situations. Stresses individual and organizational effectiveness assessment skills.

CESP 926. Seminar: Selected Topics. (2). Intensive study of current issues, techniques, research, and application of the selected topic. Repeatable for different topics for a maximum of 8 hours. Prerequisite: 15 hours of related graduate course work.

CESP 928. Seminar: Postsecondary Student Services. (2). Intensive study of issues, theories, approaches, and research in topics related to postsecondary student services. Repeatable for different topics for a maximum of 8 hours.

CESP 930. Marriage and Family Counseling II. (3). An advanced course on marriage and family counseling, including theory, techniques, and research in the field. Prerequisite: CESP 803, 830, 30 graduate hours or instructor's 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 822, 855, post-master's standing or last 6 hours of master's program, and instructor's consent.

CESP 944. 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 946. Practicum in Counseling (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 948. Practicum in Marriage and Family Counseling. (3). Prerequisite: CESP 930, graduate-student status, or departmental consent.

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.

CESP 990. Special Problems in Counseling and School Psychology. (1-3). Directed problems in research for EdS students under supervision of a graduate instructor. Prerequisites: CESP 701 and instructor's consent.

Educational Administration and Supervision (EAS)

Courses for Graduate/Undergraduate Credit

EAS 611. Cooperative Education. (1-4). A work-related placement that integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic program. Prerequisite: 2.5 GPA. Repeatable for credit. Offered Cr/NCr.

EAS 750. Experienced Administrator's Workshop. (1-4). Offers a variety of administrative topics.

EAS 752. Special Studies in Educational Administration and Supervision. (1-3). Group study in a preselected specialized area of educational administration and supervision. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

Courses for Graduate Students Only

EAS 803. Seminar: Professional Self-Assessment and Inquiry. (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 administration or instructor's consent.

EAS 805. Practicum: School Opening I. (1). Participants engage in preparing to open their school for the fall semester with their principal/mentor; participate in an inquiry project in their local school; and read and critique current research literature and analyze how that research can assist in their school. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 813. Seminar: Introduction to Educational Leadership and School Finance. (3). Discuss educational philosophy, personal goal-setting, and educational administration models. Includes (a) an examination of educational foundations and the major theories of administration and application to specific problems, and (b) an overview of administration of the school district, especially problems involving the community and staff. Examine theoretical concepts related to financial planning and building resources. Review knowledge necessary to plan and organize work groups, projects, and the resources necessary to carry out day-to-day functional activities of school. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 815. Practicum: Introduction to Educational Leadership and School Finance. (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. Apply financial planning concepts to the school setting and manage the day-to-day financial and other resources allocation to schools. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 823. Seminar: Interpersonal Relations and Supervision. (3). Examine the theoretical concepts related to clinically oriented supervisory models and explicit teaching approaches. Study formative evaluation concepts focusing on performance issues related to actual teaching situations and the teacher's guided analysis of these issues. Review the responsibility of the supervisor for planning and organizing staff development activities. Examine processes involved in the development of interpersonal skills. Engage in simulated exercises to acquire interpersonal skills desirable for group collaboration and communication. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 825. Practicum: Interpersonal Relations and Supervision. (3). Apply the concepts of clinical supervisory models and specific teaching approaches, emphasizing formative evaluation strategies which focus on performance issues generated from actual teaching situations and the teacher's guided analysis of these issues. Cover preparation of the supervisor's role in planning and organizing staff development activities. Apply concepts of formative evaluation and staff development using interpersonal and group process skills. Observe, analyze, and reflect upon supervisory techniques and interpersonal skills in the school setting. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 830. Practicum: School Closing. (1). Engage in closing the school year with a principal/mentor. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 831. Seminar: Human Development and Managing the Learning Environment. (3). Examine developmentally appropriate practices in the classroom for student learning and behavior management. Includes discussion of developmental psychology sufficient to interpret human developmental patterns and their behavioral implications. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 832. Practicum: School Opening 2. (1). For a second time, prepare to open a school for the fall semester with a principal/mentor, and participate in an inquiry project in the local school. Read and critique current research literature and analyze how that research can assist in the school.
Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 833. Seminar: School Law and Personnel Management. (3). Examine concepts related to staffing issues, including selection and recruitment, certification, orientation, staff development, evaluation, transfer and dismissal, and retirement. Cover general concepts of law, interpretations of statutes and court decisions affecting education, and the legal responsibilities of school personnel and professional obligations. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 835. Practicum: School Law and Personnel Management. (3). Apply the concepts related to the selection, recruitment, certification, orientation, staff development, evaluation, transfer, dismissal, and retirement. Apply general legal concepts and statutes to various situations and personal/professional liability. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 842. School Law. (3). General concepts of law, interpretations of statutes and court decisions affecting education, and legal responsibilities of school personnel.

EAS 843. Seminar: Curriculum and Learning Theory (3). Examine theoretical concepts related to curriculum philosophies and developmental processes. Examine recent programs and proposals as well as curriculum development at the building and school system levels. Review techniques of program evaluation and major learning theories and principles. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 845. Practicum: Curriculum and Learning Theory (3). Apply the concepts of curriculum theories and development, emphasizing skills necessary to propose, implement, and evaluate various building programs. Address applications of prevailing major learning theories and principles as they relate to academic and behavioral aspects of the classroom. Prerequisite: admission to the MEd in educational administration or instructor's consent.

EAS 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.

EAS 854. Finance and Facilities Management. (3). Designed for those preparing to become administrators at the school-building level. Focuses upon the knowledge and skills necessary to plan and organize work groups, projects, and the resources necessary to carry out day-to-day functional activities of schools.

EAS 860. Research Seminar in Educational Administration and Supervision. (3). Designed for students in advanced study. Emphasizes development of research proposals and studies. Prerequisite: completion of master's degree or advisor's consent.

EAS 862. Presentation of Research. (1-2). A project submitted in thesis manuscript form. Repeatable for a maximum 2 hours of credit. Prerequisite: EAS 860.


EAS 884. School Plant and Facilities. (3). Planning new educational facilities based upon educational programs. Includes the evaluation of existing schools, remodeling, and operation and maintenance of present school plant. Prerequisite: master's degree or instructor's consent.

EAS 890. Special Problems in Administration. (1-4). Directed problems for master's students primarily under supervision of a graduate instructor. Prerequisite: instructor's consent.


EAS 955. Field Project in Administration and Supervision. (2-6). Field projects are planned to meet a legitimate need in an educational setting in which the student, under professional guidance, can become directly involved. The project may fulfill a community need, a departmental concern, or a needed investigation or inquiry. Acceptable projects are developmental or must include an appropriate research design. A useful, well-documented report of the project is required, with the plan, format, and style approved by the student's committee. Prerequisite: completion of master's degree.

EAS 960. Advanced Administrative Theory Seminar. (3). Examines the relationship between theory and practice in educational administration. Participants consider various theoretical frameworks for empirical studies, program designs, and organizational implementation efforts, and take initial steps toward an integration of those frameworks. Class activities require the application of the constructs and propositions considered to an on-going analysis of school-related problems and the conceptualization of action programs for addressing such problems. Prerequisite: admission to EdD program in EAS.

EAS 971. Decision-Making and Problem-Solving Seminar. (3). Focuses on approaches to identifying, clarifying, and solving various problems in elementary and secondary education. Decision-making and problem-solving models are reviewed, critiqued, and applied. Prerequisites: admission to EdD program; EAS 970 and 986, concurrent enrollment in EAS 982.

EAS 972. Administrative Leadership Seminar. (3). Designed to facilitate in-depth investigations of research relevant to leadership theory and practice. Activities include clarifying and developing personal leadership skills; identifying, fostering, and supporting the leadership skills of others; and conducting observations of leaders in action. Prerequisites: admission to EdD program; EAS 970 and 971, and concurrent enrollment in EAS 986.

EAS 981. Applied Inquiry Seminar I. (3). 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 EdD program in EAS.

EAS 982. Applied Inquiry Seminar II. (3). Continues EAS 981 and provides opportunities for more sophisticated and complex field-based studies. Prerequisite: admission to EdD program in EAS.

EAS 983. Applied Inquiry Seminar III. (3). Continues EAS 981 and EAS 982. Focuses on the development of individualized research plans leading to small group or individual field-based experiences in the second year of doctoral study. Prerequisite: admission to EdD program.

EAS 986. Field-Based Research I. (3). This is the first in a sequence (Fall, Spring, Summer) that provides opportunities for field work leading to EdD dissertation proposal. Prerequisites: admission to EdD program; EAS 981, 982, 983, and concurrent enrollment in EAS 972. EAS 987. Field-Based Research II. (3). Follows EAS 986 and continues field-based research activities and development of dissertation proposals. Prerequisites: admission to EdD program, EAS 986.

EAS 988. Field-Based Research III. (1). Follows EAS 986 and 987 and culminates this field-based sequence. Prerequisites: admission to EdD program; EAS 986 and 987.

EAS 989. Advanced Research Methods in Educational Administration. (3). Prepares students to examine research design techniques appropriate for use in educational administration and specifically for doctoral dissertations, including qualitative and quantitative research methodology, statistical tools and techniques for analysis of data, and examination of software designed to assist researchers in educational administration. Prerequisites: EAS 981, 982, 983, and 986.
Prerequisite: instructor's consent.

EAS 991. Practicum in Educational Administration and Supervision. (1-2). Designed for persons who have been employed in their first administrative position and are seeking recertification in Kansas. Course is individually designed by an EAS faculty member with the student and his/her school district supervisor. Addresses the needs of the student and of the district. Thrust is to assist the student to extend basic skills relevant to a particular administrative assignment. The student must register for 3 hours of credit in EAS 991 to meet recertification requirements. S/U grading only. Prerequisites: completion of master's degree and departmental consent.

EAS 992. Superintendency/Internship. (6). Two-semester course designed primarily for individuals who are completing course work to obtain certification as a district-level administrator. Focuses on the role expectations of district-level administrators, and includes field experiences designed to emphasize knowledge and skill in administrative practices and procedures. Work is designed for each student's projected administrative interest. Students must file an application for this terminal course.

EAS 999. Dissertation Research. (1-6). Taken concurrently with EAS 986, 987, and 988, and for six credits each semester during the last year of enrollment. Provides students with dissertation proposal and dissertation advisement and may be taken for one to six credits per term for a maximum of 24 credits. Up to 17 credits may be counted toward program completion. Prerequisites: admission to EdD program in EAS and required doctoral course work.

Communicative Disorders and Sciences (CDS)

Graduate Faculty
Professors: Barbara W. Hodson, Raymond H. Hull, Rosalind R. Scudder, Carol E. Westby
Associate Professors: Harold T. Edwards (interim chairperson), Julie W. Scherz
Assistant Professors: Zarin Mehta, Lisa A. Scott

Degrees and Areas of Specialization
The Department of Communicative Disorders and Sciences offers courses of study leading to the Master of Arts (MA) 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 and 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 or audiologist in the public schools and for work in hospital clinics, rehabilitation centers, or private practice. With an undergraduate preprofessional major, students normally can complete the master's program in two years. Upon completion, students will be eligible for Kansas licensure and certification by the American Speech-Language-Hearing Association.

Admission Requirements
Admission to the master's degree program is considered for students who have completed an undergraduate major of at least 30 credit hours in the area of speech, language, and hearing disorders or closely allied courses. Admission also requires an overall grade point average of 2.750 and 3.000 or above for the last 60 credit hours of the undergraduate degree program and in the undergraduate major field. Scores for the general aptitude section of the Graduate Record Examination must be submitted. The Graduate Record Examination must be taken within the last five years and the sum of the verbal and quantitative portions of the exam should equal 900 or better. Three letters of recommendation and a personal essay are required.

Consideration for admission to the doctoral degree program requires a master's degree and completion of at least one year of that graduate work with a grade point average of 3.500 or better. Scores for the general aptitude section of the Graduate Record Examination must be submitted. The Graduate Record Examination must be taken within the last five years and the sum of the verbal and quantitative portions of the exam should equal 1,000 or better. Three letters of recommendation and a personal essay are required.

Master of Arts Requirements
The Master of Arts (MA) in communicative disorders and sciences may be earned with an emphasis either in audiology or in speech-language pathology. Both programs require a minimum of 42 hours for completion and offer either a thesis option or a nonthesis option. A plan of study must be filed with the Graduate School after completion of 12 hours of graduate work.

The thesis option requires the presentation and oral defense of an acceptable thesis and the successful completion of the minimum credit hours required for that emphasis. Enrollment in CDS 895, Thesis, or 899, Thesis Research, is required for each semester in which the student is working with a faculty member on thesis research.

The nonthesis option requires a passing score on the Praxis examination and the successful completion of the minimum credit hours required for the program emphasis. The Praxis examination must be taken during the last semester of the student's program and may not be taken during any semester in which the student is on academic probation. Examination results must be officially sent to the department from the testing service for validation. A copy of the student's report will not be accepted as a substitute.

All degree program students must complete two tool subjects, each for 3 credit hours and with a minimum C letter grade. One course is in statistics, and the second is research methods. All students must enroll in a clinical practicum course each semester of enrollment. No more than 8 credit hours in clinical practice may count toward the minimum credit hour requirements for the MA. Clinical competence also must be demonstrated before the completion of the graduate program by meeting the ASHA clock hour practicum requirement for certification in the area of emphasis. Participation in the department's clinical practicum courses requires that students obtain medical clearance prior to the start of each practicum or methods course. Also, graduate students who participate in active clinical practice during the year must purchase professional liability insurance in an amount of not less than $1,000,000-$3,000,000. This must be done on a yearly basis, when appropriate. Details may be obtained from the departmental office, 113 Hubbard Hall, or the clinic office, 162 Hughes Metroplex.

Doctor of Philosophy Requirements
Doctoral students, in conjunction with their advisory committee, develop a Plan of Study which normally consists of at least 95 credit hours, 65 of which must be taken at Wichita State University. Students normally take the qualifying examination in the semester in which they complete the Plan of Study requirements, exclusive of dissertation hours. A minimum of 9 hours of Advanced Practicum will be included in the Plan of Study. Enrollment in CDS 999, Doctoral Dissertation, is required for each semester in which the student is working on dissertation research, including the semester of graduation. The final requirements in the PhD program are the completion of original research and an oral defense thereof.

General

Courses for Graduate/Undergraduate Credit

CDS 540. Senior Seminar. (2). An exploration of theories, principles, practices, and pitfalls of audiology and speech-language pathology emphasizing creating dynamic models for research interpretation, clinical interaction, and professional management. Examines the current educational, professional, and ethical issues in clinical practice.


CDS 625. Introductory Methods and Practicum in Communicative Disorders and Sciences. (2). Techniques and methods for development of clinical skills in a supervised practicum in a supervised practicum setting. Clients with speech, language, and/or hearing disorders are the primary focus. Development of a philosophy of clinical processes includes procedures for therapy, writing behavior objec-
tives and progress, and conducting parent/spouse/ significant other conferences. Prerequisites: 25 clock hours of observation; grade of C or better in CDS 304, 306, 251, 416, 510 (may be concurrent), and 514; 2.750 cumulative and 3.000 GPA in the major; departmental application required one semester prior to enrollment; medical clearance and insurance.

CDS 676. Teaching English as a Second Language (Methods). (3). Discusses current methods of teaching English to nonnative speakers. Students learn to analyze interlanguage patterns and to design appropriate teaching units for class and language laboratory use.

CDS 681. Cooperative Education (1-4). A work-related placement that integrates theory with a planned and supervised professional experience designed to complement and enhance the student’s academic program. Prerequisite: 2.5 GPA. Repeatable for credit. Offered Cr/NCr.

CDS 704. Graduate Issues in Ethics and Practice in Communicative Disorders and Sciences. (1). Provides graduate students as future practitioners a forum to be acquainted with and to review professional clinical issues they may encounter in their careers. Covers issues such as professional ethics, parental rights, managed care, and credentialing. Individualized and group participation stresses need for professionals to deal competently with issues and to understand professional responsibility related to these topics.

CDS 705. Counseling in Communication Disorders. (3). 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.

CDS 740. Selected Topics in Communicative Disorders and Sciences. (1-3). Individual or group study in specialized areas of communicative disorders and sciences. Repeatable.

CDS 750. Workshop in Communicative Disorders and Sciences. (1-4). Offered periodically on selected aspects of communicative disorders and sciences. Repeatable.

CDS 770. Communication Development and Disorders. (3). Identifies communication deviations, differentiating disorders from developmental and/or cultural/linguistic differences. Evaluates potential impact of various communication disorders on academic performance of individuals. Considers strategies for facilitating development of children’s communication skills in educational settings.

Courses for Graduate Students Only

CDS 800. Research Methods. (3). A survey of different research methods utilized in the fields of communication sciences and communication pathology. Students acquire the fundamental motivation, knowledge, and skills for conducting clinical and basic science research and for reading and critically evaluating the clinical research literature.

CDS 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. Prerequisite: instructor’s consent prior to enrollment.

CDS 892. Presentation of Research. (1-3). A directed research project culminating in a manuscript appropriate for publication. Repeatable, but total credit hours may not exceed 3. Prerequisites: CDS 800 and instructor’s consent prior to enrollment.

CDS 895. Advanced Practicum in Communicative Disorders and Sciences. (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.

CDS 940. Advanced Selected Topics in Communicative Disorders and Sciences. (1-4). Advanced individual or group study in specialized areas of communicative sciences and disorders. Intended for doctoral students or advanced master’s-level students. Repeatable.

CDS 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.

CDS 992. Advanced Presentation of Research. (1-3). A directed research project for doctoral students culminating in a manuscript appropriate for publication.

CDS 995. Research Proseminar. (1). A weekly seminar of informal discussion and formal presentation of ongoing or planned research by the CDS faculty and doctoral graduate students. Goal is to provide CDS doctoral students with new and valuable knowledge and insights regarding how real world research is performed. Prerequisite: doctoral student standing.


Speech-Language Pathology

Courses for Graduate/Undergraduate Credit

CDS 501. Speech and Hearing Science. (3). Examination of elements in the chain of events that lead to human communication. Studies speech production and perception at physiological and acoustical levels, emphasizing acoustics. Prerequisite: CDS 111Q.

CDS 510. Introduction to Diagnostics. (3). Provides the principles underlying basic diagnostic processes for speech/language disorders across the life span. Teaches observation techniques, how to take case histories, beginning interview techniques, and how to administer and interpret formal and informal assessment measures. Requires observation of diagnostic procedures in the speech-language-hearing clinic. Prerequisites: CDS 416 and 514.

CDS 514. Speech-Sound Disorders. (3). Discusses basic methods and procedures of identifying, assessing, analyzing, and remediating speech-sound disorders. Practice in phonetic transcription of highly unintelligible speech samples. Prerequisite: CDS 306.

CDS 516. Language III: Introduction to Assessment and Intervention—Birth to School Age. (3). Discussion of current language intervention strategies and programs for infants, toddlers, preschoolers, and school-age children, birth to 8 years. Examination of the development of individual and family plans. Discussion of the multidimensional nature of language and culturally different language patterns. Requires observation of clinical intervention and a laboratory experience. Prerequisites: CDS 416 and 510.

CDS 605. Neurology of Speech and Language I: 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. Prerequisite: at least-senior standing.

CDS 616. The Science of Reading: Current Research in the Identification and Treatment of Dyslexia. (3). Teaches students about the relationship between oral language and reading acquisition. Students will differentially diagnose and apply treatment protocols appropriately to individuals who present with specific reading disabilities. Exposes students to the last quarter century of research from the National Institutes of Child Health and Development (NICHD) centers that demonstrate the significant relationships between explicit and direct teaching of oral language aspects of acquiring reading in a written alphabetic language system. Prerequisite: instructor’s consent.

CDS 780. Communication Disorders in Educational Settings. (2). Organization, administration, and professional relationships in public school speech and language management programs on the elementary and secondary school levels. Emphasizes procedures and materials for surveying, scheduling, writing IEP’s; therapeutic management, record keeping, and utilization of various instructional media. Should be taken prior to student teaching, CDS 821. Prerequisite: prior or concurrent enrollment in CDS 510.

Courses for Graduate Students Only

CDS 801. Advanced Speech and Hearing Science. (3). Advanced study of speech and hearing processes, primari-
ly in their normal aspects. Attention to current understanding of speech generation, the speech signal, and the normal function of hearing. Attention also to techniques of investigation of these processes. Prerequisite: CDS 501 or equivalent or departmental consent.

CDS 810. Neurology of Speech and Language II: Motor Speech Disorders. (3). Studies speech disorders resulting from upper and lower motor neuron lesions in the central nervous system and emphasizes evaluation and treatment strategies for intervention. Prerequisite: CDS 605.

CDS 811. Dysphagia. (3). Covers the disorder of dysphagia as it affects persons of all ages. Addresses normal swallowing in infants, children, and adults. Covers etiologies which cause dysphagia as well as assessment procedures appropriate for various ages. Examines treatment procedures. Covers the importance of team interventions for dysphagia assessment and treatment. Addresses ethical and funding issues. Prerequisite: CDS 605.

CDS 812. Neurology of Speech and Language III: Normal Aging, Aphasia, and Dementia. (3). Examines the continuum of communicative abilities (including speech, language, hearing, and cognition) which may be seen in older persons. Covers normal aging as well as the influence of stroke, dementia, and other neuropathologies on communicative function in the elderly. Prerequisite: CDS 605 or instructor’s consent.

CDS 813. Communication Disorders in Medical Settings. (3). Provides the principles underlying a transdisciplinary teaming approach, emphasizing differential diagnosis and treatment of complex disorders found in medical settings. Discusses the fundamentals of private practice and legal issues in the practice of speech-language pathology. Prerequisites: CDS 810 and 812.


CDS 815. Assistive Technology for Special Populations. (3). Provides information about assistive technology for persons with special needs across the lifespan (e.g., autism, cerebral palsy, and degenerative neurological disease). Considers physical, linguistic, and cognitive factors in the design and implementation of assistive technology resources. Studies augmentative and alternative communication systems and computer applications/modifications. Explores resources for funding.

CDS 816. Language Disabilities in Children and Adolescents. (3). Examination of various approaches to working with children and adolescents with language abilities. Practical application of language assessment procedures, individualized planning, and language intervention strategies. Language in the classroom for school-age children and adolescents and collaborative strategies, multicultural literacy and the multidimensional nature of language in the classroom. Prerequisite: CDS 416 and 516 or departmental consent.


CDS 818. Fluency Disorders. (3). 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. Prerequisites: CDS 300 and 510.

CDS 819. Acquired Brain Injury and Metacognitive Disorders Across the Lifespan. (3). Addresses issues of assessment and treatment of individuals with metacognitive, executive function, and behavioral disorders as a result of brain injury (traumatic, moderate, mild) and/or identified Attention Deficit Disorders (ADD), Attention Deficit with Hyperactivity Disorders (ADHD), Developmental Dyslexia (DD), Acquired Dyslexia (AD), and Specific Linguistic Impairments (SLI) influencing processing and production of narrative and discourse skills in oral and written language. Prerequisites: CDS 605 or equivalent and instructor’s consent.

CDS 820. Graduate Methods and Practicum in Speech and Language Evaluation. (3). Discusses clinical methods for evaluation and diagnosis of children and adults presenting with speech and/or language disorders. Prerequisites: CDS 510, medical clearance, and insurance.

CDS 821. Graduate Methods and Practicum in Educational Settings. (7). Discussion and evaluation of student teaching experiences in public schools, demonstrations of applied clinical skills, counseling on the elementary and secondary school levels. Prerequisites: CDS 780 and 816, instructor’s consent one semester prior to enrollment, medical clearance, and insurance.

CDS 822. Beginning Graduate Methods and Practicum in General Clinic. (2-4). Provides an opportunity to relate theories and methods for students’ assigned practice through discussion of various management techniques and methods with regard to different types of communication disorders and to provide support for the present clinical experience. Prerequisites: CDS 625, medical clearance, and insurance.

CDS 823. Graduate Methods and Practicum in Medical Settings. (4-6). Class discussions cover various topics pertaining to hospital and adult care practice experiences. Relates theory and methods to student’s practicum assignments. Prerequisites: CDS 813, department approval one year prior to enrollment, medical clearance, and insurance.

CDS 824. Graduate Methods and Practicum for External Placements. (2). Techniques and methods for development of clinical skills in a supervised external practicum setting. Focuses on clients with language and speech sound disorders. Development of a philosophy of clinical processes includes procedures for therapy, writing behavior objectives and progress, and conduction of parent conferences. Supervised practicum of clinical assignments in off-site settings. Prerequisites: department approval one semester prior to enrollment, medical clearance and insurance.

CDS 825. Graduate Methods, Practicum, and Diagnostics in Autism Spectrum Disorders. (2-4). Techniques and methods for development of clinical skills in a supervised practicum setting. Primary focus on children with social language disorders. Practicum issues relate to current client needs. Prerequisites: CDS 516, 816 (can be concurrent), instructor’s consent, medical clearance, and insurance.

CDS 826. Graduate Methods, Practicum, and Diagnostics in Language and Literacy. (2-4). Techniques and methods for development of clinical skills in a supervised practicum setting (in the WSU Speech-Language-Hearing Clinic, "After-School Program," and the College of Education's Assessment, Intervention Multi-Disciplinary (AIM) program). Primary focus on clients with language (oral and written) and literacy disorders. Development of a philosophy of clinical processes includes procedures for therapy, writing behavior objectives and progress, and conduction of client conferences. Prerequisites: CDS 817, departmental consent one semester prior to enrollment, medical clearance, and insurance.

CDS 827. Graduate Methods, Practicum, and Diagnostics in Voice. (2-4). Techniques and methods for development of clinical skills in a supervised practicum setting (in the WSU Speech-Language-Hearing Clinic). Primary focus is on clients with voice disorders. Development of a philosophy of clinical processes includes procedures for therapy, writing behavior objectives and progress, and conduction of client conferences. Prerequisites: CDS 817, departmental consent one semester prior to enrollment, medical clearance, and insurance.

CDS 828. Graduate Methods and Practicum in Fluency. (2-4). Develops advanced clinical skills in the diagnosis and treatment of children and adults presenting fluency disorders. Prerequisites: CDS 818, departmental consent one semester prior to enrollment, medical clearance, and insurance.

CDS 829. Graduate Methods and Practicum in Accent Modification. (2). Lecture and discussion of techniques for foreign accent and dialect modification. Relates techniques to students’ practicum experience in CDS 570. Attendance in CDS 570 required. Prerequisites: CDS 625, 822, departmental consent one semester prior to enrollment, medical clearance, and insurance.

CDS 830. Graduate Methods and Practicum in Early Language. (4). Techniques and methods for development of clinical skills in a supervised early childhood interdisciplinary...
nary preschool practicum setting. Primary focus on preschool children with language disorders. Development of a philosophy of clinical processes includes procedures for group and classroom therapy, writing behavior objectives and progress, and conduction of client conferences. Prerequisites: departmental consent one semester prior to enrollment, medical clearance, and insurance.

CDS 900. Speech Acoustics. (3). A detailed analysis of the acoustics of speech. Studies the various theories of speech sound production along with the instrumental analysis of speech sounds and ends with an examination of various speech disorders from the point of view of acoustics. Prerequisite: CDS 801.

CDS 903. Speech Perception. (3). A critical review of the theories and empirical research addressing the perception of speech, species-specific communication, and speech recognition systems through artificial intelligence. Discusses both unimodal and bimodal models of perception. Prerequisite: CDS 900.

CDS 904. Speech Physiology. (3). A critical review of pertinent research concerning the physiological bases of speech. Emphasizes understanding the instrumental techniques utilized in such studies. Prerequisite: CDS 801.

Audiology

Courses for Graduate/Undergraduate Credit

CDS 655. Graduate Methods and Practicum in Auditory Assessment-SLP. (2). Methods in audiologic evaluation for speech and language pathology students. Discusses procedures for diagnostic evaluation of a broad range of auditory disorders in infants, children, and adults in weekly class meetings, along with procedures for hearing screening, hearing aid maintenance and fitting, counseling, and others as appropriate. Speech and language pathology students engage in practicum experiences in audiologic screening and assessment as arranged. Prerequisites: CDS 251 and 351, medical clearance, and insurance.

Courses for Graduate Students Only

CDS 802. Anatomy and Physiology of the Auditory System. (2). Examines in detail anatomy and function of the auditory system in light of current research knowledge. Studies the normal system as a basis for understanding the pathological system. Prerequisites: CDS 251 and 501.

CDS 803. Introduction to Psychoacoustics. (2). Basic principles underlying the perceptual hearing process, emphasizing the interdependencies between sound stimuli and subjective auditory experience as related to communication behavior. Prerequisite: CDS 802.

CDS 804. Clinical Audiology I (4). Provides in-depth theoretical and clinical principles associated with the administration and interpretation of the basic comprehensive audiological test batteries. Provides hands-on learning of audiological equipment and test batteries in tandem with the theoretical background for auditory assessment. Prerequisites: CDS 251 and 351.

CDS 805. Clinical Audiology II (3). Discusses diagnostic and rehabilitative procedures in the audiological clinic. Includes application of theoretical clinical principles toward the administration and interpretation of site-of-lesion and other special tests of auditory function beyond the traditional auditory test battery. Prerequisite: CDS 804.

CDS 851. Medical Audiology. (3). Many hearing disorders require evaluation/treatment by both the audiology and medical professions. Reviews the audiological and physiological/medical aspects of the more common of these conditions found in children and adults. Prerequisites: CDS 251 and 802.


CDS 858. Electrophysiologic Audiology. (4). Techniques and procedures for administration and interpretation of electrophysiologic tests of the auditory system, including otoacoustic emissions (OAEs), electrocochleography (ECog), auditory brainstem response (ABR, AEP), later occurring cortical evoked potentials (MLR, LAEP, P300), and somatosensory evoked response testing (SEP). Addresses interoperative monitoring and imaging techniques. Techniques and procedures for clinical evaluation of the functional status of the peripheral and central nervous system in relation to the vestibular or balance system (ENG). Prerequisite: CDS 802.

CDS 860. Amplification and Hearing Aids I (3). Reviews basic electronics as it applies to amplification systems. Encumbrates the history, function, and maintenance of hearing aids. Addresses the measurement and significance of electrophysiologic characteristics. Presents the principles and procedures for the selection and recommendation of specific amplification systems for individual’s hearing losses. Provides review of recent developments in research involving the measurement of real ear insertion responses and real ear effects of hearing aid modifications, as well as acquired competency in application of real ear testing. Discusses counseling and techniques related to hearing aid fitting.

CDS 861. Amplification and Hearing Aids II (3). Reviews basic electronics as it applies to amplification systems. Encumbrates the history, function, and maintenance of hearing aids. Addresses the measurement and significance of electroacoustic characteristics. Presents the principles and procedures for the selection and recommendation of specific amplification systems for individual’s hearing losses. Provides review of recent developments in research involving the measurement of real ear insertion responses and real ear effects of hearing aid modifications, as well as acquired competency in application of real ear testing. Discusses counseling and techniques related to hearing aid fitting. Prerequisite: CDS 860.


CDS 865. Graduate Methods and Practicum in Aural Rehabilitation. (2). Provides students with experiences in the provision of aural habilitation/rehabilitation on behalf of children and adults who possess impaired hearing. Prerequisite: CDS 864 (can be concurrent).

CDS 866. Aural Rehabilitation (2). Practicum experiences encompassing diagnostic evaluations covering a full range of auditory disorders and types of evaluations in infants, children, and adults, including standard audiologic batteries, masking, site-of-lesion testing, electrophysiologic measurements, hearing aid fitting and dispensing, patient follow-up, and counseling. Prerequisites: audiology faculty’s consent, medical clearance, and insurance.

CDS 866. Advanced Practicum in Auditory Assessment-Aud. (1). Practicum experiences encompassing diagnostic evaluations covering a full range of auditory disorders and types of evaluations in infants, children, and adults, including standard audiologic batteries, masking, site-of-lesion testing, electrophysiologic measurements, hearing aid fitting and dispensing, patient follow-up, and counseling. Prerequisites: audiology faculty’s consent, medical clearance, and insurance.

Curriculum and Instruction (CI)

Graduate Faculty

Professors: Jeri A. Carroll, Jon M. Engelhardt (dean), Bryant P. Fillion, Michael A. James, Dennis J. Kear (graduate coordinator, special education)

Associate Professors: Peggy J. Anderson (associate dean), Frances L. Clark, Constanza Haack, Tonya Huber (graduate coordinator, curriculum and instruction), Twyla G. Sherman, Johnnie Thompson, Catherine G. Yeotis
Degrees and Areas of Specialization
The Department of Curriculum and Instruction offers courses of study leading to the Master of Education (MEd) in curriculum and instruction and the MEd in special education (early childhood, gifted, and mildly handicapped). The department also provides course work leading to endorsement in early childhood education, early childhood handicapped, gifted education, middle level education, teaching English to speakers of other languages (TESOL), and reading.

Admission Requirements
In addition to the Graduate School admission requirements, students seeking the MEd in curriculum and instruction 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. Take the Graduate Record Exam and score a minimum of 917 on any two of the subtests, or take the Miller Analogies Test and score a minimum of 40; or
   d. Provide alternative evidence that documents academic aptitude.

(2) Provide evidence of involvement in curriculum development or teaching.
   The special education degree with an emphasis in gifted and mildly handicapped conditions is available for people certified at the elementary and/or secondary teaching level with successful teaching experience in a regular classroom setting. The special education degree with an emphasis in early childhood is also available for people entering with a bachelor's degree from a related program (e.g., CDS, PT, OT, social work, and nursing). Admission requirements include:
   (1) GPA of 3.000 or higher in the last 60 hours; or GPA of at least 2.750 and GRE score on any two subtests that yields an index of at least 5.4 computed by the following formula:

   GPA + GRE scores (any two subtests) \leq 4.0

   or a score of 40 or more on the Miller Analogies Test.
   (2) Current Kansas teaching certificate
   Note: Students with a BA from a related area must also have minimum scores on the Pre-Professional Skills Test (PPST) of 172 in writing, 173 in reading, and 174 in math. The computerized version of this test is acceptable for entering the MEd in special education/early childhood.

Applications are evaluated on April 15, July 1, and December 1 for the MEd in special education. Only a limited number of students is accepted into this program.

Master of Education Requirements
The Master of Education (MEd) in curriculum and instruction is a 36-credit hour program. Students must complete either a thesis option or a portfolio option. Students complete 17 credit hours of required courses in curriculum and instruction, research and research problems. They also complete 12 hours in a self-selected area of specialization, 3 hours in a course related to their particular thesis or portfolio project and 4 hours in thesis or portfolio work.

The MEd in special education may be earned under a thesis option or a nonthesis option. The nonthesis option requires 40 credit hours of course work and a written comprehensive examination. The thesis option requires 37 credit hours of course work, 6 hours of thesis work and an oral examination on the thesis.

Courses for Graduate/Undergraduate Credit
CI 541. Desktop Publishing I. (3). Desktop publishers control the entire publishing process, from creation and typesetting to printing and distribution, with equipment from the desktop. Word processing on the personal computer and laser printing are 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 615. Learning and Reading Strategies. (3). Students are provided with the 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 participate in extensive reading of literature in all genres consistent with studies of adolescents; reading interests, abilities, and responses to literature. Prerequisite: Acceptance into teacher education. Current and previously certified teachers meet prerequisites.

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 their needs. Students examine many curricular and instructional alternatives for middle grades education and learn to manage changes.

CI 701. Foundations of Education. (3). 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 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 outcomes. Prerequisite: graduate standing.

CI 706. Reflective Inquiry Into Learning, Teaching, and Schools. (3). 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, CESP 701.

CI 708. Current Topics in Curriculum. (1-3). Addresses a broad range of topical issues in curriculum development and implementation. A current issue will be 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 will be covered under this course number, an umbrella number for a variety of topics/innovations in instructional practices. Repeatable.

CI 710. Current Topics in Classroom Management. (1-3). Addresses a broad range of topical issues in current classroom management practices. A current issue will be covered under this course number, an umbrella number for a variety of topics/innovations in classroom management. 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 responsive pedagogy. Prerequisite: graduate standing or departmental consent.

CI 712. Environmental Education. (3). Provides basic information on environmental issues which can be addressed in
the classroom. Become familiar with a wide range of resources for both teachers and their students. Stresses applying environmental issues to everyday teaching.

CI 713. Agriculture in the Classroom. (2). K-12 teachers learn about agriculture and develop ways to integrate that information into their everyday teaching. Includes presentations, field trips, and projects showing how the food chain industry touches every person’s life. Teachers learn to integrate agricultural information into existing teaching basic subjects like math, language arts, social studies, science, art.

CI 714. Reading Instruction and Assessment. (4). Helps students create instructional environments; teaches phonemic awareness, word identification (including phonics), vocabulary-building skills, strategies for comprehension and the construction of meaning, and study strategies; and assesses student performance and progress. Prerequisite: CI 705 or departmental consent.

CI 716. Introduction to School Librarianship. (3). Introduces the role of the library and the librarian in the school. Studies issues affecting school libraries and librarians. Prerequisites: teacher certification and acceptance into graduate study in curriculum and instruction or departmental consent.

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 718. Acts of Qualitative Inquiry in Education. (3). Through guided experiences and fieldwork in acts of inquiry in qualitative research, graduate students develop and employ the skills of the reflective, qualitative inquirer. Prerequisite: CI 717 or departmental or instructor’s consent.

CI 723. Analysis and Management of Behavior. (3). Covers behavior management strategies specifically needed by classroom teachers to effect academic and social outcomes. Addresses technical, theoretical, and practical aspects of applied behavior analysis. Prerequisites: CI 320 or 702 and CI 430 or 711 or equivalent.

CI 724. Methods I: Academic and Cognitive Skills, Mild Exceptionalities. (3). Introduces students to specific techniques for improving the cognitive skills and academic performance of students with mild exceptionalities (learning disabilities, emotional disturbances/behavior disorders, or mental retardation). Includes competencies for (a) teaching readiness, cognitive, and academic skills as well as content to students with exceptional learning needs; (b) basing instructional decisions on data; (c) determining where to begin instruction for students with special needs; (d) instructional management and monitoring strategies; and (e) strategies for working with students with exceptional learning needs in general and special education settings. Prerequisites: CI 320 or 702, CI 430 or 711, admission to the Teacher Education Program or to the graduate program in special education as a non-degree-seeking student, or instructor’s consent.

CI 725. Improvement of Instruction in Science. (3). Students identify and explore the principles of science that teachers should recognize, understand, and consider from K-9. Prerequisite: CI 402.

CI 726. Information Technologies in the School Library I. (3). Introduces a wide range of information technology applications, including word processing, database, spreadsheet, and presentation software. Emphasis on using these applications in a library setting. 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 727. Information Technologies in the School Library II. (3). Introduces 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 basics of local area network design Presents methods of using technology with students including CD-ROM, laser disk, and video. Students learn the basics of media production and strategies for teaching media production to students. Also looks at the future of technology in school libraries. Prerequisites: CI 726.

CI 728. Organization of Information Resources. (3). Introduces the organization of information resources in the school library. Includes the organization and cataloging of print and non-print materials in US MARC format, how to assign Dewey Decimal Classification numbers and subject headings, how to identify the sources for copy cataloging records, and the importance of authority control in a library. Prerequisites: CI 726 and 727.

CI 729. Reference Materials. (3). Provides skills in evaluating and using indexes, bibliographies, encyclopedias, dictionaries, and other print and electronic media, including the Internet. Prerequisite: CI 716.

CI 730. Curriculum in the School Library. (3). Gives students knowledge about the role of the school library in curriculum. Addresses how the school library media specialist teaches information literacy to students and staff. Prerequisite: CI 716.

CI 731. The Reflective and Inquiring Educator. (6). Builds a foundation for reflective thinking about (a) the role of the educational practitioners; (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. (3). Provides information and examples on ways to effectively manage a library. Covers budgeting, grants, policies, procedures, and collection/seLECTION/deselection. Prerequisite: CI 716.

CI 734. Alternative Certification Internship I. (3). In the alternative teacher certification program, this internship replaces the required student teaching assignment for the purposes of certification. Students teach half-time or more with a provisional certificate. Credit is given for a combination of (a) the teaching experience and (b) attendance and the completion of assignments in the scheduled seminars. Prerequisites: employment by a school district and completion of course work for provisional teacher certification.

CI 735. Alternative Certification Internship II. (3). Continuation of CI 734. Prerequisite: employment by a school district and completion of course work for provisional teacher certification.
CI 746. Alternative Certification Internship III and IV. (1).
Continuation of CI 743 and 744. Prerequisites: employment by a school district, CI 743 and 744, and admission to MEd in CI.

CI 747L. Practicum: ESI/Bilingual Education (K-12 or adult). (3). Provides full-time participation in an ESI class supervised by a master teacher and a University professor. Focuses on the application of teaching methods for ESI/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 430 or 711, CI 755U, CDS 676.

CI 748. Alternative Certification Internship III. (3).
Continuation of CI 743 and 744. Prerequisites: employment by a school district, CI 743 and 744.

CI 749. Alternative Certification Internship IV. (3).
Continuation of CI 743 and 744. Prerequisites: employment by a school district, CI 743, 744, and 748.

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 760. Parent Education. (3). An introduction to ways of working with parents of preschool and elementary children and an analysis of formal and informal approaches emphasizing the teacher's role in developing these procedures.

CI 761. Early Childhood Education. (3). Students examine programs, problems, and philosophy of educating children in the preschool years. Prerequisite: admission to the Teacher Education Program.

CI 762. Instructional Strategies: Preschool Education. (3). Students examine the content and methods of instruction in preschools and observe/teach in a variety of settings. Students study teaching methods for preschool children and prepare materials to enhance the learning experiences of these children. Prerequisite: CI 761.

The basics of how computers process, store, and retrieve data. All educators seeking a computer specialization should take this course early in their sequence of course work toward that specialization. Educators who want to know more about computers gain a basic knowledge base that will be helpful in other computer-related courses.

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 790C. Computers and the Young Child. (1).
Learn to use the computer with children in preschool through second grade. Appropriate software is evaluated and used in planning for instruction. Prerequisite: instructor's consent.

CI 790L. Computers in Language Arts. (2).
Enables classroom teachers to utilize computers and related technology in the language arts curriculum. Appropriate software is evaluated and used in planning for instruction. Prerequisite: instructor's consent.

CI 790M. Computers in the Math Classroom. (1).
Focuses on the integration of software programs designed for middle and high school mathematics classrooms. Explore software and instructional activities which support math at the middle and high school levels using Apple Ile and Macintosh systems. Prerequisite: instructor's consent.

CI 790S. Internet in the Classroom. (3).
Introduces classroom teachers to application of computer technology, CD-ROM, and laserdisc technology in the science curriculum. Appropriate software is evaluated and used in planning for instruction. Prerequisite: instructor's consent.

CI 790S. Social Skills for Mild Exceptionalities. (3).
Introduces the design and management of instructional activities related to the use of computers in the classroom. Includes decisions and management of instructional activities related to software integration, programming, and the development and assessment of computer-related student competencies. Students will be supervised in the field while they apply methods and principles of computer-related instruction. Prerequisite: CI 772M or 772P or department consent.

CI 793. Multimedia in the Classroom. (2).
Prepares educators to plan and create multimedia presentations. Includes digitizing audio and video, storyboards, scripting, appropriate hardware, and authoring software.

Courses for Graduate Students Only

CI 802. Seminar on Current Issues in Special Education. (3).
Analyzes and critiques research, integrates understandings, evaluates current issues in light of historical events, and draws conclusions relating theory to practice. Students make oral and written presentations. Prerequisite: within 6 hours of graduation, CEISP 701.

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 807. Philosophy, History, and Psychology of Secondary and Elementary Education. (3).
Students survey of concepts of mind, learning, experience, and knowledge, and philosophical, historical, and psychological systems and theories as they relate to current educational problems and practices. Prerequisite: CI 701.

CI 809. Foundations and Characteristics of Mild Exceptionalities. (3).
Introduces students to the principles, concepts, and historical foundations underlying the provision of services for students with mild exceptionalities. Examines characteristics of students identified as having behavior disorders, learning disabilities, or mental retardation. Discusses legal and ethical principles related to various delivery approaches, and examines roles of the students with exceptional learning needs, their parents, and educators as well as related services and community personnel. Discusses current developments in the field of special education. Prerequisites: CI 320 or 702, CI 430 or 711, CI 723 and 724, and full admission to the MEd program in special education; or instructor's consent.

CI 810. Methods II: Social Skills for Mild Exceptionalities. (3).
Provides the knowledge and skills necessary to teach social skills and affective education to childrens and youth with exceptionality. Prerequisites: full admission to the graduate program, CI 723, 724, 809, and 887. Permission from the instructor for majors in other master's degree program.

CI 811. Family and Professional Collaboration. (3).
Assists the special educator in developing the skills to collaborate and consult with parents, siblings, regular educators, sup-
port personnel, and community agencies to facilitate the
needs of children 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 post-secondary settings and independent functioning.
Discusses roles of individuals with exceptional learning
needs, parents, educators, and community personnel.
Prerequisites: CI 809, full admission to the MEd program
in special education, or instructor's consent.

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. Current Issues in Special Education. (3). Examines
theoretical, structural, and technological methodologies related
to the education of children with exceptionalities. Includes
opportunities to apply various theoretical, structural,
and technological methodologies related to
the education of exceptional learners within the classroom.
Prerequisites: CI 723, 724, 809, and 887. Permission from the instructor for majors in other master’s degree programs.

CI 842. Early Childhood Special Education: Methods:
Infants/Toddlers and Families. (3). Provides specific tech-
niques needed to provide services, supports, and accom-
modations for infants/toddlers and their families who face
challenges of developmental disabilities. Includes com-
petencies within early childhood special education for
(a) legal foundations (IDEA Part C), (b) collaborating and
forming partnerships with family members and other profes-
sionals, (c) typical and atypical developmental patterns,
(d) child assessment, diagnosis, and evaluation, (e) family
assessment and evaluation, (f) family service coordination,
(g) development of Individualized Family Service Plans
(FSP), (h) family-centered intervention strategies, (i)
instructional content and practice, (j) planning intervention
strategies in natural environments, (k) transitions for
infants/toddlers and families, and (l) professional and eth-
cractical practices. Prerequisites: CI 702, CI 740, full admission
to the MEd in special education program, or instructor’s consent.

CI 843. Leadership and Sustained Professional Growth.
(4). Emphasizes commitment to and application of profes-
sional leadership in curriculum and instruction and/or
school improvement. Sustained exploration of topics from
CI 731, 804, and 837 expected. Prerequisite: CI 857.

CI 845. Curriculum Models and Practices. (3). 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 frame-
works in today's classrooms and schools. Prerequisites:
full admission to MEd in Curriculum and Instruction program,
CESP 701.

CI 847. Practicum/Internship in Special Education. (1-10).
Provides students with participation in a class for early
childhood handicapped (847A), children/adolescents with
learning disabilities (847B), educable mental retardation
(847C), or behavior disorders (847D) supervised by a
University professor, emphasizing applied teaching meth-
ods for students with mild exceptionalities, including for-
mal-informal psycho-educational assessment devices, cur-
riculum strategies, behavior management, and prescriptive
remediation for academic deficits. Prerequisites: full ad-
mission to MEd program in special education and completion
of all core courses needed for provisional endorsement in
specialty areas.

CI 847R. Practicum: Regular Early Childhood. (3).
Provides opportunities in a traditional setting for the student to
participate in a practicum experience, delivering developmental and
corrective reading instruction in a classroom setting.
Prerequisite: CI 705.

CI 852. Collaborating and Refining Problem-Solving Skills. (6).
This integrated class guides students in imple-
menting 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.

CI 854. 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 relat-
ed to teaching reading and to oral, written, and visual communica-
tion including "school" writing and creative writing. Students select particular concepts and related skills for special attention.

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, reflex,
tive inquiry into the implications of those frameworks in
today's classrooms. Prerequisite: CI 706.

CI 856. Improvement of Instruction in Mathematics. (3).
Students examine recent trends in subject matter content
and teaching guides to improve understanding of mean-
ings, vocabulary, and mathematical concepts. Includes
instructional methods and materials.

CI 861. Seminar in Special Education Research. (3).
Development and presentation of research proposal.
Prerequisites: admission to MEd in Special Education, CESP 701.

CI 862. Professional Portfolio Development. (2). Students
develop the professional portfolio proposed and accepted
in CI 860. In consultation with their portfolio advisor and
two other faculty members, students proceed with their
approved agendas. Prerequisite: CI 860.

CI 863. Presentation of Professional Portfolio. (2). Students
complete, present to their faculty portfolio com-
mittee, and orally defend the professional portfolio pro-
posed in CI 860. Prerequisites: CI 860 and 802 (or concurrent enrollment in CI 862).

CI 870. Trends in Early Childhood Education. (3). Students
analyze current early childhood education research with an
in-depth study of contemporary programs influencing the
education of young children.

CI 875-876. Master's Thesis. (2-2). Students complete their
research proposal that was accepted by their thesis commit-
tee. Also required is the completion and oral defense of the
student's thesis. Students work closely with their advisor
and committee. Students need an additional semester to
satisfy these requirements should enroll in CI 876. Students receive credit for course(s) when their thesis has been completed and defended. Prerequisite: CI 860.

CI 883. Methods in Teaching the Gifted. (3). Students examine strategies and techniques for planning qualitatively differentiated curriculum to meet the unique academic needs of the gifted learner. Students explore a variety of curriculum approaches including acceleration, enrichment, compacting, grouping, and combinations of these. Prerequisite: CI 725.

CI 887. Assessment and Analysis of the Learner. (3). Students learn the application of standardized and informal evaluation techniques including critical evaluation of standardized tests and 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. Prerequisites: CI 320 or 702, 430 or 711, 723 and 724, full admission to the MEd program in special education, or instructor's consent.

CI 889. Action Research in Special Education. (3). Students learn the process of classroom inquiry and reflection through the use of action research. Students identify a curriculum or instruction question related to special education settings. Through research, students seek to answer the question and prepare a paper to disseminate findings to professional colleagues. Prerequisites: Completion of the Core 1 provisional sequence in one of the MEd in Special Education specializations. For mild exceptionalities: CI 723; 724; 809; 847E, 1 or K 847F; and 887. For early childhood special ed: CI 740, 741, 842, 847A Practicum, and 887. For gifted education: CI 735, 847M Practicum, and 883.

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 this rapidly developing field. Prerequisites: CI 740, 741, 842, 847A, 887, and 892 or instructor's consent. Repeatable for credit.

Kinesiology and Sport Studies (KSS)

Graduate Faculty

Professors: Lori K. Miller (chairperson), Susan K. Kovar (interim dean, Graduate School)

Associate Professor: Pamela J. Hoyes Beehler

Assistant Professors: Greg Comfort, Colleen Evans-Fletcher, Richard E. Laptad, Michael Rogers, Clay Stoldt, Frank Wyatt

Degrees and Areas of Specialization

The Department of Kinesiology and Sport Studies offers courses of study leading to the Master of Education (MEd) in sport administration or in physical education with a concentration in either pedagogy or exercise science. Academic training is provided for students who wish to prepare for careers in physical education programs in public schools and universities, for careers in exercise science/wellness, and for careers in sport administration.

Admission Requirements

Admission to the master's degree program in physical education 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 undergraduate course work including any post-bachelor's graduate work. Students selecting the physical education major may be required to take prerequisites prior to full standing admission.

Admission to the master's degree program in sport administration requires an earned undergraduate degree from a regionally accredited institution and a grade point average of at least 3.125 (4.000 system) for the last 60 semester hours in which grades were given or a grade point average of 2.750 (4.000 system) and a cumulative score of 950 or better on any two of the three sections of the Graduate Record Exam. Students also must submit a letter of application and three letters of recommendation.

Master of Education Requirements

The Master of Education (MEd) in physical education may be earned under a 33 credit hour thesis option or a 36 credit hour nonthesis option. The exercise science/wellness program offers a 34 hour thesis option and a 36 hour nonthesis option. The thesis option requires an oral examination on the research; the nonthesis option requires a written comprehensive examination.

The MEd program in sport administration requires 30 hours of course work, a 6-hour internship, a completed culminating project, and a final written examination.

Graduate Certificates

Students seeking a graduate certificate must be admitted to the Graduate School in a degree program or in non-degree, 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 to assist older adults in retaining sufficient levels of functional ability and to understand the physiologic changes that occur with aging and how these changes impact 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 their career plans.

The program consists of 13 hours of course work:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>KSS 780, Physical Dimensions of Aging or Geron 715, Adult Development and Aging</td>
<td>3</td>
</tr>
<tr>
<td>Psy. 508, Readings in Functional Aging or KSS 895, Applied Research</td>
<td>3</td>
</tr>
<tr>
<td>Psy. 947, Seminar in Perception or Geron 812, Normal Aging, Aphasia, and Dementia</td>
<td>3</td>
</tr>
<tr>
<td>Psy. 620, Seminar in Human Factors Psychology or Geron 798, Perspectives in Aging</td>
<td>3</td>
</tr>
<tr>
<td>Psy. 911, Seminar in Aging</td>
<td>1</td>
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Graduate Certificate in Coaching. The coaching certificate a 16-hour program, educates current or potential coaches regarding physiology, risk management and sport safety, sport psychology, and organization and administration.

The program consists of 16 hours of course work:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>KSS 544, Organization and Administration of Physical Education Programs</td>
<td>3</td>
</tr>
<tr>
<td>KSS 750, Sport Safety Training</td>
<td>1</td>
</tr>
<tr>
<td>KSS 770, Psychology of Sport</td>
<td>3</td>
</tr>
<tr>
<td>KSS 795, Physiology of Athletic Performance</td>
<td>3</td>
</tr>
<tr>
<td>KSS 796, Motor Integration</td>
<td>3</td>
</tr>
<tr>
<td>KSS 835, Legal Issues in Sport</td>
<td>3</td>
</tr>
</tbody>
</table>

Courses for Graduate/Undergraduate Credit


KSS 515. Rhythmic Activities in K-12. (3). Teaches methodology and curricular content of rhythmic activities appropriate for elementary, middle, and high school students. Prerequisites: Block I of teacher education program.

KSS 520. Sport Tournament and Event 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: KSS 112.

KSS 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: KSS 112.

KSS 526. Sport Public Relations. (3). Focuses on the application of public relations principles in a sport-related setting. Significant attention to media relations with specific topics including media guides and publications, handling
KSS 528. Sport Finance. (3). Introduces the sport administration student to financial challenges, financial statements, financial planning, and related issues within sport organizations. Prerequisite: KSS 380 and 465.

KSS 530. Physiology of Exercise. (3). 3R; 1L. Provides working knowledge of human physiology as it relates to exercise. Prerequisite: KSS 229 or equivalent.

KSS 533. Measurement and Evaluation in Physical Education. (3). A study of the modern practices utilized in the total evaluation of physical education programs including (1) basic statistical procedures, (2) evaluating students, (3) evaluating teaching, and (4) a survey of measurement tools. Prerequisite: KSS 111 and 201A or B or F.

KSS 540. Seminar in Sport Business. (3). Integrates the knowledge base of sport and business as it apply in the practical setting. Prerequisites: 2.5 GPA, admission to College of Education, KSS 460, and senior standing.

KSS 543. Organization and Administration of Exercise Science. (3). Introduces the various organizational and administrative issues existing in the field of exercise science. Addresses the concepts and issues involved with administering and organizing facilities such as corporate-sponsored wellness programs, sports medicine clinics, exercise laboratories, athletic training departments, physical therapy centers, cardio-pulmonary rehabilitation clinics, and health and fitness centers.

KSS 544. Organization and Administration of Physical Education Programs. (3). The organizational and administrative problems of physical education programs and the management of the physical plant.

KSS 547A. Internship in Sport Administration. (8). Culminating activity for students in sport administration. Students spend the equivalent of full-time employment in the appropriate agency for a total of at least 520 hours. Prerequisites: 90 hours of accumulated course credit, KSS 475, 2.500 GPA overall, and internship coordinator's permission.

KSS 547B. Internship in Sport Administration. (8). Second internship experience for students in sport administration. Students spend the equivalent of full-time employment in the appropriate agency for a total of at least 520 hours. Prerequisites: KSS 547A and internship coordinator's permission.

KSS 557. Internship in Fitness/Wellness (8). Culminating activity for students in the fitness field option specialization. Students spend the equivalent of full-time employment in the appropriate agency for one full semester. Prerequisites: senior standing, departmental consent, KSS 470, 2,500 minimum GPA overall and for major, admission to College of Education.

KSS 560. Legal Aspects of Sport and Physical Activity. (3). Focuses on the concepts of tort law, constitutional law and statutory law as they relate to the sport performances. Emphasizes liability-related issues as they impact sport administrators, exercise professionals and teachers/coaches of physical activity. Prerequisites: KSS 112, 380, and 465.

KSS 565. Marketing Sport and Physical Activity Programs. (3). Introduces concepts and tools used to market sport and physical activity. Emphasizes marketing strategies that are applicable to the sport administrator, teacher/coach and exercise professional. Prerequisite: Mkt. 300.

KSS 590. Independent Study. (1-3). Prerequisite: departmental consent.

KSS 720. Teaching Strategies. (3). Non-traditional and innovative techniques and strategies for increasing student participation and motivation in the physical education lesson. Prerequisites: senior standing, graduate standing, or instructor's consent.

KSS 726. Communication in Sport. (3). Since a sport organization's success is largely dependent on the degree to which it can effectively communicate with key constituents, this class addresses a variety of communication-related topics, including public relations management, image, media relations, and community relations.

KSS 732. Introduction to ECG's. (3). Develops a foundation in electrocardiography. Includes ECG leads, rate and rhythm, ECG complexes and intervals, conduction disturbances, arrhythmias, ECG identification of myocardial infarction location, and drug effects on an ECG. Prerequisites: KSS 530 and senior standing, full standing in the Graduate School, or instructor's consent.

KSS 750. Workshop in Education. (1-4).

KSS 752. Special Studies in Kinesiology and Sport Studies. (1-3). Group study in a preselected area of health, physical education, or recreation. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

KSS 760. Sport in Society. (3). Impact of sports on American culture, with focus on competition, economics, mythology, education, religion, ethics, professional sports, sports and minorities.


KSS 780. Physical Dimensions of Aging. (3). 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.

KSS 781. Cooperative Education Field Study. (1-8). 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 degree-bound student must be filed before approval of enrollment for cooperative education graduate credit. May be repeatable for credit with a limit of 8 hours counting toward the graduate degree. Offered Cr/NCr only.

KSS 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, and training and performance of the adolescent athlete and of elderly, and the differences in performance and training between genders. Prerequisite: KSS 530 or 830.

KSS 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.

KSS 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.

KSS 812. Advanced Techniques in Physical Education. (3). Comprehensive coverage of selected physical activities, emphasizing class procedures. Includes laboratory experiences.
KSS 814. Analysis of Teaching. (3). An in-depth examination of teacher effectiveness. Includes analysis of research in physical education, identifying significant teacher and student behaviors involved in effective teaching, examining evaluation models designed for analyzing and measuring teaching effectiveness, and developing intervention programs.

KSS 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: KSS 530 or equivalent and graduate standing.

KSS 816. Physical Education in Secondary Schools. (3). For the physical education specialist. New concepts and recent trends in methodology, programming, and supervision at the secondary level.

KSS 825. Physical Education in Elementary Schools. (3). New concepts, recent trends, methodology, programming, and supervision. For the elementary teacher and physical education specialist.

KSS 830. Advanced Physiology of Exercise. (3). In-depth study into the physiological basis of exercise. Includes energy metabolism, respiratory dynamics, cardiovascular function, and regulation during rest, steady state, and exhaustive physical activity. Emphasizes immediate and long term adaptation to exercise and training. Prerequisite: KSS 530.

KSS 835. Legal Issues in the Profession. (3). Acquaints the graduate student with legal research and the role that law plays in governing the sport and fitness industries. Actively research various theories of law and how they affect the nature of sport, fitness activity, the participants, and consumers. Investigates the basic concept of negligence utilizing illustrative cases from sports, physical education, and fitness activities. Also focuses on specific situations regarding injury and subsequent lawsuits.

KSS 847. Internship. (6). Internship in selected areas of specialization in sports administration. Prerequisite: departmental consent.

KSS 857. Internship in Exercise Science/Wellness. (6). Internship in selected area of specialization within the exercise science/wellness program. Students spend the equivalent of full-time employment in an appropriate agency for one full semester. Prerequisite: departmental consent.

KSS 860. Research Methods in the Profession. (3). Examination of research methodology as related to topics in health, PE, recreation, 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. Students design and complete a mini-research project. Prerequisite: KSS 800.

KSS 862. Professional Portfolio Development. (1-2). Students develop the professional portfolio proposed and accepted in CI 860. In consultation with their portfolio advisor and two other faculty members, students proceed with their approved agendas. Prerequisite: CI 860.

KSS 863. Presentation of Professional Portfolio. (1-2). Students complete, present to their faculty portfolio committee, and orally defend the professional portfolio proposed in CI 860. Prerequisites: CI 860 and KSS 862 or CI 862 (or concurrent enrollment in 862).

KSS 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, KSS 860, and departmental consent.

KSS 876. Thesis. (1-2). Repeatable but total credit hours counted toward degree requirements must not exceed two. Students must be enrolled in this course during the semester in which all requirements for the thesis are met. Prerequisites: KSS 875 and consent of the student's committee chair.

KSS 890. Special Topics. (1-4). Directed reading and research under supervision of a graduate instructor. Prerequisite: departmental consent.

KSS 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.

Music Education
See School of Music section, College of Fine Arts.
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 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.

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 deficiency 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 non-degree-B category. All GPAs are based on the last two years or approximately 60 credit hours of course work. 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. The GRE scores will help in the admission decisions for those students with marginal grades.

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 course work. Three options are available:
1. the thesis option requires a minimum of 24 hours of course work plus a minimum of 6 hours of thesis,
2. the directed project option requires a minimum of 30 hours of course work plus a minimum of 3 hours of directed project, and
3. the course work option requires a minimum of 33 hours of course work.

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 course work option must 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 the four departments of engineering at WSU. 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. 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.

Plan of Study and Advisory Committee
Within the first 12 hours of PhD course work, 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 course work which is applicable to the degree.

Course Breadth Requirements: To ensure proper breadth of course work, 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 about 60 hours of course work, 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 course work 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/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 course work, the advisory committee can petition for permission to administer the DAE. The aspirant will submit a written dissertation proposal.
to the advisory committee. After reading the proposal and receiving permission of the graduate dean, the advisory committee will conduct an oral examination to determine the aspirant’s ability to carry out the proposed research and whether or not this research qualifies as a Ph.D dissertation. Any essential change in the project requires committee approval.

After passing the DAE, the student is known as a Candidate for the Ph.D. Degree. 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 and 1 hour per summer are required. In any case, no less than 6 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.

Aerospace Engineering (AE)

Programs leading to the Master of Science (MS) and Doctor of Philosophy (PhD) degrees. Faculty provides valuable educational opportunities for graduate students. Current research topics include acoustics, aerodynamics, 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, theoretical and applied aerodynamics.

The department’s research and instructional facilities are among the finest in the nation. They include six wind tunnels, a water tunnel, 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 lab and a crash dynamics lab. Computer facilities for students include mainframe terminals, high performance workstations, and various personal computers.

A study of experimental methods and testing, error analysis and propagation, model design, instrumentation and flow visualization. Uses subsonic and supersonic wind tunnels. Prerequisite: AE 424.


AE 528. Aerospace Design I (4). 2R; 2L. 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. Prerequisite: AE 514.


AE 625. Flight Structures II (3). 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. Prerequisite: AE 525.

AE 628. Aerospace Design II (4). 2R; 2L. Preliminary design of flight vehicles, design iteration, sensitivity studies, optimization, economic considerations, and introduction to project management. Prerequisite: AE 528.

AE 653. Basic Composite Material Technologies (3). An introduction to the basic composite material technologies including mechanical behavior, material classification, testing for mechanical properties, manufacturing methods, nondestructive inspection and design. Prerequisite: AE 533.

AE 654. Manufacturing Composite Structures (1-2). Manufacturing methods and tooling for fiber reinforced polymer structures and structural components. Prerequisites: ME 250 and AE 653 both recommended.

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 com-
ponents. 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 711. Intermediate Aerodynamics. (3) A study of 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) 1R; 3L 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 713. Introduction to Aeroelasticity (3). Studies phenomena involving interactions among aerodynamic, inertial and elastic forces. Explores 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. Prerequisites: AE 333, 424 or equivalent.


AE 715. Intermediate Space Dynamics. (3) Advanced topics in orbital mechanics—vector mechanics perspective of the two-body problem, interplanetary missions including gravity assist maneuver, rocket performance, ballistic trajectories, atmospheric entry, and space environment. Prerequisite: AE 373.

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 420, 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 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. Use Airy stress functions to obtain solutions. Introduces energy principles and variational methods. Prerequisite: instructor’s consent.


AE 737. Mechanics of Damage Tolerance. (3). An introduction to the mechanics of damage tolerance with emphasis on stress analysis-oriented fracture mechanics. Topics include stress intensity, fracture toughness, residual strength, fatigue crack growth rate, fatigue crack propagation, and damage tolerance concepts. Prerequisites: AE 525 or instructor’s consent.


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. Prerequisites: AE 607 or ME 659 or ECE 684 or instructor’s consent.

AE 760. Selected Topics. (1-3). Prerequisite: instructor’s consent.


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 multidegree freedom systems. Introduces continuous systems. Prerequisites: Math. 555, AE 373 and 333.

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 808. Spacecraft Attitude Dynamics. (3) An in-depth study of advanced six degrees-of-freedom kinematics, spinning motion, effects of gravitational forces, simple spacecraft dynamics, and flexible spacecraft. Prerequisite: AE 714 or 775 or equivalent.

AE 811. Panel Methods in Aerodynamics. (3) An introduction to panel method theory and application for inviscid incompressible attached flows. Utilization of some two and three dimensional computer codes. Prerequisites: AE 711 and 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 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 822. Finite Element Analysis of Structures. (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.
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: graduate standing.

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 860. Advanced 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 only. 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 configuration 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 Aerelasticity. (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 and 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. Explore the fundamentals of unstructured grids and finite volume schemes. Prerequisite: AE 719 or ME 858.

AE 936. Theory of Plasticity. (3). Includes criteria of yielding, plastic stress-strain relationships, and 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-dimensional 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 990. Advanced Independent Studies. (1-3). Prerequisite: instructor’s consent.

Electrical and Computer Engineering (ECE)

Graduate Faculty

Professors: Ward T. Jewell, Everett L. Johnson, Mark M. Jong (associate dean), Hyuck M. Kwon, M. Ed Sawan (chairperson and graduate coordinator), Paul K. York

Associate Professors: John S. O’Loughlin, Larry D. Paarmann, Ravindra Pendse, Steven R. Skinner, Asrat Teshome

The Department of Electrical and Computer Engineering offers courses of study leading to the Master of Science (MS) and Doctor of Philosophy (PhD) degrees.

Master of Science

Courses of study leading to the MS degree are available with specializations in any of the following five fields: (1) control systems, (2) communications, (3) signal processing, (4) computers and digital systems, and (5) energy and power systems. Details of the MS program can be found under the College of Engineering heading.

Doctor of Philosophy

Courses of study leading to the Doctor of Philosophy (PhD) degree are available with specializations in control theory, communications/signal processing, digital systems, and energy and power systems. Details of the PhD program can be found under the College of Engineering heading.

Facilities

Modern electrical engineering laboratories contain facilities for experimental work in areas of instrumentation, control systems, computers and digital systems, electronics, circuits, energy conversion, power electronics, and power quality.

Courses for Graduate/Undergraduate Credit

ECE 582. Distributed Parameter Circuits. (3). 2R; 3L. A study of the theory and applications of distributed parameter circuits with emphasis on transmission lines. Treats telegrapher’s equations, transient signals on lossless lines, steady state signals on lossless lines, effects of lumped impedances, and Smith Chart techniques. Prerequisite: ECE 383.

ECE 585. Electrical Design Project I (G). 3L. A design project under faculty supervision chosen according to the student’s interest. Prerequisites: Comm. 111 and departmental consent. May not be counted toward a graduate electrical major.

ECE 586. Introduction to Communication Systems. (4). 3R; 3L. 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 white Gaussian noise channel. Additional topics such as PSK and FSK digital communication systems covered as time permits. Prerequisites: ECE 383 and either Stat. 471 or IEN 254.

ECE 588. Advanced Electric Motors. (3). Advanced electric motor applications and theories. Includes single-phase motors, adjustable speed ac drive applications, and stepper motors. Prerequisites: ECE 488 and 492.

ECE 594. Microprocessor Based System Design. (3). Development of microprocessor based systems presented. Interfacing the address bus, data bus, and control bus to the processor chip studied. Memory systems and I/O devices interfaced to the appropriate busses. Vendor-supplied, special-purpose chips, such as interrupt controllers, programmable I/O devices, and DMA controllers, integrated into systems designed in class. Prerequisites: ECE 238 and 294, or 394.

ECE 595. Electrical Design Project II. (2). 3L. May not be counted toward a graduate electrical major. A continuation of ECE 585. Prerequisite: ECE 585. Will not count towards a graduate electrical engineering degree.

ECE 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: ECE 282.

ECE 636. Telecommunications. (3). Topics in circuit and packet switching, layered communication architectures, state dependent queues, traffic engineering, call processing, software organization, routing and common channel signaling. Prerequisite: ECE 586 or departmental consent.

ECE 644. Advanced Digital Lab. (3). An open laboratory experience for computer engineering students. Gives the
student an opportunity to use state-of-the-art devices and equipment in designing complex digital systems. Will not count towards an electrical engineering degree. Prerequisite: ECE 394 and 594.


ECE 688. Power Electronics. (4). 3R; 3L. 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 DC-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. Prerequisite: ECE 492.

ECE 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: ECE 194 and 493.

ECE 698. Principles of Power Distribution. (3). The distribution system is a vital contributor to the overall power system function of providing quality electrical service. Provides an overall view of the engineering fundamentals of distribution system. Discusses distribution system planning and automation, primary and secondary distribution networks. Presents voltage regulation, protection, and reliability. Prerequisite: ECE 598 or departmental consent.

ECE 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, FSK, DPSK, QPSK, QAM, 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: ECE 586 and 754.

ECE 736. Data Communication Networks. (3). Presents a quantitative performance evaluation of telecommunication networks and systems. Includes fundamental digital communication systems review; packet communications; queuing theory; OSI model, SNA and X.25; network layer design; frame relay; X.25 and ATM; 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: ECE 636 or departmental consent.

ECE 738. Embedded Systems Programming. (3). A study of 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: ECE 238.

ECE 744. Introduction to VHDL. (3). An introduction to VHSC hardware description language. Includes different types of modeling techniques using state-of-the-art CAD tools. Covers extensively behavioral modeling, structural modeling, and data flow modeling. Design assignments include design and simulation of both combinational and sequential circuits using VHDL.

ECE 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: ECE 383 and either Stat. 471 or IEN 254.

ECE 764. Routing and Switching I. (4). 3R; 3L. An introductory course which studies different hardware technologies, like ethernet and token ring. Discusses VLSI. Introduces different routing protocols. Includes hands-on experience in the ECE department's routing and switching lab. Prerequisite: ECE 736 or departmental consent.

ECE 765. Routing and Switching II. (4). 3R; 3L. Discusses different bridging techniques, including SRB, RSRB, and DLSPW. Also introduces advanced routing protocols, like OSPF and EIGRP, and route redistribution. Includes hands-on experience in the ECE department's routing and switching lab. Prerequisite: ECE 764 or departmental consent.

ECE 777. Selected Topics in Electrical Engineering. (1-4). New or special courses presented on sufficient demand. Repeatable for credit. Prerequisite: departmental consent.

ECE 781. Analog Filters. (3). A detailed study of analog filter design methods. Includes both passive and active filters. Discusses analog filter approximations; covers sensitivity and noise analyses. Prerequisite: ECE 383 and 492.


ECE 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.


ECE 797. Computer Application to Power System Analysis. (3). Describes the use of power system component models and efficient computational techniques in the development of a new generation of computer programs representing the steady and dynamic states of electric power systems and forms of methods currently employed in the electric utility industry. Emphasizes algorithms suitable for computer solution of power systems problems such as power flows and system voltages during normal and emergency conditions and transient behavior of the system resulting from fault conditions and switching operations. Prerequisites: ECE 229 and 598.

ECE 798. Advanced Electric Power Systems Analysis. (3). Advanced topics in analysis and operation of electric utility power systems. Topics include faulted system analysis, economic dispatch, generator modeling, power system stability, and system protection. Prerequisite: ECE 598.

Courses for Graduate Students Only

ECE 826. Digital Communication Systems II. (3). Presents in-depth theoretical and practical digital communication systems and channels. Includes the modeling and analysis of all digital communications receiver with intermediate frequency (IF) sampling and A/D converter; synchronization techniques; trellis-coded modulation (TCM); Multiple Access; fading multipath channel; radio frequency interference (RFI) channel; and jamming channel. Applies to digital satellite communications system; and digital cellular code division multiple access (CDMA) system. Prerequisite: ECE 726.

ECE 842. Modern Filters. (3). Concerned with estimating a signal of interest or the state of a system in the presence of additive noise, making use of the statistical characteristics of both the signal and the noise. Course includes Wiener filters, Kalman filters, linear prediction, and algorithms for linear prediction parameter estimation. Prerequisite: ECE 754.

ECE 865. Adaptive Filters. (3). Concerned with estimating a signal of interest or the state of a system in the presence of additive noise, but without making use of priori statistical characteristics of the signal nor the noise. Concerned with the design, analysis, and application of recursive filtering algorithms that operate in an environment of unknown statistics. Content includes least mean-square (LMS) filters, recursive least-square (RLS) filters, and recursive least-squares lattice (LSL) filters. All are adaptive and self-designing. Includes concepts of convergence, tracking ability, and robustness. Prerequisite: ECE 754.

ECE 846. Spectrum Estimation. (3). Concerned with estimating the frequency spectrum, primarily power but also energy, of a signal of interest. Reviews historical methods, but concentrate on modern methods that are model based, achieve high resolution even for short data lengths. Content includes maximum entropy, maximum likelihood, autoregressive, moving average, and autoregressive moving average spectrum estimation methods. Applications also included. Prerequisite: ECE 754.

ECE 854. Stochastic Control Systems. (3). Reviews the pertinent aspects of deterministic system models; stochastic processes and linear dynamic system models emphasizing linear systems driven by white Gaussian noises; linear estimation and optimal filtering; design and performance analysis of Kalman filters. Prerequisites: ECE 684 and 754.

ECE 876. MS Thesis. (1-6). Graded S/U only. Repeatable for credit beyond the MS thesis option up to 6 hours. Prerequisite: prior consent of MS thesis advisor.

ECE 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.

ECE 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 only. Prerequisite: consent of academic advisor.

ECE 882. Speech Digital Signal Processing. (3). An introductory study in speech signal generation and digital speech signal processing. Includes speech generation and perception, acoustic phonetics, models of speech signals and speech production, analysis methods of digital speech signals, digital representations of speech signals, short-time Fourier transforms and the application to spectrograms, pitch and formant estimation, parametric and nonparametric methods of signal representation, linear prediction methods, speech data compression, some methods of speech synthesis and recognition, and speech signals in the presence of noise. Prerequisites: ECE 754.

ECE 883. Digital Filters. (3). A study of digital filter design methods. Includes both IIR and FIR filters. Discusses software and hardware implementations; introduces two-dimensional digital filters. Prerequisite: ECE 782 or departmental consent.

ECE 884. Discrete-Time Control Systems. (3). Fundamentals of input-output and state-space analysis, difference equations and state space representations; pole placement and observer design; dynamic programming and discrete minimum principle; linear state regulator design; equality-constrained control problems. Prerequisites: ECE 684 and 782.

ECE 886. Error Control Coding. (3). Presents fundamental topics from information theory which underlie source and error control coding. Reviews topics from finite field theory and vector spaces essential for the study of coding. Presents the concepts of code-space, sphere packing and perfect codes. Considers linear (n,k) block codes in some detail including error detection and correction concepts, parity check matrices and syndromes. Hamming codes, cyclic codes, error trapping decoding, BCH codes, burst-error-correcting codes, interleaving and product codes. Presents convolutional codes and topics such as the Viterbi algorithm for decoding. Prerequisites: ECE 586 and 754.

ECE 893. Optimal Control. (3). A continuation of the study of state-space concepts in the areas of nonlinear systems and optimal and suboptimal control systems with wide classes of performance measures. Prerequisite: ECE 792.

ECE 894. Advanced Computer Architecture II. (3). Vector processors, memory-hierarchy design, input and output. Prerequisite: ECE 844.

ECE 895. Nonlinear Control Theory. (3). An introduction to the analysis and design of nonlinear control systems emphasizing stability. Includes stability definitions, phase-plane methods, linearization, time and frequency domain stability criteria, limit-cycle criteria and exact methods for relay control systems. Prerequisites: ECE 684 and 792.

ECE 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: ECE 598.

ECE 900. 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.

ECE 903. Large Scale Control Systems. (3). Sensitivity analysis of deterministic and stochastic systems; sources of uncertainty in control systems, e.g., plant parameter variation, time delays, small nonlinearities, noise disturbances and model reduction; quantitative study of the effects of uncertainties on system performance; low-sensitivity design strategies, state and output feedback design; sensitivity function approach, singular perturbation and model education techniques; adaptive systems and near-optimal control. Prerequisite: ECE 893.

Industrial and Manufacturing Engineering
Graduate Faculty
Professors: Don Malzahn, Abu Masud (chair)
Associate Professors: S. Hossein Cheraghi (graduate coordinator), Janet M. Twomey
Assistant Professors: Michael Jorgensen, Krishna Krishnan, Viswanathan Madhavan, Jamal Sheikh-Ahmad, Gamal Weheba, Lawrence Whitman, Hreechon You

The industrial and manufacturing engineering (IMfE) department 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 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 IMfE department offers Master of Engineering Management (MEM), Master of Science, and Doctor of Philosophy degree programs in industrial
Master of Science in Industrial Engineering

The Master of Science in Industrial Engineering (MSIE) degree program offers specialization in all of the three areas described above. Students can complete the degree requirements through any of the following options: Thesis, Directed Project, or All Course.

Admission Requirements. In order to be admitted to the MSIE program, applicants must:
1. possess an undergraduate degree in engineering, science, business, or other related discipline;
2. have satisfactorily completed (with B or better) Math 344, Calculus III; IE 255, Engineering Economy; and a natural science course equivalent to that of the undergraduate engineering requirement;
3. have programming competence in C, C++, Visual Basic, or FORTRAN;
4. have a minimum GPA of 3.000, on a 4.000 scale, in the last 60 hours of undergraduate courses and in all graduate courses (students with lower GPAs may be considered only for probationary or non-degree admission); and
5. indicate one of the following as a major area: engineering systems, ergonomics/human factors, or manufacturing systems engineering.

In addition, 6. students with English as a second language must have a minimum score of 550 on the TOEFL; students requesting financial assistance are encouraged to submit a TSE score (minimum acceptable score is 50); and 7. students with an undergraduate degree from a program not accredited by ABET are encouraged to submit GRE scores.

Degree Requirements
1. Core courses: IE 549, Industrial Ergonomics; IE 550, Operations Research; IE 353, Production Systems; and IE 724, Statistical Method for Engineers;
2. CESP 750A, Engineering Research Writing (1 credit hour);
3. Major area courses: at least 9 hours from a selected list of area courses;
4. Technical electives: from an approved list of courses (no more than 6 hours from another department);
5. Up to 12 hours may be transferred from another accredited graduate school;
6. Completion with at least 3.000 GPA the minimum required graduate credit hours;
7. An approved plan of study

Master of Engineering Management

The Master of Engineering Management (MEM) degree program is geared toward helping engineers/technologists develop planning, decision making, and managerial skills while receiving advanced technical knowledge. 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.

Admission Requirements. To be admitted to the MEM program, applicants must:
1. possess an undergraduate degree in engineering, technology, science, mathematics, or computer science (some additional courses may be needed to make up background deficiency if any);
2. have at least two years of acceptable professional work experience (enclose a resume with admission application to provide experience information);
3. have familiarity with and experience in using a personal computer, and spreadsheet and database software (such as, MS Excel, MS Access);
4. have satisfactorily completed or have credit in Math 243, Calculus II, and IE 255, Engineering Economy; and
5. have a minimum GPA of 3.000 in the last 60 hours of undergraduate courses and in all graduate work.

In addition, 6. students with English as a second language must have a minimum score of 550 on the TOEFL; students requesting financial assistance are encouraged to submit a TSE score (minimum acceptable score is 50); and 7. students with an undergraduate degree from a program not accredited by ABET are encouraged to submit a GRE score.

Degree Requirements
1. Completion with at least a 3.000 GPA the minimum required graduate credit hours;
2. Core courses: IE 550, Operations Research; IE 664, Engineering Management; IE 724, Statistical Methods for Engineers; IE 740, Analysis of Decision Processes; IE 764, Systems Engineering and Analysis; IE 854, Quality Engineering; Acc 800 or Econ 804; Mgmt. 862; Organizational Behavior; and CESP 750A, Engineering Research Writing;
3. Electives: Two related engineering courses, one industrial and manufacturing engineering or business course (from a selected list);
4. An approved plan of study; and
5. Up to 12 hours may be transferred from another accredited graduate school.
Doctor of Philosophy
Courses of study leading to the Doctor of Philosophy (PhD) degree are available with specialization in any of the three areas discussed earlier. Details of the PhD program can be found under the College of Engineering heading.

Industrial Engineering (IEN)

Courses for Graduate/Undergraduate Credit

IEN 534. 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: IEN 254 or Stat. 471.


IEN 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. Prerequisite: IEN 524.

IEN 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. Prerequisites: IEN 452 and ECE 229.


IEN 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. Prerequisites: IEN 550 and MfgE 258. Corequisite: IEN 452.


IEN 590. Industrial Engineering Design I. (3). An industry-based team design project utilizing industrial engineering principles; performed under faculty supervision. May not be counted toward graduate credit. May not get credit in both IEN 590 and MfgE 590. Prerequisites: Complete at least two of the following courses (IEN 549, IEN 553, IEN 563) and be within two semesters of graduation.

IEN 664. Engineering Management. (3). An 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. Prerequisite: IEN 254 or Stat. 471.


IEN 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: IEN 254 and 255.

IEN 749. Advanced Ergonomics. (3). A continuation of IEN 549. Includes principles and application of human factors to the design of the workplace, displays, control systems, hand tools and video display terminals. Prerequisite: IEN 549.

IEN 750. Industrial Engineering Workshops. (1-4). Various topics in industrial engineering. Prerequisite: departmental consent.

IEN 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: IEN 524.

IEN 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: IEN 524 or instructor's consent.


IEN 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: IEN 254 and 255.

IEN 770. Industrial Automation. (3). 2R; 3L. Teaches the design and application of manufacturing automated systems. Discusses automation components, such as sensors, actuators and microprocessors, along with the use of programmable logic controllers. Introduces other areas of automation, such as robotics, machine vision, DNC machine tools, and their integration into automated systems. Prerequisite: ECE 229 or knowledge of a programming language.

IEN 775. Computer Integrated Manufacturing. (3). A study of the concepts, components and technologies of CIM systems, enterprise modeling for CIM, local area networks, CAD/CAD interfaces, information flow for CIM, shop floor control and justification of CIM systems. Prerequisite: ECE 229 or knowledge of a programming language.

IEN 780. Topics in Industrial Engineering. (3). New or special courses are presented under this listing. Repeatable for credit when subject matter warrants.

IEN 781. Cooperative Education. (1-4). 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 IE. Repeatable for credit. May not be used to satisfy degree requirements. Prerequisite: departmental consent and graduate GPA of 3.00 or above. CR/NCR only.

IEN 785. Tolerancing in Design and Manufacturing. (3). Provides a basic understanding of the theory and application of tolerancing in design, manufacturing, and inspection. Reviews current literature in the area of tolerancing and inspection. Includes detailed discussion of the ASME standards on geometric dimensioning and tolerancing (GD&T), GD&T verification procedures, tolerance analysis and allocation, statistical tolerancing, and Taguchi's approach to tolerancing.

Courses for Graduate Students Only

IEN 835. Applied Forecasting Methods. (3). A study of the forecasting methods, including smoothing techniques, time series analysis and Box-Jenkins models. Prerequisite: IEN 524.

IEN 842. Advanced Simulation. (3). A study of advanced techniques and methods for statistically selecting input distribution for and analyzing output from simulation models. Also studies variance reduction and model validation techniques. Prerequisites: IEN 565 and 524.

IEN 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
ILE 857. Environmental Hygiene Engineering. (3). Evaluation and control of mechanical, physical and chemical environments. Environmental factors considered include heat, cold, noise, vibration, light, pressure, acceleration, radiations and air contaminants. Prerequisite: IEN 549.


ILE 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 control, process monitoring and control, robotics control, simulation metamodeling, economic analysis models, diagnostic models, combinatorial optimization, and machine vision.

ILE 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 only. Prerequisite: consent of academic advisor.

ILE 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.

ILE 890. Independent Study in Industrial Engineering. (3). Analysis, research and solution of a selected problem. Prerequisite: instructor’s consent.

ILE 900. 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: IEN 550.

ILE 949. Work Physiology. (3). The study of cardiovascular, pulmonary and muscular responses to industrial work including aspects of endurance, strength, fatigue, recovery and the energy cost of work. Utilization of physical work capacity and job demand for task design, personnel assignment and assessment of work-rest scheduling. Prerequisite: IEN 549.

ILE 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: IEN 549 and AE 223.

ILE 956. Knowledge-Based Systems. (3). Introduction to the concepts and techniques in knowledge-based systems or expert systems. Includes design and development of knowledge-based systems using microcomputer-based software. Prerequisite: ECE 239 or AE 227 or departmental consent.

ILE 960. Advanced Selected Topics. (1-3). New or special courses or advanced topics presented under this listing on sufficient demand. Prerequisite: instructor’s consent.


ILE 990. Advanced Independent Study. (1-3). Arranged individual, independent study in specialized content areas. Repeatable toward the PhD degree. Prerequisites: advanced standing and departmental consent.

Manufacturing Engineering (MfgE)

Courses for Graduate/Undergraduate Credit

MfgE 502. Manufacturing Measurement Analysis. (3). 2R; 3L. Covers methods for measurement and analysis of variables in the production of industrial parts. Topics include basic principals of measurement, data acquisition, data analysis, dimensional measurement techniques, basic understanding and evaluation of GD&T, force, temperature, and surface finish measurement, principles of gage design, gage capability studies, process capability studies, and sampling techniques. Includes a laboratory component to familiarize students with different kinds of measurement devices such as CMM, non-contact optical measurement devices, surface profilometer, optical flats, automatic data collection. Prerequisites: IEN 254 and MfgE 258.

MfgE 545. Manufacturing Systems. (3). Cross-listed as IEN 555. A study of the design, planning, implementation, and control of manufacturing systems. Discusses types of manufacturing systems, material requirement planning, capacity planning, facilities planning, scheduling, and an introduction to computer aided process planning. Prerequisite: MfgE 254.

MfgE 554. Manufacturing Tools. (3). Introduces the principles behind the design and fabrication of machine tools and production tooling. Discusses tool materials; machine tool kinematics, accuracy, instrumentation, and control; and designing of fixtures and jigs. Includes an introduction to design of inspection tools, machining and press working tools, and modular fixtureing. Application of theories to laser and design problems. Prerequisite: MfgE 258. Corequisite: AE 223.

MfgE 556. Manufacturing Methods and Materials II. (4). 2R; 3L. 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, non-traditional machining, and process monitoring through measurement of manufacturing process variables. Also includes laboratory experience and plant tours. Prerequisites: MfgE 258 and ME 250.

MfgE 622. Computer Aided Design and Manufacturing. (3). Introduction to 3-D computer graphics. Discusses concepts of CAD/CAM/CIM, design theory, automation, and knowledge-based CAD systems. Examines the basic principles of computer-aided manufacturing, NC programming, and CAD/CAM integration. Describes the design interchange standards and the interface between CAD and CAM. Prerequisites: IEN 222 and ECE 229 or equivalent.

MfgE 654. Non-traditional Machining Processes. (3). A study of the role and economics of non-traditional processes; use of laser and electron beams in inspection and measurement; heat treatment; material removal; material joining; and coating. Also covers the fundamentals of electro-discharge machining, electro-chemical machining, chemical milling, and water-jet machining. Prerequisite: MfgE 558.


Mechanical Engineering (ME)

Graduate Faculty

Professors: Jharna Chaudhuri (graduate coordinator), Mahesh S. Greywall, George E. Talia
Associate Professors: Behnam Bahr (acting chairperson), Hamid M. Lankarani, T.S. Ravigururajan
Assistant Professors: Ikramuddin Ahmed, David N. Koert, C. Charles Yang

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 several areas of specialization, including engineering materials properties and failure modes; intelligent controls, robotics, and automation; multi-body and impact dynamics; mechanical engineering design and manufacturing; thermodynamics and transport processes; combustion; and heat, ventilation, and air-conditioning (HVAC) and energy conservation.

Many departmental faculty members are associates of Wichita State's National Institute for Aviation Research (NIAR). This association makes facilities of the NIAR available for research activities of these faculty and their graduate students. NIAR and departmental facilities include a scanning electron microscope (SEM) located in the materials laboratory; the crash dynamics laboratory, the shock and vibration laboratory, the propulsion laboratory, the computer integrated manufacturing laboratory and the mechanics laboratory.
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 course work so that engineers employed by local industry may pursue a graduate degree in mechanical engineering.

Master of Science
Courses of study leading to the MS degree are available with specialization in any of the departmental faculty research areas described earlier. Details of the MS program can be found under the College of Engineering heading. Additional information can be obtained at http://www.engr.twu.edu/me/grad/grad.html

Doctor of Philosophy
Areas of research specialization for the Doctor of Philosophy (PhD) program are within those stated previously for the MS degree. Specialties will depend upon the student's dissertation advisor and graduate committee. Other details of the Doctor of Philosophy (PhD) program can be found under the College of Engineering heading. Additional information can be obtained at http://www.engr.twu.edu/me/grad/grad.html

Courses for Graduate/Undergraduate Credit

ME 502. Thermodynamics II. (3)^ Continuation of Thermodynamics I, emphasizing cycle analysis, thermodynamic property relationships and psychrometrics, with an introduction to combustion processes and chemical thermodynamics. Prerequisites: ME 398 with a grade of C or better.

ME 503. 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 parameters and the attributes 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 403, Eng. 102. Corequisites: ME 522.


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. Prerequisites: ME 398.

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 of 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 psychrometrics, thermodynamics and heat transfer fundamentals. Focuses on design procedures for space air-conditioning and heating and cooling loads in buildings. Prerequisites: ME 521 and 522 or equivalent.

ME 550. 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 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 attenuation levels set by the U.S. Environmental Protection Agency. Emphasizes engineering systems for pollution control. Prerequisites: ME 398, AE 223, IEN 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, plate, and fluidized bed heat exchangers, radiators, recuperators, and regenerators. Prerequisites: ME 521 and 522 or equivalent.

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. Prerequisite: ME 439 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 solution 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 ALGOR and ANSYS. Prerequisites: ME 439, 522 or equivalent.

ME 641. Thermal Systems Design. (3). Modeling, simulation, and optimization used as tools in the design of thermal systems. Engineering design principles, characteristics of thermal equipment, and economic considerations. Studies open-ended problems, including work on design projects in small groups. Prerequisites: ME 502 and 521.

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 653. Internal Combustion Engines (3). A broad coverage of the basics of internal combustion engines with emphasis on spark ignition and diesel engines. Definition of engine types and configurations and important variables used to evaluate performance and efficiency. Fundamentals learned in thermodynamics, chemistry, and mechanical design are used to understand engine design, performance, and control. Applications discussed are focused primarily on automotive use and involve power output, fuel consumption, and exhaust emissions. Prerequisite: ME 398. ME 659. Mechanical Control. (3)^ Modeling and simulation of dynamic systems; Theory and analysis of the dynamic behavior of control systems, based upon the laws of physics and linear mathematics. Concerns classical methods of feedback control systems and design. Prerequisites: ME 403, ECE 282 and Math 555.

ME 662. Mechanical Engineering Practice. (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. Open only to mechanical engineering students in their last semester of study. Prerequisite: 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. Prerequisites: ME 250 and AE 333.

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 666. Materials in Manufacturing Processes. (3). Deals with fundamental principles of materials and their applications to manufacturing processes. Prerequisites: ME 250.

ME 667. Mechanical Properties of Materials I. (3). Major focus on deformation mechanics 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. Prerequisites: ME 250 or departmental consent.


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 719. Basic Combustion Theory. (3). Introduction to the fundamental principles of combustion processes. Examines the chemistry and physics of combustion phenomena, i.e., combustion and flames, explosion and ignition processes. Prerequisites: Chem. 11Y and 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 and Math. 555.

ME 737. Robotics and Control. (3). A systems engineering approach to robotic science and technology. Fundamentals of manipulators, sensors, actuators, end-effectors and product design for automation. Includes kinematics, trajectory planning, control, programming of manipulators 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 statics 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 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 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 759. Neural Networks for 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: ME 659 or departmental consent.

ME 760. Fatigue and Fracture. (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. Polymers and Constitutive Equations. (3). A basic understanding and knowledge about the structure and mechanical properties of polymeric composite materials in detail. Discusses both short fiber and continuous fiber composites. Emphasizes special design considerations for composite materials including fracture mechanics and performance of composites under adverse conditions (fatigue and impact). Prerequisite: ME 250 or equivalent or departmental consent.

ME 764. Thermodynamics of Solids. (3). Presents basic thermodynamic concepts which will form the working tools throughout the course. Emphasizes the interpretation of certain types of phase diagrams—e.g., the use of thermodynamic to assist phase diagram construction but upon the use of phase diagrams to obtain thermodynamic quantities. Also, the thermodynamics of defects and defect interactions in metals, ceramics, polymers, elemental semiconductors, and compounds. Prerequisites: ME 250 and 398 or departmental consent.

ME 766. SEM and EDAX. (3). Gives students knowledge of Scanning Electron Microscopy (SEM), a powerful tool in materials science and engineering which can be used to analyze structural defects in materials. Discusses both the theory and experimental methods, as well as the application of these methods. Prerequisite: ME 250 or departmental consent.

ME 767. X-Ray Diffraction. (3). Theory of X-ray diffraction, experimental methods and their applications. This course includes 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 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. Prerequisite: graduate standing, department's consent and graduate GPA of 3.00 or above. Offered Cr/NCR only.

* Normally not permitted for use toward the graduate degree in mechanical engineering.

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 and 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 bioengineering. Prerequisites: ME 729 or instructor's consent.

ME 832. Failure Analysis Applications in Mechanical Design. (3). Application of engineering fundamental to the study of mechanical failure brought about by the stresses, strains and energy transfers in machine elements that result from the forces, deflections and energy inputs applied. Emphasizes recognition, identification, prediction and prevention of failure modes that are prevalent in machine-element design. Prerequisite: ME 439 or departmental consent.

ME 847. Applied Automation and Control Systems. (3). 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 feedforward 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 851. Principles and Applications of Conduction Heat Transfer. (3). Theory and measurement, Fourier's equation, steady and unsteady state with and without heat sources
and sinks and numerical methods. Prerequisites: ME 522, Math. 757 or departmental consent.

ME 852. Principles and Applications of Convective Heat Transfer. (3). Free and forced convection in laminar and turbulent flow. Includes analysis and synthesis of heat transfer equipment. Prerequisite: ME 522 or departmental consent.


ME 854. Two-Phase Flow Heat Transfer. (3). Thermodynamic and mechanical aspects of interfacial phenomena, boiling and 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 utilizing 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 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 studies in materials engineering. Topics include structure and diffusion, dislocations, defects and thermal processes, solid solution and hardening, diffusion, and phase diagrams and transformations. Prerequisites: ME 250 and 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, 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). Graded S/U only. Repeatable for credit toward the MS thesis option up to 6 hours. 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 only. 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 938. Computational Fluid Dynamics and Heat Transfer II. (3). Vector form of the Navier-Stokes and the energy equation. Generalized transformation of the flow equations to the computational domain. Numerical methods for inviscid flow equations, boundary layer type equations, "parabolized" Navier-Stokes equations. Prerequisite: ME 858 or equivalent.

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 metal-oxoceramics. 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 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.

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 Fine Arts

Offices: 415 Jardine Hall
Walter J. Myers, dean
Nicholas E. Smith, associate dean
Ronald Christ, coordinator for graduate studies in art
Tom Fowler, coordinator for graduate studies in music

School of Art and Design, (316) 978-3551—Donald R. Byrum, chairperson
Art Education, (316) 978-3555—Mary Sue Foster, program director
Art History, (316) 978-3555—Frederick Hemans, program director
Graphic Design, (316) 978-3555—Jim Hellman, program director
Studio Art, (316) 978-3555—Jill Eggers, program director

School of Music, (316) 978-3500—J. William Thomson, chairperson
Music Education Studies, (316) 978-3103—Larry Blocher, director
Musical Composition Studies, (316) 978-3532—Dean Roush, director
Keyboard Studies, (316) 978-3103—Paul E. Reed, director
Strings/Orchestra Studies, (316) 978-3103—Jackie Dillon, director
Voice/Choral Studies, (316) 978-3103—Dorothy Crum, director
Wind/Percussion/Band Studies, (316) 978-3103—Victor A. Markovich, director

School of Performing Arts, (316) 978-3368—Bela Kiralyfalvi, chairperson
Dance, (316) 978-3645—C. Nicholas Johnson, director
Theatre, (316) 978-3368—Nyalls Hartman, director

Fine Arts (FA)
Although there is no graduate degree in general fine arts, the following course is available for graduate credit.

Course 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.

School of Art and Design
Donald R. Byrum, chairperson

The School of Art and Design offers programs leading to both the Master of Arts and Master of Fine Arts degrees. Students seeking the Master of Arts degree take a major in art education. Students seeking the Master of Fine Arts degree select a major in ceramics, painting, printmaking, or sculpture. The specific requirements for each major are described under the appropriate program listing, below.

Art Education (Art E.)
Graduate Faculty
Professor: Mary Sue Foster

Master of Arts in Art Education
The Master of Arts (MA) degree in art education meets the needs for advanced study in the field. The program is designed for students pursuing a career in public school art teaching, supervision, college teaching, museum education, or art research.

Admission Requirements
To be admitted without deficiencies, students must have completed a bachelor's degree program in art education and meet requirements for Kansas state certification in this field. Also required are a 2.750 overall grade point average during the last two years of undergraduate study and a 3.000 grade point average in art, with a minimum of 12 hours in art history, 15 hours in one studio area, and 9 hours in art education. Degree applicants are expected to schedule an interview with the director of art education prior to the first semester of enrollment. During the interview applicants are required to present for evaluation the following: (1) a professional resume reflecting training and accomplishments; (2) a brief statement outlining professional goals; (3) written examples of professional and academic work; and (4) six examples of their art work (either portfolio or slide form) with an accompanying list identifying name, title, size, and media. Up to half of the portfolio may be work produced by students of the applicant. Make up of undergraduate course deficiencies may be required before applicant is admitted to the MA program in full standing. All correspondence should be addressed to the graduate coordinator of art and design.

Degree Requirements
Two plans may be followed in meeting the requirements for the MA in art education.

Plan A. The minimum requirements through Plan A are summarized below. Of the 30 hours required, 18 must be in courses numbered 700 or above.

Art education courses, including
6 hours of research problems and thesis (715 and 816) .......................................................... 18
Major art areas and related fields* .......................................................................................... 12
Total ...................................................................................................................................... 30

Plan B. The minimum requirements through Plan B are summarized below. Of the 33 hours required, 20 must be in courses numbered 700 or above.

Art education courses, including
9 hours of research problems and terminal project (715, 815, and 818) ................................. 18
Major art areas and related fields* .......................................................................................... 15
Total ...................................................................................................................................... 33

*May include courses in studio arts and art history.

All candidates must pass a written comprehensive examination before enrolling in thesis or terminal project. This examination is scheduled the first Saturday in November, the second Saturday in April, and the first or second Saturday in July. Candidates must pass an oral defense of their thesis if following Plan A. If following Plan B, they must make a verbal and/or visual presentation of their terminal project.

Plan of Study
In order to define a program of study for the graduate degree, students must submit the Plan of Study form leading to admission to candidacy for the degree no later than one month following the completion of 12 semester hours of graduate credit.

Transfer of Credit and Extension Work
A maximum of 6 semester hours of graduate work may be transferred from another regionally accredited graduate school with the approval of the major advisor and the dean of the Graduate School. Students seeking the Master of Arts degree must pass an oral defense of their thesis after completion of 12 semester hours of graduate credit.

Courses for Graduate/Undergraduate Credit

Art E. 510Q. Stimulating Creative Behavior. (3). Includes theories of creativity; strategies for problem-finding and problem-solving; identifying various external and internal blocks to creativity; testing for creativity; the relationships of creativity, cognition and visual thinking; creative challenges; and stimuli. Emphasizes methods to elicit creative behavior. Repeatable once for credit.

Art E. 514Q. Aesthetic Inquiry. (3).

Art education courses, including
6 hours of research problems and
thesis (715 and 816) .......................................................... 18
Major art areas and related fields* .......................................................................................... 12
Total ...................................................................................................................................... 30

Art E. 515. Developing Visual Materials for Art Education. (3). A production laboratory that emphasizes the integra-
Art E. 550. Art Workshop. (1-3). Repeatable for credit. Area covered is determined at the time the course is offered.

Art E. 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: Art E. 212, 302 or instructor’s consent.

Art E. 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.

Art E. 711. Seminar in Art Education: Topic to be Announced. (1-3). Supervised study and research of contemporary issues in art education. Repeatable for credit with advisor’s consent.

Art E. 712. Development of Art Understanding in the Educational Program. (3). Includes readings, observation and evaluative techniques in the development of concepts and materials for art understanding. Repeatable once for credit. Prerequisite: instructor’s consent.

Art E. 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.

Art E. 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.

Art E. 715. Research Problems in Art Education. (3). Orientation to research methods, findings and designs related to the analysis of studies and current problems in art education. Repeatable once for credit. Prerequisite: instructor’s consent.

Art E. 719. Electronic Imaging. (1-3). Emphasizes Macintosh and other computer processes and their application to art and art education. Students generate computer images using digitizing, scanning, and animation with a variety of software and hardware. Makes application of this new technology to problems of design, art history, and art criticism. Develops curriculum materials for art instruction employing computer graphic instruction. The graduate student prepares a research paper on a selected topic related to computer graphics and art learning.

Art E. 728. Art and Early Childhood. (1-3). Emphasizes the cognitive and aesthetic domains of young children and develops the potential for creative and visually expressive behavior as a natural means of a child responding to environmental stimuli.

Art E. 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

Art E. 815. Individual Research Problems in Art Education. (1-4). Directed independent study in art education not normally covered in other graduate course work. Repeatable for credit. Prerequisite: instructor’s consent.

Art E. 816-817. Thesis—Art Education. (1-3; 1-3).

Art E. 818-819. Terminal Project—Art Education. (1-1-3).

Art History (Art H.)

Graduate Faculty
Associate Professor: Frederick Hemans
Assistant Professors: Jody Cutler, Annette LeZotte

Although there is no graduate degree in art history, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit

Art H. 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.

>Art H. 521Q. Italian Renaissance. (3). General education further study course. Painting, sculpture, and architecture in Italy from the 13th to the 16th centuries. Prerequisite: Art H. 122G or instructor’s consent.

>Art H. 522. Southern Baroque. (3). General education further study course. Painting, sculpture and architecture in Italy and Spain from 1600 to 1750. Prerequisite: Art H. 122G or instructor’s consent.

>Art H. 523. 18th and 19th Century European Art. (3). General education further study course. A history of European art from Watteau through post-impressionism.

>Art H. 524. 18th and 19th Century American Art. (3). General education further study course. A history of American art from the colonial period through the 19th century.


>Art H. 526. Art Since 1945. (3). General education further study course. A study of the history of art in the United States from 1945 to the present, stressing the relationship between contemporary trends in criticism and artistic practice.

Art H. 528. Museum Techniques I. (3). Primarily for the graduate student interested in museum work. Includes specialized research related to administrative responsibilities of a museum: collection, exhibition, recording, preservation and financial activities.

Art H. 530. The Art of Classical Greece. (3). A study of painting, sculpture and architecture of Greece during the 5th and 4th centuries B.C.

Art H. 531. The Art of Hellenistic Greece. (3). A study of the painting, sculpture and architecture of Greece during the Hellenistic period, 4th to 1st centuries B.C.

Art H. 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.

Art H. 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.

Art H. 534. History of Photography. (3). History of photography stressing techniques, media, processes, interrelations with other visual arts, style questions, genres, and criticism.

Art H. 535. Northern Renaissance. (3). Painting and printmaking in France, Germany, and the Netherlands in the 14th through 16th centuries. Explores northern European pictorial traditions and considers their relationship to Italian Renaissance art. Prerequisite: Art H. 122G or instructor’s consent.

Art H. 536. Northern Baroque. (3). Painting and printmaking in Flanders and Holland of the 17th century, including the art of Rubens, Rembrandt, and Vermeer. Prerequisite: Art H. 122G or instructor’s consent.

Art H. 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

Art H. 828-829. Thesis. (2; 2).

Art H. 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.

Graphic Design—Commercial Art (Art G.)

Graduate Faculty
Associate Professors: James Hensman, Kirsten S. Johnson

Although there is no graduate degree in graphic design, the following courses are available for graduate study.
Courses for Graduate/Undergraduate Credit

Art G. 530. Seminar in Graphic Design. (3). Supervised study and research. Requires weekly consultation and reports. Repeatable for credit. Prerequisite: departmental consent.

Art G. 550. Graphic Design Workshop. (1-3). Repeatable for credit. Area covered is determined at the time the course is offered.

Studio Art (Art S.)
Graduate Faculty
Professors: John Boyd, Donald Byrum (chair, art/design), Ronald Christ (coordinator, graduate studies)
Associate Professor: Barry Badgett
Assistant Professors: David Hiltner, David Kohan

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 is designed for a concentration in ceramics, painting, printmaking, or sculpture.

Admission Requirements
Admission without deficiencies requires a grade point average of at least 2.750 based upon the last 60 hours of course work, the other general requirements of the Graduate School, with the additional requirement of a 3.000 grade point average in the major field of study (ceramics, painting, 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 major field and 20 hours of related work. Applicants should present examples of work for evaluation. They should submit 15 color slides (2" x 2") in their major area. All work should be identified with name, title, size, and media. Applicants should also include a short statement of their artistic philosophy. Also list all honors, awards, scholarships, exhibitions, special recognition for work in art, or services rendered through art. Three letters of recommendation should be forwarded. No application is considered until an application to Graduate School, transcripts, and the materials listed above are received. A stamped return envelope for all materials should be included.

Degree Requirements
Minimum course requirements for completion of the MFA degree are summarized below. In addition, 45 of the 60 hours must be taken in courses numbered 600 or above.

<table>
<thead>
<tr>
<th>Studio courses in the major area</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Studio courses in a minor option area</td>
<td>23</td>
</tr>
<tr>
<td>** Courses in graduate-level art history, art seminar, and pertinent lecture courses. Directed readings. not to exceed 6 hours, may also be used to fulfill this requirement</td>
<td>12</td>
</tr>
</tbody>
</table>

Art S. 570, Professional Practices in Studio Art:
Graduate requirement...3
Terminal project in the major area...10
Total..........................60

* Minor option can be taken in one studio area, a variety of studio areas, or outside the student's major area.

** Final approval by student's advisor and graduate coordinator required.

The terminal project consists of an exhibition of original studio art work, 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 Plan of Study form leading to admission to candidacy for the degree no later than one month following the completion of 24 semester hours of graduate credit.

Graduate Review. MFA degree students must satisfactorily complete graduate reviews conducted in their major MFA area at the end of each fall and spring semester. At this time, the graduate faculty makes observations and recommendations regarding the quality of the students' work and their standing in the program. No graduate review is held during Summer Session.

Transfer of Credit. All graduate credit accepted for transfer will be at the discretion of the departmental advisor and graduate coordinator. A maximum of 24 semester 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 semester hours at WSU and the first graduate review. A maximum of 12 semester hours can be applied to a major field of study. 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 art coordinator, and the major professor 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 or MA Art Education programs may enroll in 800-level courses only with written consent of the art graduate coordinator.

Examinations. At the beginning of and during the semester in which the degree is to be conferred, two interviews between candidates and their committees are conducted. The proposed content of the MFA exhibition is discussed and evaluated. The graduate committee's findings, upon final review and the MFA terminal exhibition, are filed by the major professor with the graduate dean before the end of the final semester. This procedure constitutes the terminal examination for MFA candidates.

Policy Toward Student Art
The School of Art and Design reserves the right to select and retain a maximum of three pieces from the graduate exhibition. MFA printmaking candidates may be required to deposit one print from any or each edition for the University Collection.

General
Course for Graduate Students Only
Art S. 800. Seminar in Art Topics. (3). Explores areas of common interest in the arts. Supervised study, research and discussion. Repeatable for credit.

Art S. 895. Professional Practices in Studio Art. (3). 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. Not repeatable for credit.

Ceramics
Courses for Graduate/Undergraduate Credit
Art S. 570. Advanced Ceramics Studio I. (1-3). Builds on Art S. 373. Investigates advanced studies of claybodies, glazes, and firing methods. Prerequisites: Art S. 373 and/or instructor's consent.

Art S. 571 Advanced Ceramics Studio II. (1-3). Second course in advanced 500-level series. Builds on Art S. 570. Prerequisites: Art S. 570 and/or instructor's consent.


Art S. 573. Advanced Handbuilding Ceramics Studio II. (1-3). Second course in advanced 500-level series of handbuilding. Builds and expands on Art S. 572. Prerequisite: Art S. 572 and/or instructor's consent.

Art S. 574. Advanced Study of Kiln Methods. (3). Advanced study of kiln design and construction with...
research in the area of refractory materials. Requires reading assignments, notebook and laboratory work. Prerequisite: Art S. 374.

Art S. 575. Study of Ceramic Materials II. (3). Lab fee. Lectures and research covering clays, glazes and refractory materials. Reading assignments concerning physical and chemical characteristics of pottery materials. Prerequisites: Art S. 275 and 370.

Art S. 576. Study of Ceramic Glazes II. (3) Lab fee. The study of glaze formulation and the color and crystalline effects of oxides on base glazes. Requires notebook, formulation records and laboratory work. Prerequisite: Art S. 575.

Art S. 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.

Courses for Graduate Students Only

Art S. 870. Special Problems in Ceramics. (1-3). Research in advanced problems in ceramics. Repeatable for credit.

Art S. 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.

Art S. 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: Art S. 875.

Art S. 878-879. Terminal Project—Ceramics. (1-3; 1-3).

Drawing

Courses for Graduate/Undergraduate Credit

Art S. 545. Advanced Drawing Studio. (1-3). Drawing with a variety of media. Uses graphic problems relative to individual technical and aesthetic development. Critiques are given. Repeatable for credit. Prerequisites: Art S. 340 and 345.

Art S. 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: Art S. 340, 345 and instructor's consent.

Courses for Graduate Students Only

Art S. 846. Special Problems in Life Drawing. (1-3). Drawing from life. Requires sketchbooks and/or portfolio. Repeatable for credit.

Art S. 845. Special Problems in Drawing. (1-3). Advanced drawing in various media emphasizing independent work and the development of personal expression. Repeatable for credit.

Painting

Courses for Graduate/Undergraduate Credit

Art S. 551. Advanced Watercolor Studio. (3). For the professionally oriented student. Emphasizes independent study. Repeatable for credit. Prerequisites: four semesters of Art S. 351 and interview with instructor.

Art S. 552. Advanced Decorative and Ornamental Painting and Design. (3). Projects in decorative and ornamental painting and design developed and completed by the student with faculty supervision. Preparation for more independent work. A plan of study defining projects must be submitted and approved by the instructor. Prerequisite: Art S. 352 or instructor's consent.

Art S. 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.


Art S. 559. Terminal Project: Decorative and Ornamental Painting and Design. (3). Supervised independent study. A plan of study for a project in decorative and ornamental art must be submitted for faculty approval prior to registration. Repeatable for credit. Prerequisite: Art S. 552.

Courses for Graduate Students Only

Art S. 850. Special Problems in Painting. (1-3). Professional and experimental painting emphasizing the development of maturity, ideas, independent thinking and personal expression. Mediums include oil, watercolor and synthetic media. Repeatable for credit with the consent of the drawing/painting faculty.

Art S. 858-859. Terminal Project—Painting. (1-3; 1-3).

Printmaking

Courses for Graduate/Undergraduate Credit

Art S. 560. Advanced Printmaking Studio—Intaglio. (1-3). Intaglio, collagraph and mixed techniques. For students interested in professional printmaking, course offers specialization in color printing or black and white. Repeatable for credit. Prerequisites: Art S. 260, 262 and 346.

Art S. 561. Advanced Printmaking Studio—Lithography. (1-3). Lithography, black and white or color. For students interested in professional printmaking; course offers specialization in color printing. Repeatable for credit. Prerequisite: Art S. 346.

Art S. 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.

Courses for Graduate Students Only

Art S. 860. Special Problems in Printmaking—Intaglio. (1-3). 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.

Art S. 862 & Art S. 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.

Art S. 868-869. Terminal Project—Printmaking. (1-5; 1-5).

Sculpture

Courses for Graduate/Undergraduate Credit

Art S. 580. Advanced Sculpture Studio. (1-3). Sculpture in any medium, emphasizing individual development and creativity. Repeatable for credit. Prerequisite: Art S. 380.

Art S. 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. Prerequisite: departmental consent.

Courses for Graduate Students Only

Art S. 880. Special Problems in Sculpture. (1-3). 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.

Art S. 888-889. Terminal Project—Sculpture. (1-5; 1-5).
School of Music
J. William Thomson, chairperson
Tom Fowler, 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 history-literature, theory-composition, music education, performance, conducting, and pedagogy. 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.

Master of Music
The Master of Music degree (MM) allows for concentration in history-literature, piano pedagogy, theory-composition, conducting, and performance. The general requirements for the degree are outlined below, while the specific course requirements for each concentration are given in the program sections (music education, musicology-composition, music performance) in which the concentrations are housed.

Admission Requirements
Admission to the MM program requires the completion of an accredited music bachelor's degree that includes a minimum of 60 semester 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.

Degree Requirements
The MM degree requires completion of a minimum of 32 graduate semester 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 852, Introduction to Bibliography and Research; 830, Seminar in Music Theory; and 6 hours elected from graduate courses in music history and literature (791-792, Seminar in Music History; or elections from the graduate period courses: 893, Music of Antiquity-Renaissance, through 897, Music of the 20th Century). Advisor's approval must be obtained for all courses included in the degree Plan of Study.

Master of Music Education
The School of Music offers the Master of Music Education degree (MME). Areas of concentration and associated requirements are listed under Music Education, below.

Examinations
All degree candidates in the School of Music must pass an oral comprehensive examination. The oral comprehensive examination for thesis candidates includes a defense of the thesis.

Music Education (Mus. E.)
Graduate Faculty
Professors: Larry Blocker (director, music education), Harold A. Popp
Associate Professors: Elaine Bernstorf, Thomas Fowler, Thomas Wine
Assistant Professor: Jacquelyn Dillon

Master of Music Education
The Master of Music Education (MME) program allows for concentration in elementary music, choral music, instrumental music (with recital option), music in special education, and voice. Conducting options may be elected (with approval) in the choral and instrumental programs.

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. The required core is 13 hours; 17 field specialty hours must be decided in consultation with an advisor and the director of music education; five terminal options are available: recital, conducting project, thesis, research seminar, and an extra hours option. Of these hours, 12 must be in courses numbered 700 or 800. Each Plan of Study must include 852, Introduction to Bibliography and Research; 851, Psychology of Music; 871, History and Philosophy of Music Education; and 830, Seminar in Music Theory. Three hours also are required in graduate music history.

Qualification of students requesting permission to present a formal graduate recital should obtain approval from the appropriate performance area before completing 12 hours of graduate enrollment. A recital is not a terminal requirement option for the MME in special education.

Courses for Graduate/Undergraduate Credit

Mus. E. 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: completion of Mus. C. 228 or instructor's consent.

Mus. E. 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.

Mus. E. 611, Music for Special Education. (3). Open to upper-division or graduate students and intended for the potential practicing music teacher, classroom teacher or special education teacher. Includes identification of dysfunctional 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.

Mus. E. 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 utilizing 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.

Mus. E. 732. Music in the Junior High School. (3). Includes administrative structures, the curriculum, adolescent development, teaching as behavior and competencies needed for successful teaching of general and choral music in grades 6-9.

Mus. E. 737A. Advanced Woodwind Techniques. (2). Special problems and techniques in the teaching of woodwind instruments. Surveys current materials. Prerequisites: Mus. E. 237 and 238 or equivalent.

Mus. E. 739A. Advanced Brass Techniques. (2). Special problems and techniques in the teaching of brass instruments. Surveys current materials. Prerequisite: Mus. E. 239 or equivalent.

Mus. E. 740A. Advanced Percussion Techniques. (2). Special problems and techniques in the teaching of percussion instruments. Surveys current materials. Prerequisite: Mus. E. 240 or equivalent.


Mus. E. 781. Cooperative Education. (1-4). A field placement which integrates course work 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 and approved by appropriate faculty sponsors and cooperative education coordinators. Students enrolled...
in Co-op 781 may follow one of two scheduling patterns: parallel, enrolling concurrently in a minimum of 6 hours of course work to addition to their co-op assignment; alternating, working full time one semester in a field study and returning to full school enrollment the following semester; such students need not be concurrently enrolled in any other course. Prerequisite: satisfactory academic standing prior to the first job assignment. May be repeated for credit. Offered Cr/Ncr only.


Mus. E. 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


Mus. E. 822. Advanced Techniques in Special Music Education. (3). For the special music education MME candidate 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: Mus. E. 403 or 404.

Mus. E. 823. Special Music Education Practicum. (3). For the special music education MME candidate only. Supervisor teaching in special education classrooms. A companion course to Mus. E. 822; gives the MME special education candidate experience in teaching in special education classrooms. Prerequisite: Mus. E. 822 or concurrent enrollment.

Mus. E. 831. Developing the Child's Musical Understanding. (3). Definition of understandings necessary for the attainment of musical understanding in the child. Directs the exploration of classroom experiences toward the successful development of understanding through the application of basic learning principles. Prerequisite: Mus. E. 403.


Mus. E. 841. Special Project in Music. (1-3). Individually supervised study or research emphasizing the personal needs of the student. Repeatable for credit. Prerequisite: instructor's consent.

Mus. E. 842. Special Project in Music. (1-3). Individually supervised study or research emphasizing the personal needs of the student. Repeatable for credit. Prerequisite: instructor's consent.

Mus. E. 844. Terminal Conducting Project. (2). Individually supervised project for those accepted for the conducting option on the instrumental or choral emphasis under the MME degree. Prerequisites: instructor and departmental consent.


Mus. E. 852. Introduction to Bibliography and Research. (0). See course listing under musicology-composition area.

Mus. E. 854. Research Seminar 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: Mus. C. 852.


Music Performance (Mus. P)

Graduate Faculty

Professors: Julie Bee, Joseph C. Combs, Dorothy Crum (director, voice/choral), James W. Jones, Walter J. Myers (dean), Harold A. Popp, Frances K. Shelly, Nicholas Smith (associate dean)

Associate Professors: Sylvia Coats, Catherine Consiglio, Robert Glassmann, Jean Lansing, Nancy Luttrull, Victor A. Markovich (director, winds/percussion and bands), Paul E. Reed (director, keyboard), Robert Town, Andrew Trechak, Vernon L. Yenne

Assistant Professors: Deborah E. Baxter, Phillip Black, Amy Goesser, John Harrison, Andrew Kolb, Nicolaas Kuster, Michael Palmer (director of orchestras), Russell D. Widener

Master of Music—Performance Concentration

Admission to the Master of Music (MM) program with emphasis in music performance requires a performance background, with a Bachelor of Music (BM) 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/concentration is tentative pending approval of the respective performance faculty.

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. Permission to schedule the recital 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.

Master of Music—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 present MM in Vocal Performance degree provides for some experience with opera performance, the opera concentration will provide more focus with more specialized course work, training, and experience, which will better prepare 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.

Admission Requirements

Admission to the program will be based on the results of a live audition and an interview with the director of the WSU Opera Theatre and voice faculty. When a live audition is not possible, a video tape 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 2.75 GPA; (3) some stage experience, including a basic acting class; and (4) working knowledge in at least one of the following languages: French, German, or Italian.

Degree Requirements

The Master of Music (MM) degree with emphasis 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. This degree must include the following courses:

1. 12 credit hours in the MM core requirement, including 852, Introduction to Bibliography and Research (3); 830, Seminar in Music Theory (3); and 6 credit hours in selected graduate music history courses;
2. 10 credit hours of Applied Voice plus the 2 credit hours of Graduate Recital;
3. 12 credit hours of courses in the major area, including 632, Opera Literature (3); 760, Opera Styles (2); 773, Acting for Singers (3); 711K, Opera Leading Role (2); 711K, Opera Direction and Assistance (2).

Master of Music—Instrumental Conducting Concentration

The Master of Music (MM) degree, instrumental conducting concentration, 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. The program culminates in a conducting recital utilizing University students and ensembles; metropolitan or ad hoc ensembles may be substitutated with faculty approval.

Admission Requirements
Candidates must have completed an accredited bachelor's degree in music or music education, provide evidence of demonstrable success in prior conducting experiences, and obtain approval of the instrumental conducting faculty. All candidates must complete an acceptable conducting audition; admission to the instrumental conducting concentration 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 as the terminal requirement. Of these 20, must be in courses numbered 700-800. The degree must include the following courses:

1. 852, Introduction to Bibliography and Research, 3 hours;
2. 830, Seminar in Music Theory, 3 hours;
3. 800, Seminar in Music Literature (or 791-792, Seminar in Music History); and
4. Pedagogy and literature courses as specified in the pertinent MM (piano pedagogy) curriculum guide.

Applied Music Private Study (Mus. A.)

Mus. A. 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.

Mus. A. 731. (1). For majors only; study on secondary instruments. Basic instruction. Repeatable for credit. Graduate.

Mus. A. 732. (2). For majors only. Repeatable for credit. Graduate.

Mus. A. 734. (4). For performance and pedagogy majors or students preparing for master's degree recitals only. Repeatable for credit. Graduate.

Applied Music Classes

Applied Music Media Designations

A Bassoon
B Cello
C Clarinet
D Euphonium
E Flute
F French Horn
G Guitar
H Harp
I Violin
J Oboe
K Trumpet
L Guitar
M Organ
N Percussion
P Piano
Q String Bass
R Trombone
S Tuba
T Violin
U Tuba
V Viole
W Violin
X Saxophone
Y Voice
Z Electric Bass

Applied Music Classes

Mus. A. 717W. Violin Class for Adult Beginners. (2). Beginning violin class: violin fundamentals, emphasizing scalar tonal and intonation development; basic techniques for reading (notes and rhythm). May not be applied to music major requirements. Repeatable for credit.

Mus. A. 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 instruction via lecture, demonstration, listening to recordings related to stylistic differences in the popular idiom. Intended for nonmusic majors; not applicable to music degree requirements. Repeatable.

General Performance (Mus. P.)

Courses for Graduate/Undergraduate Credit

Mus. P. 530. Musical Theatre Workshop II. (2). Cross-listed as Thea. 530. An interdisciplinary practicum class with opportunities for student performers to refine techniques in a variety of musical theatre genres, including operetta, book musicals, and rock musicals. Provides opportunities for student directors and choreographers to gain experience in their discipline with faculty guidance and supervision. Admission is by audition.

Mus. P. 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 of student showcases demonstrating their talents in singing, dancing, acting, directing, and choreography. For majors only. Prerequisite: instructor's consent.

Mus. P. 580. Piano Pedagogy. (2). Primarily concerned with the art and science of teaching. Includes observations of master teachers in the university and community.

Mus. P. 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.

Mus. P. 625. Voice Pedagogy. (2). Acquaints the voice major with vocal techniques, concepts and materials of private and class instruction.

Mus. P. 651. Advanced Conducting and Score Reading. (2). Baton technique, score reading and musicianship. Prerequisite: Mus. P. 217 or 218 or equivalent.

Mus. P. 680. Woodwind Pedagogy. (2). A comprehensive study of woodwind instrument techniques, concepts and materials of studio instruction for the advanced student, including the teaching of mini-lessons for instructor and class critique. Prerequisite: performance capability on a woodwind instrument or instructor’s consent.

Mus. P. 681. Brass Pedagogy. (2). A comprehensive study of brass instrument techniques, concepts and materials of studio instruction for the advanced student, including the teaching of mini-lessons for instructor and class critique. Prerequisite: performance capability on a brass instrument or instructor’s consent.

Mus. P. 682. Percussion Pedagogy. (2). A comprehensive study of percussion instrument techniques, concepts and materials of studio instruction for the advanced student, including the teaching of mini-lessons for instructor and class critique. Prerequisite: performance capability on percussion instruments or instructor’s consent.

Mus. P. 691. Advanced Choral Conducting. (2). A comprehensive study of conducting and rehearsal techniques, analysis and ear training and types of choral composition for the advanced student. Prerequisite: Mus. P. 217 or 218 or equivalent.


Mus. P. 710-712-713-714. Ensembles. (1 except 710B, 711A, 712E 713F [2]). (A) Orchestra; (B) Symphonic Wind Ensemble; (D) Gospel Ensemble; (F) A Cappella Choir; University Concerts; (C) Concert Chorus; (H) Banda Hispanica; (J) Flute Accompaniment; (L) Madrigal Singers; Chamber Singers; (N) Woodwind Ensemble; (O) Saxophone Quartet; (P) Brass Chamber Ensemble; (R) Percussion Ensemble; (S) Beginning String Ensemble and String Chamber Ensemble; (T) Jazz Arts Ensembles I and II; (V) Guitar Ensemble; (W) International Choir; (X) New Music Ensemble. Prerequisite: audition required. Repeatable for credit.

Mus. P. 711E Opera Lab. (1). See Mus. P. 211E.

Mus. P. 711K, Opera Theatre. (1). See Mus. P. 211K.


Mus. P. 712K. Opera Theatre. (3). See Mus. P. 212K.


Mus. P. 715Y. Voice for Music Theater. (2). Basic repertoire and singing techniques with weekly master class devoted to music theater techniques and concepts. Restricted to persons other than vocal majors. Repeatable.


Mus. P. 762. Opera Styles. (2). A comprehensive study of the performance styles and practices in operatic singing, ranging from the seventeenth century to the present. Prerequisites: professor’s permission.

Mus. P. 773. Acting for Singers. (3). A study of 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.

Mus. P. 780. Special Topics in Music. (1-4). For individual or group instruction. Repeatable with departmental consent.

Mus. P. 790E. Opera/Musical Theatre Audition. (1). Cross-listed as Thea. 630. A practicum course which develops techniques and audition repertory singers will 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.

Courses for Graduate Students Only

Mus. P. 841. Special Project in Music. (1-3). Individually supervised study or research emphasizing the personal needs of the student. Repeatable for credit. Prerequisite: instructor’s consent.

Mus. P. 842. Special Project in Music. (1-3). Individually supervised study or research emphasizing the personal needs of the student. Repeatable for credit. Prerequisite: instructor’s consent.

Mus. P. 843. Piano Pedagogy Seminar. (2). Variable topics, such as (1) advanced techniques in class piano or private piano (college curriculum); (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: Mus. P. 580.

Mus. P. 852. Introduction to Bibliography and Research. (3). See course listing under musicology-composition area.

Mus. P. 873. 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 also will be 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 (Mus. C.)
Graduate Faculty
Professors: Walter A. Mays, Katherine Murdoch
Associate Professors: Dean Roush (director, musicology-composition)
Assistant Professor: Silvia Herzog

Master of Music

Emphasis in Music History-Literature
Completion of a Master of Music (MM) degree, history-literature concentration, requires a demonstrated reading proficiency in one of three languages: German, French, or Italian. Students may demonstrate proficiency by satisfactorily completing the Graduate School Foreign Language Test designed by the Educational Testing Service or by completing a departmental language translation exam. A thesis also is required for the degree.

The general requirements for the MM degree are summarized at the beginning of the School of Music section of the Graduate Bulletin.

Emphasis in Music Theory-Composition
Admission to the Master of Music (MM) degree program, theory-composition concentration, requires a Bachelor of Music degree with a major in theory-composition or the demonstrated equivalent. Background deficiencies must be satisfied before students may enroll in graduate composition courses. Applicants also must submit representative compositions for examination by the composition faculty; approval for admission to candidacy is contingent upon the candidate's demonstrated ability to complete a final project in composition.
Completion of the MM degree, theory-composition concentration, requires at least one semester of 840A-C, Seminar in the Techniques of Composition. 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 composition or compositions must be submitted in a minimum of two ink copies and bound in keeping with the procedures established through the Graduate School of Wichita State University. These ink copies represent high quality of musical manuscript and must be completed in the candidate's own hand.

The general requirements for the MM degree are summarized at the beginning of the School of Music section.

Courses for Graduate/Undergraduate Credit

Mus. C. 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.

Mus. C. 523. Form and Analysis. (2). Extensive analysis of the forms and formal processes of musical literature. Prerequisite: Mus. C. 228.

Mus. C. 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.


Mus. C. 561. 18th Century Counterpoint. (2). Contrapuntal devices of the 18th century as found in the works of J.S. Bach. Prerequisite: Mus. C. 228.


Mus. C. 597-598. Organ Literature and Practice. (1-1). Performance and discussion of works for the instrument of all periods; study of organ design and construction; and practice in aspects of service playing, such as hymn playing, modulation, accompanying and improvisation. Required of all organ majors. Repeatable. Prerequisite: Mus. C. 228 or departmental consent.

Mus. C. 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 Mus. C. 334Q and 335Q.

Mus. C. 623. Opera Literature. (3). A comprehensive survey of Italian, German, French, Russian, English and American opera literature from the 17th century to the present. Mus. C. 113 is strongly recommended before taking the course. Should be only upper division or graduate students. Not limited to music majors.

Mus. C. 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.


Mus. C. 660. Applied Composition. (2). Individual study in musical composition emphasizing writing for both small ensembles and large groups in the larger forms. Repeatable. Prerequisites: Mus. C. 560 and instructor's consent.


Mus. C. 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: Mus. C. 228.

Mus. C. 672. Contemporary Techniques. (2). Advanced study of music from impressionism to the present emphasizing related literature and creative writing. Prerequisite: Mus. C. 228.


Mus. C. 725. Voice Literature. (3). A comprehensive survey of early Italian arias, French chansons, German lieder, contemporary English songs and Russian and Spanish literature.

Mus. C. 750. Musicology-Composition Workshop (1-4). Repeatable for credit. Prerequisite: instructor's consent.


Mus. C. 782-783. Piano Literature. (3-3). Survey of the historical eras of professional piano repertory.

Mus. C. 790. Special Topics in Music. (1-4). For individual or group instruction. Repeatable with departmental consent.

Mus. C. 791-792. Seminar in Music History. (3-3). Develops areas of interest in music history as time permits. Makes no effort at a chronological survey. Includes ideas evoking the most interest and considered by the instructor to be of the greatest professional benefit when interest warrants.

Courses for Graduate Students Only

Mus. C. 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.

Mus. C. 840A-C. Seminar in the Techniques of Composition. (2). Examines the nature of compositional techniques through selected works in different media: (A) large ensembles, (B) small ensembles and (C) solo literature. Prerequisites: Mus. C. 671, 672 and 641, or departmental consent.

Mus. C. 841-842. Special Project in Music; (1-3; 1-3). Individually supervised study or research emphasizing the professional needs of the student. Repeatable for credit. Prerequisite: instructor's consent.

Mus. C. 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.

Mus. C. 860. Advanced Composition. (2). Original work in the large forms and a continuation and expansion of Mus. C. 659-660. Prerequisite: Mus. C. 660 or equivalent.


Mus. C. 893. Music of Antiquity Through the Renaissance. (3).


School of Performing Arts
Bela Kiralyfalvi, chairperson

Dance (Dance)

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

Dance 501. Modern Dance IV. (3). Continuation of Dance 401. Advanced level. Emphasizes professional technique and performance quality. Repeatable for credit. Prerequisite: instructor's consent or by audition.

Dance 505. Choreography III. (3). Focuses on the choreographic process. Students create choreographic studies for more than one dancer utilizing elements studied in Choreography I and II and exploring different choreographic approaches. Further expansion may include environmental, chance, and collaborative choreographies and multimedia approaches. Prerequisites: Dance 205 and concurrent enrollment in appropriate-level modern dance or ballet technique class.

Dance 510. Ballet IV. (3). Continuation of Dance 410. Advanced level. Emphasizes professional technique and performance quality. Repeatable for credit. Prerequisite: instructor’s consent or by audition.

Dance 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: Dance 401 or 410.

Dance 565. Choreography for the Musical Theatre. (3). Introduces the process of choreography for the musical theatre from casting the chorus in a musical to staging a solo to choreographing an ensemble of 30 dancers/stagers. Includes interpreting the score and script for dance, staging non-dancers, and other projects to develop the craft of choreography for the musical stage. Prerequisites: Dance 330 or instructor's consent.

Dance 567. Practice in Teaching Dance. (3). Actual placement in teaching situation with responsibility of teaching ballet, modern and/or jazz in private studios, elementary, high schools, Ys or recreation centers. Prerequisite: Dance 545.

Dance 690. Special Topics in Dance. (0-9). For individual or group instruction. Repeatable for credit with departmental consent.

Dance 750. Dance Workshop. (1-6). Repeatable for credit.

Theatre (Thea.)

Graduate Faculty

Professors: Bela Kiralyfalvi (chairperson, School of Performing Arts) Associate Professors: Judith Babnich, Joyce Cavarozzi, Betty Monroe

Assistant Professors: Nyalla Hartman (director of theatre), Bradford Reissig

Master of Arts in Communication Wichita State's Master of Arts in Communication degree program includes an emphasis in theatre/drama. See degree requirements and more information in the Elliott School of Communication listing in the Fairmount College of Liberal Arts and Sciences section of the Graduate Bulletin.

The following courses may apply 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 Mainstage or Experimental Theatre. Repeatable twice for credit if taken in different design areas. Prerequisite: instructor’s consent.

>Thea. 516 & >Thea. 517. Playwriting I and II. (3 & 3). General education further study courses. Cross-listed as Engl. 517 and 518. The writing of scripts for performance. Emphasizes both verbal and visual aspects of playwriting. If possible, the scripts are given in class readings by actors. Prerequisite: instructor’s consent.

Thea. 520. Musical Theatre Workshop II. (2). Cross-listed as Mus. P. 530. An interdisciplinary practicum class with opportunities for student performers to refine techniques in a variety of musical theatre genres, including operetta, book musicals, and rock musicals. Provides opportunities for student directors and choreographers to gain experience in their discipline with faculty guidance and supervision. Admission is by audition.

Thea. 544. Advanced Stagecraft. (3). R; L 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. 553. Costume Construction. (3). A study of costume construction techniques at beginning and intermediate levels. Sometimes involves both skill levels; in other parts students work at different paces on separate projects. Expands the knowledge of costume students to help build a stronger base of technical expertise. Prerequisite: Thea. 253.

Thea. 555. Senior Project. (1). Cross-listed as Mus. P. 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). R; L arr. Staging and rehearsal techniques emphasizing the problems of the period and stylized play. Prerequisites: Thea. 359 or departmental consent and junior standing.


Thea. 610. Directing the Musical. (3). An interdisciplinary course utilizing interdepartmental expertise (theatre, dance, music) to teach the student how to produce a musical. Prerequisite: instructor’s consent.

Thea. 621. Academic Theatre Practicum. (2). The investigation and exploration of the theatrical act in the classroom situation within the University community. Reinforces the researching, writing, directing and performing skills. Enrolled students, functioning as a company, produce and perform for various disciplines on campus. Repeatable once for credit.

> Thea. 621Q. Development of the Theatre I. (3). General education further study course. 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. 621Q. Development of the Theatre II. (3). General education further study course. 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. Opera/Musical Theatre Audition. (1). Cross-listed as Mus. P. 790E. A practicum course which develops techniques and audition repertory singers will 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, Shakespearean, and Restoration styles. Prerequisites: Thea. 243Q, 342 and 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. Student designs 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 and 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). R; L 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: Art F.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. 725. Dramatic Theory. (3). Critical examination of selected aesthetic theories of the theatrical arts and the relationship of the theories to major dramatic works and theatrical periods. Prerequisite: Thea. 623Q, 624Q or departmental consent.

Thea. 728. Playscript Analysis. (3). Develops students' abilities to analyze playscripts from the point of view of those who face the task of staging them. Focuses on studying and testing practical methods of analysis developed by outstanding theatre directors, teachers and critics. Collective analysis and individual projects are part of the course work. Prerequisite: Thea. 623Q or 624Q.

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. Prerequisite: junior standing or departmental consent. Total of internship activity applicable toward graduation is 15 credits.

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.


Thea. 824. Development of Modern Theatre Styles. (3). An examination of the major movements in the modern theatre since 1870. Emphasizes both literary and physical elements of styles.

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.
College of Health Professions

Offices: 400 Ahlberg Hall
Peter A. Cohen, dean
Marvis J. Lary, associate dean
Juanita S. Tate, associate dean
Linda B. Black, director of student services
Nancy R. Kraemer, director of administrative services

Dental Hygiene, (316) 978-3614—Denise Maseman, chairperson
Emergency Medical Services, (316) John Dadte, director
Medical Technology, (316) 978-3146—Mary Conrad, chairperson
Physical Therapy, (316) 978-3604—Juanita Tate, acting chairperson
Physical Therapist Assistant, (316) 978-3604—Juanita Tate, acting chairperson
Physician Assistant, (316) 978-3011—Richard Muma, acting chairperson
Public Health Sciences, (316) 978-3060—Mary Lescoe-Long, acting chairperson
School of Nursing, (316) 978-3610—Juanita Tate, chairperson

The College of Health Professions offers graduate programs leading to a Master of Public Health, Master of Science in Nursing, and Master of Physical Therapy. Admission to these programs requires a bachelor's degree and the fulfillment of requirements listed for each program elsewhere in the Graduate Bulletin.

School of Health Sciences

The School of Health Sciences offers graduate programs leading to the Master of Public Health and Master of Physical Therapy degrees. Specific requirements for each degree are described under the appropriate listing below.

Basic Health Sciences (HS)

Courses for Graduate/Undergraduate Credit

HS 583. Anatomy of the Body CAVITIES. 3. The gross anatomy of the human body cavities presented in a four-week summer term using a regional approach. Teams of eight students dissect the thoracic, abdominal, and pelvic cavities on human cadavers, emphasizing cardiovascular, respiratory, gastrointestinal, and urogenital systems. Prerequisite: Biol. 203 or 223.

HS 651. Normal and Clinical Nutrition. 4. Studies human nutritional needs in normal development and the life cycles. Covers composition, classification and function of foods and nutrients, food handling and public health safety and laws, and nutrition in special situations. Includes a study of principles of nutritional support and diet therapy. Addresses the dietary concerns of a variety of clinical disorders, including gastrointestinal disorders, diabetes mellitus, cancer, burns, liver disease, obesity and weight loss, eating disorders, HIV infections, kidney and cardiovascular disease, parenteral and enteral nutrition, and surgical conditions. Studies nutritional assessment, data interpretation, care planning, record keeping, and client communications. Prerequisites: general chemistry, anatomy, and physiology.

HS 700. Gross Anatomy. 6. 3R; 9L. For students in the physical therapy program. Study of the structure of the human body emphasizing integration of anatomical information with human functional abilities. Prerequisites: four semesters of biological sciences or program consent.

HS 711. Pharmacological Management of Acute and Chronic Diseases. 3. Discusses the clinical application of specific categories of drugs 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: PHS 301, admission to graduate health professional program or PA professional program, or instructor's consent.

HS 720. Neuroscience. 3R; 2L. Integration of neuroanatomy and neurophysiology of the central and peripheral nervous systems with human functional abilities. Prerequisite: PHS 700 or program consent.

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.

Public Health Sciences

Graduate Faculty

Professors: Michael Long, James H. Swan
Associate Professor: Mary Lescoe-Long (acting MPH director)
Assistant Professors: Stephen C. Gladhurst, Ruth B. (Toni) Pickard

The Department of Public Health Sciences offers the Master of Public Health degree. A graduate certificate in public health is available for individuals whose primary goal is core public health training.

Master of Public Health (MPH)

MPH Kansas is a joint degree program of Wichita State University and the University of Kansas. The MPH program is fully accredited by the Council on Education for Public Health (CEPH). The program prepares graduates to solve public health problems as practitioners who can apply a breadth of core public health knowledge as well as expertise and experience in a specific area of public health. At WSU, students acquire core-building skills in one of the following areas of interest: public health administration, health policy, health education, health promotion, community development, long-term care system, and public health research design and analysis.

The program also offers an opportunity to actively involve current public health practitioners, other health professionals, and physicians specializing in preventive medicine in a manner that enhances the quality of instruction and provides a greater depth of expertise and experience. It is designed to meet the needs of working health care professionals in the state who may complete the degree on either a part-time or full-time basis through evening course work. The MPH degree program may be completed on an intensive basis in eighteen months or in two to four years on a part-time basis. The variety of pedagogies used in the program includes interactive television education, environmental sciences, occupational safety and health, and international public health.

Recent graduates from the MPH program at WSU are working at such places as the Kansas Health Institute in Topeka, the Wichita-Sedgwick County Department of Community Health, and Via Christi Health Systems in Wichita.
Admission Requirements

Admission to the MPH degree program requires that the applicant:

1. Have a bachelor's degree (or its equivalent) and a grade point average of 3.00 or its equivalent awarded by a regionally accredited institution of higher learning or a foreign university with substantially equivalent requirements for the bachelor's degree.
2. Demonstrate one or more years of responsible work experience in the health field, or possess a degree in a recognized health profession, or produce other evidence of training and/or experience indicative of adequate preparation for the curriculum. Assessment of work experience will be conducted on the basis of written job description(s) or other description(s) of the scope of duties obtained from prior or current employer(s).
3. Have obtained an average percentile score of 50th percentile or better on the Graduate Record Examination (GRE) or have successfully completed a postbaccalaureate degree program. Scores from other nationally recognized tests of aptitude for postbaccalaureate study may be substituted for the GRE, e.g., Medical College Admissions Test (MCAT), Law School Aptitude Test (LSAT), Graduate Management Aptitude Test (GMAT), Dental School Admission Test (DSAT).
4. Submit an official report of completion of the Test of English as a Foreign Language (TOEFL) with a composite score of 570 or better 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 MPH admissions committee.

To be considered for admission to the program through WSU, applicants should assure receipt of the following at WSU:

1. Official transcripts(s) from all institutions of higher learning attended;
2. Official report of Graduate Record Examination scores;
3. Three (3) letters of recommendation from employers, instructors, or other persons with knowledge of the applicant that is pertinent to an assessment of their potential for success in the MPH program and/or subsequent career in public health or a related discipline;
4. A properly completed Application for Admission to MPH Program of Study;
5. A resume or curriculum vita;
6. A completed graduate school application for Wichita State University.

Degree Requirements

The award of the MPH degree requires 36 credit hours including successful completion of the practicum-project or thesis. Students are expected to maintain a B average of better to remain a degree candidate. The MPH student will develop competencies in the five basic public health specialty areas, including public health administration, epidemiology, biostatistics, social/behavioral sciences, and environmental health. The student must complete 15 core course hours, a 1-hour biostatistics laboratory, and the 6-hour block of the practicum-project or thesis, as well as a minimum of 14 elective hours, as follows:

<table>
<thead>
<tr>
<th>Core courses</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>PHS 804, Principles of Statistics in the Health Sciences</td>
<td>4</td>
</tr>
<tr>
<td>PHS 808, Principles of Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>PHS 812, Health Care Policy and Administration</td>
<td>3</td>
</tr>
<tr>
<td>PHS 814, Social and Behavioral Aspects of Public Health</td>
<td>3</td>
</tr>
<tr>
<td>PHS 816, Environmental Health</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Program electives</th>
<th>a minimum of 14 hours</th>
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</thead>
<tbody>
<tr>
<td><strong>Practicum-project option</strong></td>
<td></td>
</tr>
<tr>
<td>PHS 840, Practicum/Project</td>
<td>6</td>
</tr>
<tr>
<td><strong>Thesis option</strong></td>
<td></td>
</tr>
<tr>
<td>PHS 818, Fundamental Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>PHS 885, Thesis</td>
<td>1-3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
</tr>
</tbody>
</table>

Graduate Certificate in Public Health

The certificate program in public health is a part of MPH-Kansas. The mission of MPH-Kansas is to be a nationally-recognized program of teaching, research and service that primarily prepares public health practitioners and provides opportunities for health-care providers and researchers to develop and apply individual and population-based approaches to improving the public's health in Kansas, the region, and the nation.

The Certificate in Public Health helps to achieve this mission. Students who complete the certificate in public health will bring basic public health competencies to their work in health and medicine.

Admission to this graduate certificate program requires that the applicant:

a. Have a bachelor's degree from a regionally accredited institution, 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 course work.

b. 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. Assessment of work experience will be conducted on the basis of written job description(s) or other description(s) of the scope of duties obtained from prior or current employer(s).

c. Submit an official report of completion of the Test of English as a Foreign Language (TOEFL) with a composite score of 570 or better 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 16 with a cumulative grade point average of 3.00 or above and no grades below C. Students complete the following courses:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHS 805, Principles of Statistics in the Health Sciences</td>
<td></td>
</tr>
<tr>
<td>PHS 808, Principles of Epidemiology</td>
<td>4</td>
</tr>
<tr>
<td>PHS 812, Health Care Policy and Administration</td>
<td>3</td>
</tr>
<tr>
<td>PHS 814, Social and Behavioral Aspects of Public Health</td>
<td>3</td>
</tr>
<tr>
<td>PHS 816, Environmental Health</td>
<td>3</td>
</tr>
</tbody>
</table>

Public Health (PHS)

Courses for Graduate/Undergraduate Credit

PHS 575. Special Topics or Selected Topics. (1-4). Lecture/discussion; focuses on a discrete area content relevant to the health disciplines. In-depth study of particular topic or concept, including didactic and current research findings and technological advances relevant to the topic. Open to nonmajors. Repeatable up to 6 credit hours with program consent.

PHS 630. Concepts of Quality. (3). For health care personnel. Covers issues of quality assurance and improvement in health care provision, including definition and measurement of quality. Prerequisite: PHS 320 or departmental consent.

PHS 640. Introduction to Public Health. (3). Introduction to the organization and activities of the public health system, its roles and problems. Introduction to administrative problem-solving as a structured process. Prerequisite: instructor's consent.

PHS 641. Cultural Competency in Health Care. (3). Examines the characteristics and health-related needs of population groups with higher-than-average risk of disease, disability or premature deaths, including the frail elderly, racial and ethnic minorities, homeless people, refugees and immigrants, people with AIDS, alcohol and substance abusers, teen mothers, low-birthweight infants, victims of family or other violence, the chronically or mentally ill, and persons with mental retardation and developmental disabilities. Uses a social epidemiology approach to explore relationships between public policy and private behavior. Looks at societal factors influencing the kinds of care available to vulnerable populations as well as how cultural differences among such groups affect lifestyle choices, attitudes toward health, help-seeking behavior, and service utilization. Reflecting targets stipulated by the Centers for Disease Control (CDC) in their Healthy People 2010 initiative, course identifies ways to reduce the disparities between those with high vulnerabilities and the rest of the population. Taking an applied approach, each student is engaged in significant problem-solving efforts. Accesses the community and its issues through the Health Options for
PWS 647. Health Care Operations Analysis. (3). An examination of methods for measuring the operational efficiency and effectiveness of health care and medical care programs. Includes methods to analyze and evaluate current operations and approaches to plan better manpower, facility, technology, financial planning and management control systems in a health setting. Prerequisites: PHS 320 and 328 or Mgmt. 360 or departmental consent.

PWS 652. Strategic Management in Health Service Organizations. (3). Provides an analysis of business problems seen in health care organizations from a strategic management perspective. Uses a series of case studies which require that the student integrate the functional areas of business, including management, marketing, finance, and operations. Discusses all types and sizes of health service organizations in the context of the current environment for these organizations. Prerequisite: PHS 328 or departmental consent.

PHS 686. Seminar in Health Services Organization and Policy. (3). In-depth discussion and analysis of selected topics in health care administration. Topics vary from semester to semester and include examination of specific financial, managerial, and operational problems and characteristics of health service organizations and agencies.

PHS 750. Workshop in Health Related Professions. (1-4). An examination of relevant topics directly and/or indirectly related to the delivery of health care service.

Courses for Graduate Students Only

PHS 804. Principles of Statistics in the Health Sciences. (4). An introductory graduate-level course concerning the concepts of statistical reasoning, statistical principles, and their role as the scientific basis for clinical research, and public health research, and practice. The lab reinforces concepts learned in lecture and emphasizes the application of statistical methodology to public health practice and public health research.

PHS 806. Principles of Epidemiology. (3). An introductory graduate-level course concerning epidemiologic principles and how these form the scientific basis for public health.

PHS 809. Management of Public Health Data. (3). Covers basic computing skills necessary for any advanced epidemiologic or administrative quantitative methods. Includes basic variables and dataset creation, building, maintenance, and basic descriptive (not interpretative) analysis. For students entering a variety of research, administrative, and public health settings in public health, clinical, or other fields. Software covered includes SAS, SPSS, Epi Info, Kansas Integrated Public Health System Software (KIPHS), Microsoft-Excel, and ACCESS. Course can stand alone or prepare students for biostatistics and epidemiology courses. Stresses public data presentations to prepare students to communicate about data with the lay public.

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. Includes health policy, trends in the health care system, and administrative issues. Critiques topics 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 in 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 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 and 808.

PHS 821. Community Health Assessment and Development. (3). Focuses on three areas: (1) Value issues related to community health assessment and development, including value choices, clarification of choices, trade-offs, and public judgement. Explores the value and belief systems of libertarians, classic liberals and communitarians. (2) Development of tools, both conceptual and technical, needed to conduct community health assessments. Includes measurement of health status and development of health care information systems. (3) Policy issues related to community development including allocation of health resources by comparing benefits of competing interventions. Addresses major allocation issues, such as who allocates resources, using the Health Resource Allocation Strategy.

PHS 822. Advanced Research Methods. (3). Advanced topics in health services research: advanced descriptive analysis, advanced multivariate analysis, modeling, causal interpretations, issues in evaluation, proposal writing, special issues in research in health care settings, and problems encountered on research projects. Prerequisite: PHS 818.

PHS 823. Social Epidemiology. (3). Examines the patterns and explanations for diversity in mortality and morbidity in populations, focusing on social factors including social class, race, ethnicity, culture, stress, and social relationships, both formal and informal. Explores current thinking about the explanations for mortality and morbidity patterns.

PHS 825. Health Care Marketing. (3). Cross-listed as Mkt. 890C. An examination of marketing principles as applied in the health care sector. Recognize, discuss, and apply marketing principles to health care environments. Prerequisite: Mkt. 800.

PHS 826. Health Policy. (3). Examines the forces shaping key aspects of health care policy. Analyses the political, economic, social, clinical, and scientific factors which result in given policy decisions. Pays particular attention to the pivotal role that health services research plays in the process, including its centrality to the link between policy and the management of public health problems.


PHS 830. Issues in Health Services. (3). An in-depth look at current issues facing health professionals. Topics, presented in lecture and student presentations and discussed in small groups, include health reform, access to care, other system issues, and organizational trends and strategies. Critiques topics with regard to public and private goals, consumer and provider interests, and ethics.

PHS 831. The Essentials of Health Insurance and Managed Care. (3). A graduate level introduction to the fundamental principles of health insurance and the relationship of those principles to our evolving system of health care financing. Through lecture and discussion, students become familiar with the conceptual and statistical principles of risk, and the role of insurance in handling risk, rate setting, and benefits as they apply to health insurance plans, the organization and financing mechanisms associated with today's varied health insurance plans, health insurance and managed care, and the relationship of insurance concepts to Medicare.

PHS 832. Quality Assurance of Health Care. (3). Covers issues of quality assurance in health care provision, including definition and measurement of quality.

PHS 833. Health Economics. (3). An application of classical economic theories, principles, and concepts to the traditional U.S. medical care. Considers both the traditional and unique determinants of demand and supply, emphasizing the role of need for care, provider-induced demand, and health insurance. Also considers the legitimate role of government in health care.

PHS 834. Financing Health Care Services. (3). Provides an examination of the principles of financial analysis and management used in health care institutions which are most useful to non-financial personnel. Emphasizes understand-
ing and application of general financial concepts to the health setting and includes consideration of financial organization, sources of operating revenues, budgeting, and cost allocation methods.

PHS 835. Organization, Financing, and Delivery of Health Care. (3). Introduces the organization, financing, and delivery modalities of the U.S. medical care system. Examines the development and application of hospital reimbursement methodology (DRG-based PPS) and physician reimbursement methodology (RBRVS). Introduces the principles of health insurance and examines the role of private and public (Medicare, Medicaid) health insurance in health care utilization. Also explores health status outcomes and quality of life measures.

PHS 838. Applied Data Analysis. (3). Guides students through the data analysis and data management aspects of population-based research and evaluation studies. Includes managing data on personal computers using SPSS for Windows, preparing data for computerization, cleaning and assessing the quality of data, developing and assessing measures, choosing appropriate statistical methods, reading and analyzing computer printouts, and reporting the results in research papers or technical reports. Requires application of statistical methods learned in introductory biostatistics as well as regression analysis. Students learn to use SPSS for Windows. Uses population-based data, both survey and administrative. Analytic portion of course is organized around specific research questions and the statistical tools appropriate for answering them.

PHS 840. Practicum. (1-6). Links academic studies with actual practice through observation and participation in the administrative and educational processes of public, voluntary, and private health organizations, under the direction of a preceptor from the host agency. Graded Cr/NCr only.

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 organizations, 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.

PHS 843. Health Program Planning. (3). An introductory course for students interested in developing health programs. Provides a conceptual framework of program planning and development. Develop and practice skills in the planning and evaluation of health programs by developing a program plan for a health program in a community of interest.

PHS 844. Health Promotion Methods and Materials. (3). Develop competency in selecting and evaluating appropriate methods and materials for effective health promotion programs. Includes foundations of health communication, adult education theories and practice, community health education, and health promotion materials development and evaluation. Integrates theory into practice by developing the methods and materials for a health promotion program.

PHS 858. Long-Term Care Systems. (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 addressing the needs of persons of all ages. Addresses system and organizational concerns affecting costs, outcomes, and quality. Explicitly applies a trajectory model of chronic illness and disability, conceptualizing long-term care systems in their response to chronically ill and disabled individuals. Students are encouraged to have taken PHS 812 or to take it concurrently.

PHS 875. Special Topics. (3). New or special topics presented based on sufficient demand. Prerequisite: instructor's consent.

PHS 876. Discussed Study. (1-3). Individual study of the various aspects and problems within public health. Repeatable for credit with departmental consent. Prerequisite: instructor's consent.

PHS 885. Thesis. (1-3). Repeatable to a maximum of 6 hours. Prerequisite: consent of thesis advisor.

Physical Therapy (PT)

Graduate Faculty
Professor: Kenneth Piteetti
Associate Professors: John Carter, Kathleen Lewis, Barbara Smith, Juanita Tate (interim chairperson)
Assistant Professors: Dale Barb, Robert Marseke, David Miers

Master of Physical Therapy

The program prepares individuals to enter beginning practice as a physical therapist. The 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. Following referrals from physicians, podiatrists, or dentists, the physical therapist plans and implements appropriate treatment programs for their 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 26 consecutive months. Students enter the program in the summer semester only.

Admission Requirements
Admission to the program requires that the student:

1. Have a bachelor's degree from an accredited four-year institution acceptable to the Graduate School.
2. Have a cumulative grade point average of 3.000 in the last 60 hours of graded course work, in prerequisite courses, and in all math and science courses.
3. Show evidence of completing the following: Biology—two semesters of introductory biology (which would lead to a biology major) with a laboratory
   Anatomy and Physiology—8 to 10 semester hours with laboratory
   College Chemistry—two semesters with laboratory
   College Physics—two semesters with laboratory
   English Composition—two semesters
   Exercise Physiology—one semester
   Computers—one semester computer applications course or the equivalent
   Medical Terminology—one semester hour
   Speech—one semester
   Mathematics—college trigonometry or equivalent
   Statistics—one semester
   Social Sciences—psychology, sociology, plus four more courses in any social science area
   Humanities—ethics, plus four more courses in any humanities area
4. Show evidence of 20 hours of observation or work in one or more physical therapy settings.

To be reviewed for admission, applicants should do the following:

1. Seek an application packet from the Department of Physical Therapy.
2. Submit the designated Application for Admission and supporting transcripts to the Graduate School.
3. Submit the designated Physical Therapy Application, along with reference by the published deadlines.

Applications will be accepted for review only if they are postmarked by January 31. Applicants will be notified of their admission status by the Graduate School. Applicants should be aware that their records can only be reviewed when all materials have been submitted and they have met eligibility rules. 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.

Degree Requirements
The student must maintain a 3.000 grade point average and a C or better in each of the following courses:
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injuries and pathologies. Deals mainly with the upper quarter and includes the entire upper extremity, cervical and thoracic spine. Emphasizes organizing and synthesizing information from PT curriculum to allow integration and problem-solving skills to enable students to become competent practicing physical therapists. Prerequisite: departmental consent.

PT 811. Orthopedic Assessment and Intervention II. (3). Continuation of PT 809. Deals mainly with the lower quarter and includes the entire lower extremity, sacroiliac joint, and pelvis. Emphasizes organizing and synthesizing information from PT curriculum to allow integration and problem-solving skills to enable students to become competent practicing physical therapists. Prerequisite: departmental consent.

PT 816. Physical Therapy Administration I. (2). Studies management systems including assessment, planning, organization, staffing, leadership and motivation, control, and evaluation methods. Includes environmental assessment and strategic planning, organizational design, human resource management, fiscal considerations, and leadership and management styles. Prerequisite: departmental consent.

PT 818. Physical Therapy Administration II. (2). Studies payment systems, legal aspects of physical therapy, risk management, assurance of quality physical therapy care. Includes peer review, audit, documentation, legal and ethical aspects, fiscal consideration, and community resources. Prerequisite: departmental consent.

PT 824. Educational Methods in Physical Therapy. (1). Discusses teaching and learning theories as they apply to physical therapy education of patients, students, health professionals, and the community. Includes methods of developing and evaluating content, instructional strategies, and learning outcomes. Prerequisite: departmental consent.

PT 832. Neurological Assessment and Intervention. (3). (2R; 3L). Continuation of PT 745. Adds concepts and material to allow students to assess and treat patients with neurosurgical conditions. Prerequisite: departmental consent.

PT 836. Physical Therapy in Pediatrics. (2). Provides supplemental skills for the entry-level physical therapist in the area of pediatrics. Didactic work and clinical exposure is incorporated in the class. Offered as an elective in the physical therapy program. Prerequisite: PT 730.

PT 837. Special Populations. (3). Expands upon basic evaluation and treatment skills of geriatrics, women's health, and industrial medicine regarding physical therapy practice. Also includes psychosocial elements, medical complications, health promotion and prevention information as it pertains to the three special populations listed. Prerequisite: PT 735.

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. Prerequisite: departmental consent.

PT 841. Directed Research I. (2). First in a series of three courses following PT 701 in which students work with an assigned advisor to plan either a research project or a research paper. Prerequisite: PT 701.

PT 842. Directed Research II. (2). Second in a series of three courses following PT 701 in which students work with an assigned advisor to collect data and complete statistical analyses (as appropriate) for either a research project or a research paper. Prerequisites: PT 701, 841.

PT 843. Directed Research III. (2). Third in a series of three courses following PT 701. Students complete either a research project or a research paper. Prerequisites: PT 701, 841, 842.

PT 850. Clinical Education II.* (6). First in a series of three six-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. Prerequisite: program consent.

PT 860. Clinical Education III.* (6). Continuation of PT 850. Prerequisite: program consent.

PT 865. Life Span Assessment, Intervention, and Prevention. (2). Incorporates specific areas of physical therapy as they are applied to individuals through their lifetime. Includes embryology; normal growth and development; healthy lifestyles for children, teens, and adults; obstetrics and gynecology; Emphasis prevention. Prerequisite: departmental consent.

PT 870. Clinical Education IV.* (6). Continuation of PT 860. Prerequisite: program consent.

PT 890. Thesis. (1-6). Repeatable to a maximum of 6 hours. Prerequisites: enrollment in graduate studies and consent of thesis advisor.

*In the series of three clinical courses, students experience four 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.

School of Nursing (Nurs.)
Juanita Tate, associate dean and chair

Graduate Faculty
Professor: Donna Hawley
Associate Professors: Alicia Huckstadt (director of graduate program), Janice Riordan, Elaine Steinke
Assistant Professors: Loretta Forlaw, Karen Hayes, Martha Shawver, Betty Smith-Campbell

Master of Science in Nursing
The program is individualized to meet the needs and professional goals of each student. The curriculum has been developed to accommodate part-time study (6 or fewer credit hours), as well as full-time study (9-12 credit hours). The purpose of the graduate program is to prepare advanced practitioners who function as clinical nurse specialists, nurse practitioners, administrators, and educators.

Admission Requirements
In addition to the general University requirements for admission to graduate studies, the School of Nursing requires:
1. A bachelor's degree with a major in nursing from a nationally accredited (NLN or CCNE) school. RN applicants with a degree in another discipline or those seeking the RN to BSN/MSN accelerated plan will be considered and counseled on an individual basis.
2. Admission to the Graduate School at Wichita State University.
3. Cumulative grade point average of 3.00 or better in the last 60 hours for full standing.
4. School of Nursing approval.
5. Evidence of Registered Nurse licensure in Kansas.
6. Coverage by professional liability insurance in the amount of $1/3 million individual/aggregate, to be renewed annually.
7. One year of nursing practice following professional licensure is recommended, but not required.
8. Computer literacy, including word processing skills, is essential.

Students may be admitted conditionally until all requirements for admission are completed. Items 5 and 6 must be completed before a student begins any clinical course and prior to filing the plan of study. Approval of the plan of study will clear the admission status from conditional to full standing.

Prerequisites: A course in statistics accepted by the School of Nursing and an undergraduate research course are required. Prerequisite courses are not credited to the degree.

Comprehensive Examination
A comprehensive written examination, thesis, or research project is required of all graduate nursing students. Generally the exam is completed during the student's last semester.

Options Available
Clinical Nurse Specialist (39-42 hrs)
Adult Health and Illness
Pediatrics
Psychiatric/Mental Health
Nurse Practitioner (45-46 hrs)
Acute Care
Family
Neonatal
Pediatrics
Nurse Midwifery (51 hrs)
Offered in collaboration with the University of Kansas
### Nursing and Health Care Systems Administration (42 hrs)

Dual Degree MSN and MBA (63 hrs)

Offered in collaboration with the W. Frank Barton School of Business

Graduate Certificates (Post Master's)

MSN degree for ARNPs

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### Clinical Nurse Specialist

**Course**

**Hrs.**

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<tr>
<td>Adult Health and Illness—39-42 hours</td>
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<tr>
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<td>Nurs. 715, Advanced Nursing Practice: Roles and Issues</td>
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<td>PHS 711, Pharmacological Management of Acute/Chronic Diseases</td>
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<td>Nurs. 781, Pathophysiology-Acute/Critical Health Nursing</td>
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<td>Nurs. 805, Health Promotion</td>
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<td>Nurs. 808, Advanced Role Practicum</td>
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<td>Nurs. 834, Adult Nursing Practicum</td>
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<td>Nurs. 839, Management of Acute/Chronic Health Problems of Adults</td>
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### Psychiatric-Mental Health—39-42 hours

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<td>Nurs. 843, Perspectives in Psychiatric-Mental Health Nursing</td>
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### Nurse Midwifery

This option is offered in collaboration with the University of Kansas School of Nursing. Students will apply to both WSU and KU. Contact the WSU School of Nursing for details. Graduates receive the MSN degree from WSU and a Certificate of Nurse Midwifery from KU.

#### Curriculum

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Nurs. 805, Health Promotion .......................... 3
Nurs. 851, Clinical Data Management ................. 3

Nurse Midwifery Specialty Courses
KU School of Nursing .......................... Total 22
N 830/831, Nurse Midwifery in the Antepartal Period/Practicum .......................... 3/2
N 832/833, Nurse Midwifery in the Neonatal Period/Practicum .......................... 1/1
N 836/837, Nurse Midwifery in the Intrapartal Period/Practicum ......................... 3/2
N 838/839, Nurse Midwifery in the Postpartal Period/Practicum ......................... 2/1
N 840, Nurse Midwifery in the Integration Period Practicum .......................... 6
N 841, Nurse Midwifery Professional Seminar .......................... 1

Nurse Midwifery Specialty Courses
University of Missouri Kansas City .......................... Total 5
N 564, PW Primary Health Care of Women .................. 4
N 564, NM Independent Study Primary Health Care of Women Seminar .......................... 1

Nursing and Health Care Systems Administration 42 hours
Nurs. 703, Scientific Inquiry I .......................... 3
Nurs. 705, Scientific Inquiry II .......................... 3
Nurs. 715, Advanced Nursing Practice: Roles and Issues .......................... 3
Nurs. 775, Health Care Information Systems .......................... 3
Nurs. 811, Foundations of Nursing Administration .......................... 3
Nurs. 812, Nursing Administration Practicum .................. 6
Nurs. 827, Resource Management in Nursing .......................... 3
Nurs. 851*, Clinical Data Management (to be taken towards end of course work) .......................... 3
Nurs 863, Capstone Seminar .......................... 3
Practicum (choose one): Nurs. 812 (Administration), Nurs. 814 (Education), or Nurs. 775 (Informatics) .......................... 3
Mkt. 812, Introduction to Total Quality Management or PHS 638, Concepts of Quality .......................... 3
PHS 834, Financing Health Care Services .......................... 3
Elective courses, Thesis or Project .......................... 3-6

* Nurs. 851 is not required for students completing the thesis option.

Dual MSN/MBA Degree
The School of Nursing and the W. Frank Barton School of Business offer a dual degree program in which both degrees are received. The 65-credit program includes a minimum of 27 credits in nursing, 33 credits in business administration, and 3 credits in health care administration. Seeking these degrees separately would require 87-88 credit hours.

There are additional admission requirements for the Master of Business Administration portion of the dual degree:

Admission to the MBA program is granted to students who show high promise of success in postgraduate business study and who hold a bachelor's degree from a regionally accredited institution. Although various criteria are considered in granting admission, special attention is given to the applicants' grade point averages on academic work completed and to their test scores on the Graduate Management Admission Test (GMAT).

To be admitted, applicants must have 1,050 points based on the formula: 200 times a student's overall grade point average (GPA), plus the GMAT score; or 1,100 points based on 200 times the GPA in the last 60 hours of graduate and undergraduate work completed, plus the GMAT score.

Curriculum Notes
The prerequisites, MSN core curriculum, and MBA background fundamentals are taken before the practicum courses and the required MBA courses. Practica should be planned late in the program. Either full- or part-time enrollment is possible.

Curriculum Plan
Master of Science in Nursing Portion 30 hours
Core Curriculum
Nurs. 551, Nursing and Computer Technology (MBA prerequisite) .................. 3
Nurs. 703, Scientific Inquiry I .......................... 3
Nurs. 705, Scientific Inquiry II .......................... 3
Nurs. 715, Advanced Nursing Practice: Roles and Issues .......................... 3

Clinical Concentration
Nurs. 775, Health Care Information Systems .......................... 3
Nurs. 811, Foundations of Nursing Administration .......................... 3
Nurs. 812, Nursing Administration Practicum .......................... 6
Nurs. 827, Resource Management in Nursing .......................... 3
PHS 834, Financing Health Care Services .......................... 3

Master of Business Administration Portion 33 hours
Prerequisites (not included in degree hours)
Math. 111, College Algebra .......................... (3)
Math. 144, Business Calculus .......................... (3)
Nurs. 531, Nursing and Computer Technology (see nursing above) .......................... (3)
CESP 704, Introduction to Educational Statistics (or equivalent) .......................... (3)

Background Fundamentals
Acct. 800, Financial Accounting .......................... 3
Econ. 800, Analysis of Economic Theory .......................... 3
MIS 874, Management Information Systems .......................... 3
Mkt. 800, Marketing Systems .......................... 3

Required Courses
Acct. 801, Managerial Accounting .......................... 3
Econ. 804, Managerial Economics .......................... 3
Fin. 850, Managerial Finance .......................... 3
Mgmt. 883, Business Decision Making .......................... 3
Mgmt. 882, Organizational Behavior .......................... 3

Mgmt. 885, Advanced Strategic Management .......................... 3
Mkt. 801, Marketing Management .......................... 3

Graduate Certificates (Post Master's)
Registered nurses with master's degrees (MN or MSN) from a nationally accredited master's program may be admitted to an option in the graduate nursing program. Those requesting a clinical program must have a degree with a clinical emphasis. The following options will have prerequisites which must be fulfilled prior to acceptance.

Acute Care Nurse Practitioner
Graduate Certificate 15 hours
Course and experience prerequisites may be required. Contact department for prerequisites.
Nurs. 839, Acute/Chronic Health Probs of Adults .......................... 3
Nurs. 852, Adult Case Management Practicum .......................... 3
Nurs. 855, Management of Acute/Chronic Health Problems .......................... 3
Nurs. 849, Nurse Practitioner Preceptorship .......................... 6

Nursing and Health Care Systems Administration
Graduate Certificate 15 hours
Course and experience prerequisites may be required. Contact department for prerequisites.
Nurs. 812, Nursing Administration Practicum .......................... 6
Nurs. 827, Resource Management in Nursing .......................... 3
Nurs. 812, Nursing and Health Care Systems Administration Practicum or Nurs. 814, Nursing Education Practicum .......................... 3
Nurs. 863, Capstone Seminar .......................... 3

Adult Health and Illness Clinical Nurse Specialist
Graduate Certificate 12 hours
Course and experience prerequisites may be required. Contact department for prerequisites.
Nurs. 808, Advanced Role Practicum .......................... 6
Nurs. 844, Adult Nursing Practicum .......................... 3
Nurs. 839, Management of Acute/Chronic Health Problems of Adults .......................... 3
Nurs. 852, Adult Case Management Practicum .......................... 3

Family Nurse Practitioner
Graduate Certificate 17 hours
Course and experience prerequisites may be required. Contact department for prerequisites.
Nurs. 803, Primary Care I: Management of Common Health Problems .......................... 3
Nurs. 804, Primary Care I: Practicum .......................... 4
Nurs. 809, Primary Care II: Management of Complex Health Problems .......................... 3
Nurs. 810, Primary Care II: Practicum .......................... 4
Nurs. 849, Nurse Practitioner Preceptorship .......................... 3

Neonatal Nurse Practitioner
Graduate Certificate 20 hours
Course and experience prerequisites may be required. Contact department for prerequisites.
Nurs. 815, Neonatal Nursing I .......................... 4
Nurs. 861, Neonatal Nursing II .......................... 4
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<tr>
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<td>Nurs. 777</td>
<td>Neonatal Physiology</td>
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<tr>
<td>Nurs. 789</td>
<td>Neonatal Pharmacology</td>
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**Scholarship Requirement**—Choose one 6 hours

1. Nurs. 821, Thesis 6 hours
2. Nurs. 823, Scholarly Project 3 hours

*Comprehensive Exam*

**Practicum** 6 hours

Nurs. 808 Advanced Role Practicum 6 hours

The suggested electives for the MSN degree for ARNPs are dependent on the option chosen. Some electives are: Nurs. 531, Nursing and Computer Technology; Nurs. 813, Foundation of Nursing Education; Nurs. 733, Diabetes Mellitus (online); Nurs. 775, Health Care Information Systems; Nurs. 720, Human Lactation (online); Nurs. 791, Common Dermatologic Problems in Primary Care (online); Nurs. 791L, Acute Low Back Pain (online).

**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. 506, Transcultural Nursing. (3). Transcultural nursing is the provision of nursing care sensitive to the needs of individuals, families, and groups. Since health and illness are strongly influenced by an individual’s cultural background, an awareness of the cultural aspects of lifestyle, health beliefs, and health practices enhance nursing assessment and care. Course examines the cultural influences on health and illness in a variety of groups, emphasizing developing more sensitive and effective nursing care. Prerequisites: admission to School of Nursing or instructor’s consent.

Nurs. 530, Concepts of Loss. (3). Elective. Strategies for helping clients and families cope with broad aspects of loss, from temporary transient illness to death. Includes human response, through the life span, to changed body image, disability and disfigurement, chronic illness, dying and death. Includes grief and mourning. Open to nonnursing majors.

Nurs. 531, Nursing and Computer Technology. (3). Focuses on basic terminology and use of computer software for nursing education, practice, and administration. Opportunity for hands-on experience with microcomputers. Prerequisite: admission to the nursing program or instruc-
tor's consent. Previous knowledge of computers or computer technology is not required.

Nurs. 543. Women and Health Care. (3). Cross-listed as Wom. S. 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.

Nurs. 566. Perspectives on Self-Help Groups. (3). Cross-listed as Psy. 566 and Sc. Wk. 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.

Nurs. 700. Assessment of Pediatric and Adolescent Clients. (3). A theoretical and clinical laboratory experience; students focus on the assessment of pediatric and adolescent clients. Open admission to RN and graduate students.

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. Emphasizes detailed health history taking, differentiation, interpretation and documentation of normal and abnormal findings. Includes lecture, discussion and demonstration of history taking and an integrated physical assessment. Prerequisite: admission to graduate nursing program. Corequisite: 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. Corequisite: Nurs. 701.


Nurs. 704. Health Maintenance of the School Age Child. (3). Examines and applies major theories, clinical concepts and research studies related to school health nursing. Open to RN and graduate students.

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. Prerequisite: Nurs. 703 or departmental consent and admission to graduate nursing program.

Nurs. 706. Organization and Management of the School-Health Program. (3). Examines and applies concepts of organization and management to the school-health delivery system. Explores political, economic and social factors which influence the school-health delivery system. Open to RN and graduate students.

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.

Nurs. 708. School Nurse Practicum. (2). An intensive clinical experience; students analyze, design, implement and evaluate nursing systems to promote the health of individuals in the school-health delivery system and the broader community system. Open to RN and graduate students.

Nurs. 713. Advanced Health Assessment of the Neonate. (4). A developmental and systematic approach to the advanced assessment of physiological, psychological, sociocultural and developmental aspects of the fetus, mother in the prenatal period, and the neonate is discussed. Builds on basic assessment skills and emphasizes perinatal, genetic and embryologic factors impacting neonatal development. Explores ways to assess the pregnant woman for problems, the use of special diagnostic tests, and the assessment of the neonate. Requires 40 laboratory/clinical hours, providing opportunities to implement various assessment and diagnostic procedures, complete health histories, perform complete physical examinations and complete a perinatal history. Prerequisite: admission to NNP track or department consent.

Nurs. 715. Advanced Nursing Practice: Roles and Issues. (3). Designed for students preparing for advanced practice. Discusses historical development of advanced practice role, the ethical, legal, political, and economic issues of such a role and current trends and future directions. Focuses on issues ranging from concerns within the local practice setting to national policy issues related to advanced nursing practice. Prerequisite: admission to graduate nursing program.

Nurs. 718. Advanced Technologies. (2). Focuses on application of clinical skills and interpretation of technologies utilized in a variety of clinical settings. Nurse practitioner students practice these skills in laboratory and/or clinical settings. Prerequisite: admission to one of the NP options and departmental consent. Enrollment is limited.

Nurs. 720. Human Lactation. (2-3). 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. 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. 744. 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. Clinical Teaching Strategies. (3). Explores alternative teaching strategies for the clinical educator to accommodate the changing health care scene. Discusses clinical teaching methods. A clinical rotation plan with accompanying clinical evaluation tool is constructed after the student, subject and setting are delineated. Investigates roles of the educator in teaching clinically.


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. Prerequisite or corequisite: Nurs. 775.

Nurs. 777. Physiology/Pathophysiology of the Neonate. (3). Uses concepts of embryology, neonatal physiology and pathophysiology to provide an in-depth study of normal functioning and alteration of normal physiological functioning in cells, tissues, organs, and organ systems. Alterations form the basis for understanding a variety of
pathophysiological conditions and the manifestations and
impact of abnormal physiological functioning on neonates.
Addresses both generalized processes and major system
dysfunctions. Prerequisite: admission to NNP track or
department consent.

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. Brain Disorders in Mental Illness: Assessment
and Nursing Interventions. (3). For the student preparing
for advanced practice in psychiatric nursing. Considers
neurotransmitters, neuroanatomy, neuropathology in the
assessment and intervention approaches to the brain disorders
of major mental illnesses. 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 and departmental
consent and admission to one of the NP options.

Nurs. 789. Pharmacology for the Neonate. (3). Discusses
pharmacological agents used in the management of neonates. Reviews pharmacological principles and applies
these to the use of drugs in the level II or III NICU. Explores the clinical use of drugs in the management of specific illnesses of the neonate. Stresses legal considerations for the Advanced Practice Nurse. Prerequisite: admission to NNP option or departmental consent.

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. (3). Explore in-depth scientific knowledge base relevant to selected pathophysiological states confronted in primary care. This provides the basis for the foundation of scientific decision 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. Prerequisites: admission to graduate nursing program and departmental 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. 796. Nursing Practicum in Special Setting. (1-6).
Opportunity for directed practice in various settings including
clinical specialties, nursing administration, nursing education and consultation. Prerequisites: departmental
consent.

Nurs. 799. Directed Readings in Nursing. (1-2). Student engages in critical search of the literature in an area related to the profession and practice of nursing. Prerequisites: departmental consent.

Courses for Graduate Students Only

Nurs. 803. Primary Care I: Management of Common Health Problems through the Life Span. (3). Focuses on common health problems seen in individuals and families throughout 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 common problems in urban and rural patients, interventions to restore individual and family levels of pre-illness health, and positive behaviors. Prerequisites: all core courses, Nurs. 718, 786 and admission to the FNP option. Prerequisites or corequisites: Nurs. 715, 793 and 795. Corequisite: Nurs. 804.

Nurs. 804. Primary Care II: Practicum. (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. Emphasizes health promotion, maintenance, and prevention interventions. Prerequisite: admission to the FNP option. Corequisite: Nurs. 803.

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 provide an understanding of health and lifestyle behaviors. Prerequisites: Nurs. 703 and 705 (705 can be concurrent).

Nurs. 808. Advanced Role Practicum. (3-6). Prepares the student for advanced nursing practice. An intensive practicum experience; the student works with an advanced nurse practitioner in a selected clinical setting. Emphasizes role development, case management and analysis of strategies to improve nursing practice. Prerequisites: all core courses, Nurs. 795 or PHS 711, pathophysiology (Nurs. 781, 783 or 793) and at least 6 hours of a clinical concentration.

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. 803, 804 and admission to the FNP option. Corequisite: Nurs. 810.

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 upon analysis and evaluation of clinical situations and cases. Prerequisites: admission to the FNP option. Corequisite: Nurs. 809.

Nurs. 811. Foundations of Nursing and Health Care Systems Administration. (3). Assists the student in acquiring theoretical knowledge of organizations. Considers current issues and research in nursing and health care systems and its impact on nursing practice. Prerequisites: Nurs. 703 and 705. Prerequisite or corequisite: Nurs. 715.

Nurs. 812. Nursing and Health Care Systems Administration Practicum. (1-6). Practicum in a health care setting; student, under professional guidance, becomes directly involved in existing leadership, administrative, and management systems. A seminar accompanies the field experience. Types of experience may include roles in nursing education or service, mid-level nursing administration, staff development, or community health. Repeatable with instructor's consent up to a maximum of 6 hours. Prerequisite or corequisite: Nurs. 811 or 827.

Nurs. 813. Foundations of Nursing Education. (3). Assists the student explore theoretical and practical aspects to curriculum development and teaching of nursing in higher education and continuing education. Prerequisite: Nurs. 703 and 705. Prerequisite or corequisite: Nurs. 715.

Nurs. 814. Nursing Education Practicum. (3 or 6). Student, under professional guidance, becomes directly involved in clinical and classroom teaching, curriculum development and participation in other faculty functions in higher education and continuing education. A seminar accompanies the field experience. Prerequisites: departmental consent and Nurs. 813

Nurs. 815. Neonatal Nursing I. (4). First of two courses that integrate the physiologic, pharmacologic, and assessment skills and principles in determining appropriate care of the ill neonate. Uses current research and evidenced-based practices as the course framework. Emphasizes the effects of critical conditions on the growth and development of the
neonate, including subsequent chronic health problems and the short and long-term consequences to the child's family. Discusses disorders of the central nervous, pulmonary, and cardiovascular systems. Demonstrates and applies the use of specific interventions and diagnostic procedures in laboratory/clinical settings during 40 hours of required clinical activities. Prerequisites: core courses, Nurs. 713, 717, 750, and 789.

Nurs. 819. Foundations of Psychiatric Mental Health Nursing. (3). Evaluates major theories, clinical concepts and current research in psychiatric/mental health in relation to formulating a conceptual model for nursing practice. Prerequisites: Nurs. 701, 702, 703 and 705. Prerequisite or corequisite: Nurs. 715.

Nurs. 821. Thesis. (1-6). Graded S/U only: Student, in conjunction with the academic advisor and a three-member thesis committee, designs and conducts a formal research project. Prerequisites: admission to graduate nursing program and departmental consent.


Nurs. 823. Graduate Project: Alternative to Thesis. (1-3). Graded S/U only. 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. Prerequisites: admission to graduate nursing program, departmental consent, and 12 hours of graduate course work, including Nurs. 703 and 705. Repeatable up to 6 credit hours.

Nurs. 825. Independent Study. (1-6). Provides opportunity for the student to develop, in collaboration with a faculty member, objectives and protocol for independent work related to the practice of nursing. Prerequisites: admission to graduate nursing program and departmental consent.

Nurs. 827. Resource Management in Nursing. (3). Focuses on the assessment and management of resources necessary to operate nursing and health care systems including: informational systems needed to manage resources; budget process management; personnel management from recruitment through termination, including staffing and scheduling; and management of relationships with patients, physicians, and diverse departments with different philosophies and views. Prerequisites: Nurs. 703 and 705. Prerequisite or corequisite: Nurs. 715.

Nurs. 829. Health Care during Growth and Development of Children and Families. (1-4). Focuses on physical and psychosocial developmental changes from infancy through young adulthood. Considers factors that facilitate or interfere with healthy development. Provides an introduction to family theories including family development, family systems, and family stress. Emphasizes the role of the Advanced Practice Nurse in assisting children and families during the developmental years. Modular format allows students to select specific units: Unit One: Growth and Development: The Infant and Young Child (1 credit); Unit Two: Growth and Development: The Adolescent and Young Adult (1 credit); Unit Three: Family Issues: Part I and II (1 credit each). Prerequisites: Nurs. 703 and 705.

Nurs. 832. Pediatric and/or Women's Health Nursing: Practicum I. (3). (P). An intensive clinical experience; student focuses on the process of systematic developmental, psychosocial and health assessment of individuals within a family system. Experiences based on the student's clinical interests. Prerequisite: all core courses. Prerequisite or corequisite: Nurs. 829.

Nurs. 833. Adult Nursing Practicum. (3). An intensive clinical experience; student designs, implements, and evaluates nursing care for adults. Selects specialized areas of study; may involve health maintenance or illness care of acutely or chronically ill adults. Prerequisites: all core courses, Nurs. 781 and 805, and PHS 711. Prerequisite or corequisite: Nurs. 839.

Nurs. 836. Pediatric and/or Women's Health Nursing: Practicum II. (3). An intensive clinical experience; student analyzes, prioritizes and designs therapeutic interventions in the management of common health problems affecting individuals and family systems. Experiences based on the student's clinical interests. Prerequisite: all core courses and Nurs. 805. Prerequisite or corequisite: Nurs. 853.

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. Emphasizes assessment, measurement, and interventions related to acute and chronic health problems. Prerequisites: all core courses, Nurs. 781 and 805, and PHS 711.


Nurs. 847. Pediatric Primary Care I: Management of Common Health Issues. (3). Focuses on comprehensive assessment, diagnosis, and management of health and common health problems seen in children and families during the infant, childhood, and adolescent years. Stresses applications of current research and theory-based interventions appropriate for management by Advanced Registered Nurse Practitioners. Emphasizes strategies and protocols to manage common problems in urban and rural patients, interventions to restore children's and family's levels of pre-illness health, and positive behaviors. Prerequisites: Nurs. 703, 702, 703, 705, 718, 796, 829 and admission to the PNP option. Prerequisites or corequisites: Nurs. 715, 793 and 805.

Nurs. 848. Pediatric Primary Care II Practicum: Clinical Management of Common Health Issues. (3). Concentrated clinical practicum in a primary care setting that addresses individuals and families during the infant, childhood, and adolescent age span, within the context of the community. Emphasizes history taking; cultural, developmental, nutritional, and physical assessment; and documentation skills. Seminars focus on analysis and evaluation of clinical situations. Prerequisites: admission to the PNP option. Prerequisite or corequisite: Nurs. 847.

Nurs. 849. Nurse Practitioner Preceptorship. (3 or 6). A concentrated clinical practicum in an acute or primary 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. Prerequisite: departmental consent and admission to one of the NP options.

Nurs. 851. Clinical Data Management. (3). Management of clinical data and its relationship to advanced nursing practice. Existing data from clinical practice settings identified and analyzed for presentation both verbally and in report form. Emphasizes using existing data both to determine health care outcomes and to evaluate delivery of care. Communication of findings will occur. Prerequisites: all core courses. Prerequisite or corequisite: enrollment in a course within the student's clinical or administration option.

Nurs. 852. Adult Case Management Practicum. (3). Applies case management principles in this intensive clinical experience as the student designs, implements and evaluates nursing care for adults. Emphasizes measuring clinical outcomes and management of resources. Prerequisites: all core courses, Nurs. 781 and PHS 711. Prerequisite or corequisite: Nurs. 805 or 839.

Nurs. 853. Reproductive Health of Women. (3). Examines women's health issues and promotes positive self-care practices for common health problems. Includes epidemiology, assessment data, diagnostic methods and self-care interventions. Encompasses health education and counseling to women during the life cycle and health care resources for women's health. Prerequisite: all core courses and Nurs. 829 and 832.

Nurs. 855. Management of the Acutely and Critically Ill Adult. (3). Examines advanced nursing interventions focused on client stabilization and management of complications in the acutely/critically ill adult. Emphasizes 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. 805, 834, 839, 852, admission to the ACNP option and departmental consent.
Nurs. 857. Pediatric Primary Care I: Management of Common Health Issues. (3). Focuses on health promotion, health maintenance, and risk reduction for children and adolescents with special health care needs. Emphasizes comprehensive assessment, diagnosis, and management of health, developmental, and chronic health problems within a family and developmental framework. Considers children with developmental and learning disabilities and children with selected complex and chronic health problems. Emphasizes the collaborative and interdisciplinary nature of a child's care in school and other settings. Addresses the unique needs of children in underserved communities. 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 and interventions to restore children's and family levels of pre-illness health, including secondary and tertiary prevention. Prerequisites: Nurs. 847 and 848.


Nurs. 859. Pediatric Primary Care III: Advanced Health Care for School Nurse Practitioners. (3). This multidisciplinary course builds upon the dimensions of assessment and health care for children and adolescents in a family and community framework and provides a foundation for advanced practice in school health from the perspectives of educators and health care providers. Focuses on major temporary issues that affect the health and education of children and adolescents in the school community. Considers theories, models, and concepts from education, public health, and nursing as they relate to schools. Focuses on the link between health and education. Examines political, sociological, economic, and environmental factors, as well as major causes of morbidity and mortality. Special emphasis on cultural diversity and vulnerable and underserved populations-at-risk and strategies that enhance learning and health promotion. Prerequisites: previous courses in the PNP curriculum or departmental consent.


Nurs. 861. Neonatal Nursing II. (4). Second of two courses that integrate the physiologic, pharmacologic, and assessment skills and principles in determining appropriate care of the ill neonate. Uses current research and evidenced-based practices as course framework. Emphasizes the effects of critical conditions on the growth and development of the neonate, including subsequent chronic health problems as well as the short- and long-term consequences to the child's family. Discusses disorders of the gastrointestinal, renal, endocrine, hematologic, musculoskeletal, ophthalmologic, dermatologic, and immune systems, the use of specific interventions and diagnostic procedures are demonstrated and applied in laboratory/clinical settings during 40 hours of required clinical activities. Prerequisites: core courses, Nurs. 713, 777, and 789.

Nurs. 862. Neonatal Nurse Practitioner Preceptorship I. (6). First of two preceptorship experiences which can be taken concurrently or in consecutive semesters; there will be a minimum of 300 clinical hours. Provides opportunities to apply knowledge and skills from advanced nursing role, theory, research, and neonatal clinical courses to the advanced therapeutic management of high risk neonates. Emphasizes therapeutic measures within a conceptual framework or model and applying findings from research relevant to comprehensive care of neonates. The client system is the neonate and family. Prerequisites: Nurs. 815 and 861.

Nurs. 863. Nursing and Health Care Systems Administration: Capstone Seminar. (3). Assists the student to integrate knowledge from nursing and administration courses to develop the individual's own management/administration practice. Utilizes a seminar approach with case studies, student presentations, and presentations by executives and other students in the community. Prerequisites: Nurs. 703, 705, 715, 775, 811, 812 (3 hours), 427; PHS 834 or 442; and Mkt. 812 or PHS 638. Corequisites: Nurs. 812 and 851.

Nurs. 864. Neonatal Nurse Practitioner Preceptorship II. (6). Second of two preceptorship experiences which can be taken concurrently or in consecutive semesters. There will be a minimum of 300 clinical hours. Provides opportunities to build upon knowledge and skills gained during Nurs. 862 regarding the advanced therapeutic management of high risk neonates. Emphasizes therapeutic measures within a conceptual framework or model and applying findings from research relevant to comprehensive care of neonates. The client system is the neonate and family. Prerequisites: Nurs. 815 and 861. Prerequisite or corequisite: Nurs. 862.

The following abbreviations are used in the course descriptions: R means required and L for laboratory. For example: 4R; 2L means 4 hours of lecture and 2 hours of lab. P means practicum/clinical hours; 40P means 40 hours of practicum per week.
Fairmount College of Liberal Arts and Sciences

Offices: 200 LAS
David C. Glenn-Lewin, dean
William Bischoff, associate dean
Sharon Iorio, associate dean
Gerald Lichti, assistant dean

Departments and Programs

Anthropology, (316) 978-3195—Peer Moore-Jansen, chairperson; Clay A. Robarchek, graduate coordinator
Biological Science, (316) 978-3111—David McDonald, chairperson; William Hendry III, graduate coordinator
Chemistry, (316) 978-3120—D. Paul Rilema, chairperson; Dennis Burns, graduate coordinator
Communication, Elliott School of, (316) 978-3185—Shirley Staples Carter, director; Katherine Hawkins, graduate coordinator
Community Affairs, School of, (316) 978-7200—William Schmidt, director and graduate coordinator
Criminal Justice, (316) 978-7200—Quint Thurman, graduate coordinator
Ethnic Studies, (316) 978-7200—Anna Chandler, program director
Gerontology, (316) 978-7200—William Hayes, graduate coordinator
Computer Science, (316) 978-3156—Shang-Ching Chou, chairperson; Raffi Bagat, graduate coordinator
English, (316) 978-3130—Margaret Dawe, chairperson; Sarah Daugherty, graduate coordinator
Environmental Science, (316) 978-6414—Karen Brown, graduate coordinator
Geology, (316) 978-3140—John C. Gries, chairperson; Salvatore J. Mazzullo, graduate coordinator
History, (316) 978-3150—Craig Miner, chairperson; Keith Pickus, graduate coordinator
Liberal Studies, (316) 978-3108—Ramona Liera-Schwichtenberg, graduate coordinator
Mathematics, (316) 978-3160—Buma L. Fridman, chairperson; Kenneth Miller, graduate coordinator
Modern and Classical Languages and Literatures, (316) 978-3188—Dieter Saalmann, chairperson; Maria Rey-Lopez, graduate coordinator
Philosophy, (316) 978-3125—David Soles, chairperson
Physics, (316) 978-3190—Hussein H. Handah, chairperson; Syed Taher, graduate coordinator
Political Science, (316) 978-3165—James Sheffield, chairperson
Psychology, (316) 978-3170—Charles Burdiss, chairperson; Gary Grey, graduate coordinator
Religion, (316) 978-3108—Stuart Lasine, director
Social Work, School of, (316) 978-7250—Cathleen Leszczynski, director and graduate coordinator
Sociology, (316) 978-3280—Ron Massen, chairperson; David Wright, graduate coordinator
Urban and Public Affairs, Hugo Wall School of, (316) 978-7200—Ed Flentje, director
Public Administration, (316) 978-6693—Samuel Yeager, graduate coordinator
Urban Studies, Center for, (316) 978-7240—Ed Flentje, director
Women's Studies, (316) 978-3358—Dorothy Miller, chairperson

Graduate Certificates

Applied Communication, (316) 978-6059—Katherine Hawkins, graduate coordinator
Great Plains Studies, (316) 978-6764—Diane Quantic, program coordinator

Anthropology (Anth.)
Graduate Faculty
Professors: Donald Blakeslee, Robert Lawless, Clayton A. Robarchek (graduate coordinator)
Associate Professors: Dorothy Billings, David Hughes, Peer Moore-Jansen (chairperson)

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

Admission Requirements
Admission to the MA program in anthropology requires the completion of a minimum of 15 semester hours in anthropology to include a course in history and theory of anthropology and a foundation in the main subdivisions of the discipline, a grade point average of 2.750 (on a 4.000 scale) in the last 60 hours of credit, and a 3.000 grade point average in anthropology.

Degree Requirements
The MA degree in anthropology has three tracks. Track 1 requires the completion of 30 semester hours, including the presentation of a thesis and comprehensive exams. At least 60 percent (18) of these hours must be in courses numbered 700 or above. The 30 hours must include a core course in archaeological anthropology (Anth. 736), cultural anthropology (Anth. 746), biological anthropology (Anth. 756), and two seminars. Track 2 requires the completion of 33 semester hours, including the three core courses (Anth. 736, 746, and 756), two seminars, and the presentation of a thesis or approved project. Track 3 requires the completion of 36 semester hours, at least 21 in anthropology including Anth. 736, 746, and 756, and two seminars. At least 12 are from/m in (an) other discipline(s) are also required. Either an examination or an internship is also required. A total of 4 hours of thesis, project, or internship, to complete the 30, 33, or 36 semester hours requirements for each track shall include either 2 hours each of Anth. 871 and 872 (intensive), Anth. 873 and 874 (project), or Anth. 875 and 876 (thesis). Comprehensive exams are graded by all full-time teaching faculty in the department. Proposals for theses, projects, and internships are approved by committee. Students in all tracks are required to form a thesis/project/internship committee of at least two full-time graduate teaching faculty from within the anthropology department and at least one graduate faculty from another department. The committee also approves an oral defense of all theses, projects, and internships.

Examinations
All students in Track 1 and those students in Track 3 who so elect must pass a written proficiency examination in the fundamentals of anthropology. Students must complete a minimum of 15 hours of graduate work in anthropology before taking the examination. 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.

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 archaeological materials. Direct experience in all phases of preparing excavated materials for analysis, including cleaning, restoring, preserving, numbering and cataloging of ceramic and lithic artifacts and other remains. Prerequisite: Anthr. 305Q.

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

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

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

Anth. 514. Anthropology of Aging. (3). General education further study course. Cross-listed as Genr. 514. An anthropological analysis of the latter stages of the life cycle with historical and cross-cultural perspectives.

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

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

>Anthr. 519. Applying Anthropology. (3). General education further study course. The application of anthropological knowledge in the solution of social problems in industry, public health and public administration. Prerequisite: Anthr. 101Q.

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


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

Anthr. 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: Anthr. 305Q.

Anthr. 540. The Indians of the United States: Conquest and Survival. (3). An anthropological inquiry into four centuries of cultural contact, conflict, resistance, and renaissance. Prerequisite: Anthr. 101Q or instructor's consent.

>Anthr. 542. Women in Other Cultures. (3). General education further study course. Cross-listed as Wom. S. 542. Deals with the place of women in primitive and other nonwestern 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.

Anthr. 555. Paleanthropology 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: Anthr. 101Q or Biol. 201Q or equivalent.

Anthr. 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, measurements and analysis and skeletal preservation and reconstruction. Individual projects are undertaken. Prerequisite: Anthr. 101Q or equivalent.


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

Anthr. 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: Anthr. 101Q or equivalent.

Anthr. 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: Anthr. 502 and instructor's consent.

Anthr. 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.

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

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

Anth. 611. Southwestern Archaeology. (3). General education further study course. A comprehensive survey of the prehistoric, historic and living cultures of the American Southwest particularly emphasizing the cultural continuities and changes covering 11,000 years. Prerequisites: 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. Prerequisites: 6 hours of anthropology and departmental consent.

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

Anthr. 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.

Anthr. 651. Language and Culture. (3). Cross-listed as Ling. 651. An introduction to historical and descriptive linguistics. Deals with the ethnography of communications, lexicostatistics and linguistic determination. Prerequisite: 6 hours of anthropology.

Anthr. 667. English Syntax. (3). Cross-listed as Engl. 667 and Ling. 667. Examination of aspects of the structure of English and their relation to linguistic theory. Prerequisite: Engl. 315 or Ling. 577 or Anthr. 577 or instructor's consent.

Anthr. 679. Field Methods in Anthropology. (3-6). A maximum of 6 hours can be counted as anthropology hours toward either degree. Instructs the student in archaeological and ethnological field methods through actual participation in a field research program. The project depends upon the specific Summer Session and varies from year to year. Prerequisite: instructor's consent.

Anthr. 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.

Anthr. 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. Prerequisite: graduate standing and 6 hours of anthropology.

Anthr. 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. Prerequisite: graduate standing and 6 hours of anthropology (must include Anthr. 101Q or instructor's consent).

Anthr. 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. Offered Cr/NC only. Prerequisite: graduate status.

Anth. 790. Introduction to Research. (3). Bibliography, methodology and the philosophy of research. Repeatable for a total of 6 hours of credit. Prerequisites: 6 hours of American studies course work or equivalent and instructor’s consent.

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. Prerequisite: Anth. 501 or departmental consent.

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/modem 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 paleoarchaeology 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. Prerequisite: 5 hours of anthropology.

Anth. 847. Colloquium in Anthropology. (1-3). S/U grade only. Repeatable for a maximum of 3 hours. 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. Students presenting colloquium papers receive two credits. Prerequisite: graduate standing in anthropology.

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

Anth. 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 work place approved by departmental committee. Course need not require a tangible end product (e.g., paper). May be repeated, but limited to a total of 4 credit hours. Prerequisite: 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 anthropological unit in schools) that applies anthropological method and theory to the specific needs of an institution, group, or population. Requires a tangible end product (e.g., paper, thesaurus, and/or visual production or exhibit). May be repeated, but limited to a total of 4 credit hours. Prerequisite: committee consent.


Biological Sciences (Biol.)

Professors: L. Raymond Fox, William J. Hendry III (graduate coordinator), Wendell W. Leavitt, Brooks Keel (advisors)

Associate Professors: George R. Bousfield, Karen L. Brown Sullivan, John S. Davis, Donald A. Dislcr, Michael J. Lydy, Jeffrey V. May, J. David McDonald (chairperson)

Assistant Professors: Christopher M. Rogers, Mark a. Schneegurt, Arthur L. Youngman

Master of Science and Areas of Specialization

The Master of Science (MS) program offered by the Department of Biological Sciences provides an advanced education under either the research thesis option or nonthesis option. A variety of specializations in the broad areas of cell, molecular, endocrine, reproductive, and environmental biology are available. All incoming students are assigned to a temporary graduate advisor after which they choose a permanent graduate advisor and committee. The advisors work with the students to develop a program of studies that meets the 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 at least four weeks before registration. Admission as a full standing student requires: (1) the completion of 24 semester hours in biological sciences and 15 semester hours in chemistry; (2) an overall grade point average of at least 2.750 (4.000 scale) for the most recent 60 semester hours completed; (3) a grade point average of at least 3.000 (4.000 scale) for all undergraduate biological sciences courses; (4) three letters of reference from science faculty; (5) receipt of GRE general aptitude and advanced test in biology scores; and (6) TOEFL scores if English is not the student's first language. Students who do not meet these requirements but who wish to begin graduate course work may qualify for conditional acceptance into a nondegree category.

Degree Requirements

All students are required to attend the departmental seminar course (Biol. 797) each semester and must give at least two oral presentations. Candidates selecting the research thesis option must complete 30 credit hours of graduate work, including the presentation and oral defense of a thesis based on original research. In addition, all students in the research thesis option must demonstrate proficiency in at least one research tool, such as knowledge of a modern foreign language or completion of acceptable course work in statistics or computer applications. Graduates who select this option often move on to advanced research degrees or careers in research science. Candidates selecting the nonthesis option must complete 36 credit hours of graduate work and successfully pass comprehensive exams in two areas of biology. The nonthesis option is designed for, but not limited to, students employed in professional areas such as the medical community and secondary education who wish to expand or update their knowledge of biology.

Nonmajor Courses

(May not be used to satisfy the requirements for the major)

Courses for Graduate/Undergraduate Credit

Biol. 518Q. Biology of Aging. (3). Cross-listed as Geront. 518Q. An introduction to the phenomenon of aging, including a survey of age-related processes and mechanisms of senescence emphasizing human. Students earning graduate credit perform a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: junior standing.

Biol. 519Q. Foundations of Human Heredity. (3). General education further study course. Introduction to the mechanisms and societal significances of developmental, transmission and population genetics of humans. Attention to inborn errors of metabolism and development and the roles of genetic counseling and genetic engineering in their management. For students majoring outside of the natural sciences and does not carry credit toward a biological sciences major or minor. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: junior standing.

Major Courses

(Used to satisfy the requirements for the major)

Courses for Graduate/Undergraduate Credit

Biol. 502. Vascular Plants. (4). S/U. 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
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 Hills provide an opportunity to collect specimens and to observe ecology and distribution of native species of flowering plants. Prerequisite: Biol. 204 or instructor's consent.

Biol. 524. Vertebrate Zoology. (4). 2R; 4L. Evolution, distribution, systematics, 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 the instructor. Prerequisite: Biol. 204 or Biol. 527 also is recommended.

Biol. 525. Introduction to Ecotoxicology. (4). 2R; 2L. An overview of concepts and methodology for conducting tests in the field of ecotoxicology. Examines tests at the molecular, individual, and population level. Covers basic ecological assessments, such as Index of Biological Integrity, Index of Biological Well-Being, and Rapid Bioassay Protocols; and toxicological protocols like acute and chronic bioassays, biomarkers, and modeling techniques using Quantitative Structure Activity Relationships. Recommended for students interested in learning about the applied methodology used in the rapidly evolving field of ecotoxicology. Prerequisites: Biol. 418 or equivalent and Chem 531 or equivalent, or instructor's permission.

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.

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. Prerequisite: Biol. 204.

Biol. 528. Parasitology. (4). 2R; 4L. 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. Prerequisite: Biol. 204.

Biol. 532. Entomology. (3). 3R; 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. Prerequisite: Biol. 204.

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

Biol. 535. Mammalian Physiology Laboratory. (Q). 4L. An empirical approach to mammalian physiology. Students seeking graduate credit submit an additional laboratory report relating the results of a laboratory experiment to those found in the current technical literature. Prerequisites: concurrent or prior enrollment in Biol. 534.

Biol. 540. Developmental Biology. (4). 2R; 4L. Developmental processes in animals emphasizing vertebrates. Centers on the cell interactions controlling differentiation and morphogenesis. Students earning graduate credit complete additional assignments chosen in consultation with the instructor. Prerequisite: Biol. 204. Biol. 420 recommended.

Biol. 553. Ecological Risk Assessment. (4). Risk assessment is the process of assigning magnitudes and probabilities to the adverse effects of human activities or natural catastrophes. It involves global climate change, habitat loss, acid rain deposition, reduced biological diversity, and the ecological impacts of pesticides and toxic chemicals. It uses measurements, testing, and mathematical models to quantify the relationship between the initiating event and the effects. Course is an overview of the basic framework for conducting an Ecological Risk Assessment, and a discussion of individual case studies involving several important environmental issues. An introductory class for students interested in assessing the effects of various stressors on environmental health. Prerequisites: Biol. 418 or equivalent and Chem. 531 or equivalent, or instructor's permission.

Biol. 560. Plant Ecology. (4). 2R; 6L. Principles and patterns of plant distribution and of adaptation of plants to particular habitats. Emphasizes the experimental approach to plant ecology. Field trips are an integral part of the laboratory. Prerequisite: Biol. 418 or instructor's consent.

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

Biol. 573. Statistical Applications in Biology. (3). Supplements Stat. 370 by providing experience with practical applications of statistical theory to biological data. Includes computations on data derived from both the primary literature and independently designed research projects. Emphasizes the design of experiments to answer specific hypotheses, the treatment of non-normally distributed data sets and nonhomogeneous experimental test units and the use of packaged computer programs for certain statistical tests. Access to calculators with at least two memory banks is strongly encouraged. Students earning graduate credit complete an additional statistical analysis assignment involving the use of the computing facilities. Prerequisites: Stat. 370.

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. (5). 1R; 6L. 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. Prerequisites: 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 and Chem. 531.

Biol. 610. Topics in Botany. (U-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. Prerequisite: Biol. 204 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). A study of the biological basis of social behavior, stressing the underlying evolutionary and ecological mechanisms. Lectures will 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 will be expected to write a term paper based on the technical literature and to present this in a class seminar. Prerequisite: Biol. 418.

Biol. 640. Topics in Zoology. (3-4). See Biol. 610. Prerequisite: Biol. 204 and instructor’s consent.

Biol. 654. Pathogenic Microbiology. (4). 2R; 4L. An introduction to the important pathogenic microorganisms and their relationships to health and disease in humans. Students earning graduate credit prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: Biol. 330.


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, Chem. 662, and 663.

Biol. 669. Research in Biochemistry. (2). Cross-listed as Chem. 669. S/U grade only. 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. Prerequisites: Biol. 420 or 500, Chem. 662 or 663, and Chem. 664 and instructor’s consent.

Biol. 702. Environmental Science I. (4). 2R; 3L. Cross-listed as Geol. 702 and Chem. 702. 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. Biol. 702 and 703 (or equivalent) are required for all graduate students in the master’s of environmental science program. Prerequisite: acceptance in the master’s of environmental science program or instructor’s consent.

Biol. 703. Environmental Science II. (4). 2R; 3L. Cross-listed as Geol. 703 and Chem. 703. 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. Biol. 702 and 703 (or equivalent) are required for all graduate students in the master’s of environmental science program. Prerequisite: acceptance in the master’s of environmental science program or instructor’s consent.

Biol. 704. Environmental Science Colloquium. (1). Cross-listed as Geol. 704 and Chem. 704. Students in the master’s of environmental science program are required to enroll each semester (maximum 4 credit hours). Includes presentations by guest speakers and required readings for class discussion. May also include student involvement in environmentally related community groups and projects. Graded S/U only.

Biol. 706. Environmental Science Internship. (0-4). Cross-listed as Geol. 706 and Chem. 706. Students in the master’s of environmental science program may gain interdisciplinary skills in environmental science by participating in applied and/or basic research internships projects with local business, industry, or government agencies. Internship option is an alternative to thesis research for degree requirements. Enrollment in internship projects requires an approved proposal. Completion of an internship for gradation requires a formal oral presentation of the internship activity and a written report. Prerequisites: Biol. 702 and 703 or equivalent.

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. 719. Neurobiology. (3). Basic course in contemporary neurobiology emphasizing learning and memory. Exploration of the current research literature covering all levels of organization from complex behavior to brain information processing pathways, neuronal cell biology, and molecular biology. Each student will choose a topic, complete a written report, and give an oral presentation to the class. Graduate students will do more reading in the primary neurobiology literature. Prerequisites: Biol. 420 and 534 or equivalents and instructor’s permission.

Biol. 737. Aquatic Toxicology. (4). 2R; 2L. The qualitative and quantitative study of the fate and effects of toxic agents in the aquatic environment. Class examines the concentrations or quantities of chemicals that occur in the aquatic environment, and includes a detailed study of the transport, distribution, transformation, and ultimate fate of various environmentally important chemicals. Class is for undergraduate or graduate students interested in advanced training in toxicology. Prerequisite: Biol. 525 or equivalent and Chem. 531 or equivalent, or instructor’s permission.


Biol. 760. Experimental Molecular Biology. (4). 2R; 6L. Introduces upper-level undergraduate and graduate students to molecular biology techniques. The methodology primarily involves the manipulation of DNA and the expression of genetic material in prokaryotic and eukaryotic systems. Prerequisites: 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 will write brief summaries of recent research papers related to the current week’s lecture topics. Each student will make an oral presentation of a research paper in journal club format. Students earning graduate credit will write a term paper describing in detail a hormone not described in class and its mechanism of action. Prerequisites: Biol 420 and Chem. 662 or their equivalents, plus either Biol. 534 or 526 or their equivalents, and instructor’s permission.

Biol. 771. Evolutionary Ecology. (4). 3R; 2L. Presents a synthesis of basic principles in population genetics and ecology as a framework for the study of topics in evolutionary ecology. Emphasizes (1) the maintenance and structure of population level genetic variation; (2) mating structure and the evolutionary advantages of sex; (3) individual, kin, group selection; (4) population demographic structure; (5) population regulation and dispersal; (6) life history strategies in heterogeneous environments; and (7) demographic and genetic covariance. Teaches basic techniques in population ecology on several short field trips throughout the semester. Prerequisite: Biol. 418, 419, or instructor’s consent.

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

Biol. 790. Advanced Immunology. (3). Contemporary problems in immunologic research. Includes lectures, assigned readings and reports. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with instructor. Prerequisites: Biol. 590 and instructor’s consent.

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


Courses for Graduate Students Only

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

Biol. 891. Thesis. (10) S/U grade only. Students must be enrolled in this course during the semester in which the thesis is defended.

Chemistry (Chem.)
Graduate Faculty


Associate Professor: Francis D’Souza

Assistant Professors: David Eichhorn, Michael J. Van Stypdonk

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

Admission Requirements

To enroll in the graduate program in chemistry, students must follow the admission procedures required by the Graduate School. The chemistry department requires a baccalaureate degree in chemistry, a grade point average of at least 3.000/4.000 (both overall and in chemistry), two letters of recommendation from individuals familiar with the applicant's academic background, and a one-page typed statement of goals and research interests. International students must have a minimum TOEFL score of 570 (230 on computer). For the PhD program, the Department of Chemistry requires submission of test scores from the general GRE exam and strongly recommends test scores from the chemistry subject GRE as well. Students deficient in any of the requirements may be admitted conditionally provided they follow the specified procedures required to remove any deficiencies.

Master of Science Requirements

The MS degree in chemistry requires the completion of 30 credit hours, including the presentation of a thesis. 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 at least one 700-level course from four of the following six areas: analytical chemistry, inorganic chemistry, organic chemistry, physical chemistry, biochemistry, and spatial chemistry. Students must successfully complete Chem. 790 once, and full-time students must register each semester in Chem. 701. Additional courses which may be outside the major field, are selected by students in consultation with their advisor and the department's advising committee.

Examinations: Master's students must pass four qualifying examinations in the areas of analytical, inorganic, organic, physical and biochemistry, which are the same as proficiency examinations. Three must be passed the first year (three attempts permitted) and the fourth before completion of the degree.

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

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

Doctor of Philosophy Requirements

All PhD students are required to take 24 course hours, 12 of which must be in the area of major interest and 9 of the remaining 12 must be from two of the other five areas. The courses must be numbered 710 or higher. Students are required to begin cumulative examinations at the beginning of their second year. Students must pass six cumulative examinations out of 16 attempts to remain in the program. After completion of the cumulative examinations, students are expected to develop and orally defend an original research proposal. Two enrollments in departmental seminar and continuous enrollment in departmental colloquia are required. The final requirement for the degree is the defense of a thesis based on original research. Well-prepared entering students should be able to complete the requirements within four years.

Examinations. PhD students must pass four qualifying examinations in the areas of analytical, inorganic, organic, physical and biochemistry, which are the same as proficiency examinations, during the first year (three attempts permitted).

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 thesis committee be awarded the MS degree.

Courses for Graduate/Undergraduate Credit

Chem. 505. Chemical Literature. (1). A survey of chemical publications and the publication process. Given the student the ability to conduct a proper search of the literature for chemical information. Also covers aspects of technical writing. Prerequisite: Chem. 531.

Chem. 514. Inorganic Chemistry. (0) General education further study course. Basic inorganic chemistry emphasizing molecular symmetry and structure, fundamental bonding concepts, ionic interactions, periodicity of the elements, systems of the chemistry of the elements, acid-base chemistry and non-aqueous solvents, classical coordination chemistry and introductory bioinorganic chemistry. Prerequisite: Chem. 112Q with a grade of C or better.

Chem. 523. Analytical Chemistry. (0) 2R; 4L. Lab fee. General education further study course. Emphasis on evaluation of data, theory and application of gravimetric analysis and precipitation, neutralization and oxidation-reduction volumetric analysis. Prerequisite: Chem. 112Q with a grade of C or better.

Chem. 524. Instrumental Methods of Chemical Analysis. (0) 2R; 4L. Lab fee. Introduction to instrumental analytical chemistry and optical methods of analysis and separation of complex mixtures, both inorganic and organic. Also discusses basic computer programming and its applications to analytical chemistry. Prerequisite: Chem. 523.

Chem. 531. Organic Chemistry. (3) 3R; 6L. Lab fee. General education further study course. Introduction to the study of carbon compounds emphasizing reaction mechanisms, stereochemistry, and spectrographic analysis. Prerequisite: Chem. 112Q with a grade of C or better.

Chem. 552. Organic Chemistry. (3) 3R; 6L. Lab fee. A continuation of Chem. 531 emphasizing the structure and reactions of principal functional groups and compounds of biological interest. Prerequisite: Chem. 531.

Chem. 533. Elementary Organic Chemistry. (3) General education further study course. Basic organic chemistry emphasizing topics of importance to health professions and education majors. Special emphasis to carbohydrates, proteins, drugs, pesticides and energy production. Students should enroll in Chem. 534 simultaneously. Credit is not allowed for both Chem. 553-554 and 531. This course does not meet the needs of chemistry majors or premed students. Prerequisite: Chem. 112Q or equivalent.

Chem. 534. Elementary Organic Chemistry Laboratory. (2) Lab fee. A basic laboratory course to provide pertinent experiences in the laboratory to familiarize the student with the methods of organic chemistry. Prerequisite or corequisite: Chem. 533.

Chem. 545. Physical Chemistry. (3) General education further study course. Thermodynamics. Studies gases, first law, transport phenomena, quantum mechanics, spectroscopy and statistical thermodynamics. Prerequisite: one year of college physics and Math. 344 or its equivalent and one semester of college physics.

Chem. 546. Physical Chemistry. (3) Kinetic theory, kinetics, transport phenomena, quantum mechanics, spectroscopy and statistical thermodynamics. Prerequisite: one year of college physics and Math. 344 or its equivalent.

Chem. 547. Physical Chemistry Laboratory. (2) Lab fee. Physical chemistry experiments that illustrate principles learned in Chem. 545 and 546. Prerequisite: Chem. 545 or 546.
Chem. 462. Numerical Methods. (2). Application of numerical methods to problems in chemistry and physics. Roots of equations; curve fitting; interpolation, extrapolation, and smoothing of experimental data; numerical differentiation and integration; and computer programming. Prerequisite: instructor's consent.

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

Chem. 605. Medicinal Chemistry. (3). For students interested in chemistry related to the design, development and mode of action of drugs. The primary purpose of the course is to describe those organic substances that are used as medicinal agents and to explain the mode of action and chemical reactions of drugs in the body; to illustrate the importance and relevance of chemical reactions as a basis of pharmacological activity, drug toxicity, allergic reactions, carcinogenicity, etc.; and to bring about a better understanding of drugs. Includes transport, basic receptor theory, metabolic transformation of drugs, discussion of physical and chemical properties in relation to biological activity, drug design, structure-activity relationships and discussion of a select number of organic medicinal agents. Prerequisites: Chem. 532 or 533 or equivalent; a semester of biochemistry (Chem. 561 or 662) and a year of biology are strongly recommended.

Chem. 613. Inorganic Chemistry Laboratory. (3). 6L. Lab fee. Experimental methods of inorganic chemistry. Prerequisite: Chem. 514 or concurrent enrollment.

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, mechanism of inorganic reactions and solid state chemistry. Prerequisite: Chem. 514 and 346.

Chem. 641. Advanced Physical Chemistry. (3). Introduction to quantum chemistry, atomic and molecular spectra, statistical thermodynamics and reaction rate theory. Prerequisite: Chem. 546.

Chem. 642. Chemical Physics. (3). Topics in areas of overlapping interest for students of chemistry and physics, such as thermodynamics, kinetics, quantum mechanics, solids and various types of spectroscopy. A team of chemists and physicists discusses standard experimental and theoretical techniques used in research in chemical physics. Prerequisite: Chem. 641 or instructor's consent.

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

Chem. 662. Biochemistry of Cell Constituents, Catalysis, Oxidation, Photosynthesis. (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. 532 and 533 or equivalents.

Chem. 663. Biochemistry of Cell Metabolism, Biosynthesis, Structure, Function and Regulation of Proteins and Nucleic Acids. (3). Study of metabolism and control of carbohydrates, lipids, phospholipids, 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.

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

Chem. 666. Special Topics in Biochemistry. (1). (Offered spring semester in odd-numbered years.) Discusses a small number of current problems in biochemistry in depth. Requires reading of published research in the field. Prerequisites: Biol. 204 and Chem. 662 and 663.

Chem. 669. Research in Biochemistry. (2). Cross-listed as Biol. 669. S/U grade only. Students in the biochemistry field major participate in a biochemistry research project under the direction of a faculty member. Requires a written report summarizing the results. May be repeated once for credit. Prerequisites: Biol. 500 and Chem. 662 or 663 and 664.

Chem. 690. Independent Study and Research. (1-3). Studies performed must be directed by a faculty member in the Department of Chemistry. Repeatable for credit. A maximum of 3 credit hours may be counted toward graduation. Prerequisite: departmental consent.

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

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

Chem. 702. Environmental Science I. (4) (GR; SL). Cross-listed as Biol. 702 and Geol. 702. Advanced theoretical and applied principles of the interdisciplinary study of environmental science. Includes chemical cycling, atmospheric chemistry, aquatic chemistry, and phase interactions. Prerequisite: acceptance in the master's of environmental science program or instructor's consent.

Chem. 703. Environmental Science II. (4) (GR; SL). Cross-listed as Biol. 703 and Geol. 703. 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 and hazardous waste chemistry. Prerequisite: acceptance in the master's of environmental science program or instructor's consent.

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


Chem. 706. Environmental Science Internship. (0-6). Cross-listed as Biol. 706 and Geol. 706. Students in the master's of environmental science program may gain interdisciplinary skills in environmental science by participating in applied and/or basic research internship projects with local business, industry, or government agencies. Internship option is an alternative to the thesis research for degree requirements. Enrollment in internship projects requires an approved proposal. Completion of an internship for graduation requires a formal oral presentation of the internship activity and a written report. Prerequisite: completion of Environmental Science I and II.

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

Chem. 731. Physical Methods in Inorganic Chemistry. (3). An introduction to electronic and vibrational spectroscopy, magnetic susceptibility, EPR, NMR, Mossbauer spectroscopy and X-ray crystallography as applied to inorganic systems. Emphasis on interpretation of results for understanding the electronic and molecular structure of compounds. Prerequisite: Chem. 715 or equivalent.

Chem. 734. Advanced Physical Organic Chemistry. (3). Discussion of advanced topics in stereochemistry and conformational analysis and organic reaction mechanisms. Prerequisite: Chem. 732.

Chem. 736. Advanced Organic Synthesis. (3). Discussion of modern synthetic methods in organic chemistry including carbon-carbon forming reactions, oxidation and reduction reactions, protective groups and organometallic chemistry. Prerequisite: Chem. 532.


Chem. 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, IR and RAMAN spectra; thermochemical properties, heat of formation, bond and reaction energies, isomerization energy barriers; reaction pathways; molecular orbitals, atomic charges, dipole and multipole moments, ionization potentials, bond orders; orbital energies and photoelectron spectroscopy; excited state properties, singlet and triplet surfaces. Prerequisite: Chem. 546 or equivalent. Math. 344 is necessary.

Chem. 751. Chain Growth Polymerization. (3). Kinetics, mechanism and thermodynamic aspects of polymerization processes which proceed by a chain growth mechanism. Mechanisms, free radical, anionic, cationic and Ziegler Natta and group transfer polymerization. Prerequisite: Chem. 531 and 545.

Chem. 752. Step Growth Polymerization. (3). Polymerization process which proceeds by a step growth or ring-opening mechanism. Preparation of thermoplastics, including relationships between molecular weight and reaction conditions. Preparation of thermosets including relationships between structure, conversion and gelation. Discusses individual systems such as nylon, epoxy resin and polymides in some detail. Prerequisites: Chem. 531 and 545.

Courses for Graduate Students Only

Chem. 800. 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. Math. 344 or equivalent.

Chem. 814. Organometallic Chemistry. (3). A study of the synthesis, structure, bonding, reactivity and industrial applications of organotransition and nontransition metal compounds. Prerequisite: Chem. 615 or equivalent.

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

Chem. 821. Equilibrium and Statistics in Analytical Chemistry. (3). Covers homogeneous and heterogeneous solution equilibrium calculations and statistical methods used in research and data analysis. Prerequisite: Chem. 524 or equivalent.

Chem. 822. Analytical Separations. (3). The theory and practice of analytical separation methods including gas and liquid chromatography, ion exchange and electrophoresis. Prerequisite: Chem. 524 or equivalent.

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

Chem. 832. Modern Synthetic Methods. (3). Discussion of retrosynthetic analysis, applications, asymmetric syntheses and stereo-chemistry. Prerequisite: Chem. 722.

Chem. 833. Natural Products Chemistry. (3). Discussion of the structure, chemistry and biosynthesis of the alkaloids, steroids, terpenoids, carbohydrates and aromatic and aliphatic natural products. Prerequisite: Chem. 722.

Chem. 834. Heterocyclic Chemistry. (3). An account of the physical and chemical properties of the major classes of heterocyclic compounds. Prerequisite: Chem. 722.

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

Chem. 841. Advanced Quantum Chemistry. (3). Considers advanced applications of quantum mechanics to atomic and molecular problems. Includes determinant wave-functions, angular momentum coupling, time-dependent perturbation theory, relativity considerations, tensor operators and molecular orbital calculations. Prerequisites: Chem. 705 and 741 or equivalents.

Chem. 842. Chemical Kinetics. (3). A description of reaction systems, including the mathematical and experimental characteristics of simple and complex kinetic systems. Discusses the theories of chemical kinetics, as well as the kinetics of homogeneous reactions in the gas phase, the kinetic aspects of solution reactions, heterogeneous reactions and selected topics of current interest. Prerequisite: Chem. 546 or equivalent.

Chem. 843. Statistical Thermodynamics. (3). Develops Boltzmann, Fermi-Dirac and Bose-Einstein statistical mechanics with applications to gaseous-state and solid-state chemical problems. Emphasizes the relationship of statistical mechanics and thermodynamics. Considers applications of statistical thermodynamics to polymers. Prerequisites: Chem. 546, 845 or equivalents.

Chem. 845. Chemical Thermodynamics. (3). A presentation of the basic three laws of thermodynamics in a classical framework to increase understanding of real physical systems. Emphasizes theory and its application to chemical systems. Prerequisites: Chem. 545, 546 and Math. 344 or equivalents.

Chem. 846. Molecular Spectroscopy. (3). The theoretical basis for spectroscopy and spectrometric determinations of molecular structure. Includes polyelectronic atoms, time-dependent perturbation theory, vibration and rotation of
diatomic molecules, vibration and rotation of polyatomic molecules, electronic spectra and magnetic resonance spectroscopy. Prerequisite: Chem. 741 or its equivalent and Chem. 705 or its equivalent.

Chem. 847. Chemistry of Condensed Matter. (3). Includes thermodynamics, statistical mechanics, quantum chemistry and structural determinations of condensed phase matters. Emphasizes metals, alloys, intermetallic compounds, composite materials and advanced materials. Prerequisites: Chem. 741 and 745 or equivalents.

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

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

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

Chem. 862. Biotechnology: Principles and Applications. (3). Presents a broad informed view of contemporary biotechnology including its role in the production of premium products from biological raw materials. Biotechnology involvement for the production of products include energy, food, drink, flavors, chemicals, biopolymers, medicines and agricultural materials. Prerequisites: Biol. 203 and 204 and Chem. 662 or 663 or equivalent.

Chem. 863. Analytical Biochemistry. (3). A review of modern analytical methods used in biochemistry and molecular biology including absorbance and fluorescence spectroscopy, chromatography (affinity, gel-filtration, HPLC, ion-exchange, ion-pair), gel electrophoresis, radioactive tracer methods; cloning, sequencing and recombinant DNA procedures. Prerequisites: Biol. 203 and 204 and Chem. 662 or 663 or equivalent.


Chem. 890. Research in Chemistry. (2-12). SU course only. Research for the student planning to receive an MS. Research is directed by a faculty member. Repeatable for credit.

Chem. 990. Research in Chemistry. (2-16). SU course only. Research for the student planning to receive the Ph.D. Research is directed by a faculty member. Repeatable for credit.

Communication, Elliott School of (Comm.)

Graduate Faculty

Professors: Shirley Staples Carter (director, Elliott School), Philip Gaunt (director, Interdisciplinary Communication Research Institute), Katherine Hawkins (graduate coordinator), Vernon Keel (associate professor), Les Anderson, Richard Armstrong (associate director, Elliott School), Patricia Dooley, Susan S. Fuxman, Sharon H. Iorio (associate dean, Fairmount College of Liberal Arts and Sciences), Keith Williamson

Assistant Professors: Cliff Bieberly, Dan Close, Kevin Hager, Jeff Jarman

Master of Arts in Communication, Areas of Emphasis and Graduate Certificate

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. The degree includes two areas of interest: Communication and Theatre/Drama. Also available is a Graduate (Post-Baccalaureate) Certificate awarded for completing a group of related, upper-level skills courses in applied communication.

Admission Requirements

In addition to the general Graduate School admission requirements, applicants for full standing status must have a 3.00 GPA over their last 60 hours of course work, must submit results of the Graduate Record Exam, and must write a statement of purpose for pursuing the Master of Arts in Communication. International students must score at least 600 on the TOEFL and, if applying for a Graduate Teaching Assistantship, must score at least 55 on the TSE.

Degree Requirements

Program Core (Required) Courses.

MAC students emphasizing the Communication area must complete the following courses:

Comm. 801, Introduction to Communication Research..........................3
Comm. 802, Historical and Qualitative Methodologies in Communication Research................3
Comm. 803, Empirical/Quantitative Methodologies in Communication Research........3

Comm. 812, Contemporary Theories of Communication..........................3
Comm. 865, Organizational Communication..........................3

MAC students emphasizing the Theatre/Drama area must complete the following courses:

Comm. 801, Introduction to Communication Research..........................3
Comm. 802, Historical and Qualitative Methodologies in Communication Research................3
Comm. 803, Empirical/Quantitative Methodologies in Communication Research........3

Comm. 865, Organizational Communication..........................3

* Students who have taken Thea. 623Q and 624Q as undergraduates will substitute appropriate graduate-level courses.

Examinations

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

Graduate Certificate in Applied Communication

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

Communication Core Courses

Comm. 535, Communication Analysis and Criticism. (3). General education further study course. Introduces the methods used for the analysis and critique of various lin-
guistic, pictorial, and aural elements of communication for the purpose of becoming 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. 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 the first amendment rights, libel, privacy, copyright, advertising, obscenity, pornography, and corporate communication concerns.

>Comm. 631. Historical and Theoretical Issues in Communication. (3). General education further study course. 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. 130Q or instructor's consent.

Courses for Graduate/Undergraduate Credit

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

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

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


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. Prerequisite: Comm. 324 and Comm. 301 with a grade of 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 such topics as 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. 334 or instructor's consent.

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

Comm. 570. Magazine Production. (3). Magazine production, including the choosing of subjects, approaches and illustrations; the shooting and editing of photographic stories; layout; the handling of production and management concerns. Prerequisite: Comm. 301 and 510 or departmental consent.

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

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

Comm. 604. Field Video Production. (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. 304 or instructor's consent.

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

Comm. 611. Media Management. (3). A study of the business and management operations of the mass media to give journalism students an understanding of the interrelationships in mass media enterprises. Prerequisite: junior standing or departmental consent.

Comm. 612. School Publications Advising. (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: Practicum in Broadcast Journalism. (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 situation analysis, identify objectives, develop strategies and tactics, and write a plans book as well as produce advertising and public relations campaigns materials. Prerequisite: Comm. 324 or instructor's consent.

>Comm. 632. American Public Address. (3). General education further study course. A detailed study of notable American speakers and their public utterances. Their impact on the political, economic and social history of this nation from colonial time to the present is assessed.

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

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. Course includes the application of these elements to formal instruction across disciplines and at various educational levels as well as in most professional training settings.

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

Comm. 661. Directing the Forensics Program. (3). A study of the methods and procedures in coaching and directing the high school and collegiate forensic programs (debate and individual events). The future teacher is made aware of the literature and professional organizations in the field.

Comm. 675. Directed Study. (2-4). 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 academic program. Individu-
eral, critical and observational methodologies in communication research. Emphasizes historical, critical and observational research, particularly those forms of research common to communication studies. Prerequisite: Comm. 801.

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

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

Comm. 820. Investigation and Conference. (2-3). Cross-listed as Thea. 820. Directed research and experimentation for graduate students in some phase of (a) speech communication, (b) electronic media or (c) speech education. Repeatable for credit up to a total of 6 hours.

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


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

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

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

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

Criminal Justice (CJ)
Graduate Faculty
Professors: Paul Cromwell (director, School of Community Affairs), Michael Palmiotto, Quint Thurman (program director and graduate coordinator)
Associate Professors: Azdra Bannister, Ronald G. Iacovetta, Delores Craig-Moreland
Assistant Professors: Alison McNeney Brown (internship coordinator), Lee Parker, Brian Withrow (director, Midwest Criminal Justice Institute)

Master of Arts in Criminal Justice

Admission Requirements
The Master of Arts in Criminal Justice (MACJ) at Wichita State University is housed in the Great Wall School of Urban and Public 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, the following are required for admittance to the MACJ program: 1) a grade point average of at least 3.0 on a scale of 4.0; 2) a handwritten statement of interests/goals; 3) submission of GRE scores; and 4) CJ 597 or equivalent as a prerequisite for admission or as a corequisite taken in the first semester of graduate school.

Degree Requirements
The MACJ degree requires a minimum of 36 hours, including 21 hours taken in courses numbered 800 or above.

Core Curriculum. All degree candidates are required to complete CJ 802, 892, 893, 894, and an approved graduate-level research methods course. CJ 802 must be completed in the first semester of study with a grade of B or better. MACJ candidates during
their final semester may choose to complete an applied research paper for 3 hours of credit, complete a thesis for 6 hours of credit, or pass an oral or written comprehensive examination.

It is recommended that MACJ students complete the core requirements prior to enrollment in elective classes. Each core requirement course will be offered once each academic year. Elective courses will be selected in consultation with the student's graduate advisor. Note the restrictions on the following:

- A maximum of 6 hours total in CJ 782 and 783.
- The core requirements prior to enrollment in elective courses for Graduate/Undergraduate Credit.

### Courses for Graduate/Undergraduate Credit

**CJ 501. Integrity in Public Service.** Cross-listed as Geron. 502, Eth. S. 501, P. Adm. 591. Exposes the student to basic principles of personal and professional integrity and how those principles apply to their daily life as a member of the community and as an employee of a government or social service agency. Emphasizes a case study method, using cases and examples from a wide range of government and non-profit agency experiences. Students become aware of the moral and ethical issues which may arise in their professional and personal lives; begin to develop critical thinking and analytical skills regarding ethical behavior; become more personally and professionally responsible. Prerequisite: Junior or senior level or instructor's permission.

**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 191Q.

**CJ 581. Workshop.** (1-4). Specialized instruction using variable format in relevant criminal justice subjects. Repeatable for credit up to 6 hours.

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


**CJ 600. Forensic Anthropology.** (3). Cross-listed as Anthr. 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: CJ 191Q.

**CJ 610. Correctional Counseling.** (3). Analysis of the role of a correctional counselor. Emphasis is placed on 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 191Q.

**CJ 621. Environmental Law.** (3). Cross-listed as Eth. S. 621 and P. Adm. 621. An in-depth analysis of emerging federal, state, and local legislation: judicial decisions, and administrative policies in environmental protection. Explores the roles of a variety of governmental agencies and non-governmental organizations as related to prevention and enforcement processes of environmental protection. Includes issues in the development and implementation of environmental policy. Prerequisite: An approved methods class.


**CJ 641. Forensic Psychiatry.** (3). Analysis of the role of psychiatry in the criminal justice process. Introduces the student to concepts and procedures of forensic psychiatry. Prerequisite: CJ 191Q.

**CJ 643. Forensic Science.** (3). An overview of the various sciences used in the forensic investigation of crime, including toxicology, drug identification, questionable documents, firearm and toolmark identification, trace evidence analysis, fingerprint identification, forensic pathology, forensic serology, forensic odontology, and forensic anthropology. Prerequisite: CJ 191Q.

**CJ 651. Dispute Resolution.** (3). Cross-listed as Geron. 651, Eth. S. 651, P. Adm. 651. Examines a range of topics including mediation, typologies, communications, mediation, arbitration, and other dispute resolution techniques. Includes criminal and victim mediation, and both inter-group and inter-organization relations and dispute resolution techniques, and analysis of case studies.

**CJ 652. Juvenile Justice and Social Policy.** (3). General education further study course. Analyzes decision-making processes in juvenile justice and of 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 191Q.

**CJ 692. Community Policing.** (3). Reviews the various models and strategies of community policing. Examines key concepts, such as problem oriented policing, crime prevention, community relations, and empowering the community, and the integration of these concepts into community policing. Prerequisite: CJ 191Q.

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

**CJ 781. Cooperative Education.** (1-4). Provides a paid 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. Offered Cr/NCr only.

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

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

**CJ 797. Policy Analysis and Program Evaluation.** (3). Cross-listed as P. Adm. 845. 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.

### Courses for Graduate Students Only

**CJ 802. Quantitative Methods for Public Sector Professionals.** (3). Cross-listed as Geron. 804 and P. Adm. 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 evi-
dence to real public sector policy questions. Assumes little or no background in statistics and software applications. Prerequisite: either CJ 702, Geron. 702, or P. Adm. 702.

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

CJ 821. Hostage Negotiation. (3). A comprehensive examination of theory, research, and practice in hostage negotiation from the perspectives of both law enforcement and the behavioral sciences. Exposes students to the range and complexity of both domestic and international hostage negotiations with the focus not only on theoretical concerns, but also on policy debates and the substantive ramifications of current events. Explores the need for more rigorous application of behavioral science to the practice of crisis negotiation.

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

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

CJ 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 881. Internship. (3-4). Supervised field placement in a criminal justice agency. For 3 credits, the student works 192 hours and completes an academic project under the direction of a faculty member. Prerequisite: 15 hours of graduate-level criminal justice courses and consent of criminal justice agency and internship coordinator.

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 administration of 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 892. Criminal Justice and Community Action. (3). An overview of the literature on community organizations and its assessment. Discusses consequences of varying degrees of community disorganization, particularly in terms of the various theories about crime and community organization. Reviews crime prevention strategies which focus on community organization. Students gain knowledge and practical skills related to community organization as it relates to crime. Students perform community organization assessments and relate the outcome to related crime rates.

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

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

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

CJ 897. Advanced Research Methods. (3). Cross-listed as Geron. 897 and P. Adm. 897. Advanced research course; studies the selection and formulation of research problems, research design, hypothesis generation, scale construction, sampling procedures and data analysis and interpretation. Prerequisite: either CJ 597, Geron. 597, Eth. S. 897, P. Adm. 597, or equivalent.

CJ 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 done under the direction of a faculty member. Prerequisite: Graduate-level research methods class.

CJ 899. Thesis. (3-6). Prerequisite: consent of graduate advisor.

Ethnic Studies (Eth. S.)

Graduate Faculty

Associate Professor: Daisy Kabagarama
Assistant Professor: Anna M. Chandler
Instructors: Martha Sanchez, Jerry Shaw

Although a graduate program is not currently available in minority studies, the Department of Ethnic Studies participates extensively with other departments in the multidisciplinary Master of Arts in Communications program. See requirements for that program in the Fairmont School of Liberal Arts and Sciences, Elliott School of Communications section of the Graduate Bulletin.

Courses for Graduate/Undergraduate Credit

Eth. S. 501. Integrity in Public Service. (3). Cross-listed as CJ 501, Geron. 502, and P. Adm. 501. Explores the student to basic principles of personal and professional integrity and how these principles apply to their daily life as a member of the community and as an employee of a government or social service agency. Employs a case study method, using cases and examples from a wide range of government and non-profit agency experiences. Students become aware of the moral and ethical issues which may arise in their professional and personal lives; begin to develop critical thinking and analytical skills regarding ethical behavior; and become more personally and professionally responsible. Prerequisite: junior- or senior-level or instructor’s permission.

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


Eth. S. 540. Advanced Cross-Cultural Communications. (3). Special topics in human relations. Prerequisite: Eth. S. 210Q.


Eth. S. 590. Working with Minority Families. (3). Examines the unique dynamics, forms, and interaction patterns of
U.S. minority families within the larger cultural framework. Highlights strengths exhibited by these families and the challenges they face. Discusses intervention strategies to address such challenges. Focuses primarily on four minority groups: African Americans, Asian Americans, Hispanic Americans and Native Americans. Also discusses families from other cultures, domestic and international. Through research and service projects, students have a hands-on experience in working with minority families.

Eth. S. 551. Workshop. (3). Specialized instruction using variable format in relevant ethnic studies subjects. Repeatable for credit up to 6 hours.

Eth. S. 580. Individual Projects. (3). Student conducts independent research related to a specific minority group. Prerequisite: 50 hours of Wichita State credit or program consent. Repeatable for a total of 6 hours.


Eth. S. 621. Environmental Law. (3). Cross-listed as CJ 621 and P. Adm. 621. An in-depth analysis of emerging federal, state, and local legislation; judicial decisions and administrative policies in environmental protection. Explores the roles of a variety of governmental agencies and nongovernmental organizations as related to prevention and enforcement processes of environmental protection. Includes issues in the development and implementation of environmental policy. Prerequisite: an approved methods class.


Eth. S. 651. Dispute Resolution. (3). Cross-listed as CJ 651, Geron. 651, and P. Adm. 651. 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 inter-organization relations and dispute resolution techniques, and analysis of case studies.

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

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

Eth. S. 750. Workshop. (1-4). Focuses on the nature and scope of ethnic studies. Emphasizes the unique experiences of ethnic groups in this country.

Gerontology (Geron.)
Graduate Faculty
Professors: Raymond H. Hull, Communicative Disorders and Sciences; Samuel J. Yeager, HWS Public Administration
Associate Professors: Linda Bakken, Administration, Counseling, Educational and School Psychology; Delores Craig-Mooreland, CMA Criminal Justice; William C. Hays, CMA Gerontology (graduate coordinator, gerontology); Alicia A. Huckstadt, Nursing; Daisy Kabagarama, CMA Ethnic Studies; Nancy McCarthy Snyder, HWS Public Administration; James H. Swan, Public Health Science; Marilyn L. Turner, Psychology
Assistant Professors: Elwin Barrett, SSW Social Work; Anna M. Chandler, CMA Ethnic Studies; Ruth B. Pickard, Public Health Science

Instructor: Mary Corrigan, CMA Gerontology

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

Master of Arts in Gerontology

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

The program is designed for students with minimal previous training in gerontology, among them professionals in such areas as communicative disorders, recreation, physical or occupational therapy, allied health, business, ministry, counseling, social work, adult education, mental health, and any field where older people make up a significant and increasing proportion of the client population and where professionals with gerontological training are presently scarce.

Since employment in the area of aging often demands a knowledge of gerontology combined with knowledge and skills found in a particular discipline, students may use elective courses to pursue an emphasis in such areas as administration, health, long-term care, programs and services, research, and policy.

Admission Requirements

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

Degree Requirements

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

Core Curriculum

Hrs.
Geron. 518Q, Biology of Aging or Nurs. 789, Chronic Illness and Aging................3
Geron. 663, Economic Insecurity ..................3
Geron. 702, Research Methods ..................3
Geron. 715, Adult Development and Aging ........3
Geron. 798, Multidisciplinary Perspectives on Aging ..................6
Geron. 802, Aging Programs and Policies ..................3
Geron. 810, Advanced Gerontology Internship* ..................3
Geron. 850, Selected Topics in Gerontology ..................3
E electives** ..........................................................12

Terminal Research Project** (one of the following) ..................3
Geron. 895, Applied Research Paper or Geron. 899, Thesis

Total ..........................................................39

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

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

Relevant courses in other departments or programs which students may consider include P. Adm. 702, 710, 725, 745, 775, 802, 845, 865; Nurs. 789; Accnt. 800; Mkt. 800; HS 804, 812, 818, 822, 826, 834, 858; and Psy. 813. With the consent of their graduate program advisor and program approval, students may take other courses not listed as elective hours.

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

Graduate Minor in Gerontology

The minor is a 12-15-hour concentration in gerontology taken as part of a graduate degree program in another department. Students who wish to pursue the gerontology emphasis must fulfill the requirements in both departments.

Courses for Graduate/Undergraduate Credit

Geron. 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. Prerequisite: 12 hours of gerontology credit and instructor's consent.

Geron. 502. Integrity in Public Service. (3). Cross-listed as CJ 501, Eth. S. 501, and P. Adm. 501. Explores the student to basic principles of personal and professional integrity and how these principles apply to their daily life as a member of the community and as an employee of a government or social service agency. Employs a case study method, using cases and examples from a wide range of government and non-profit agency experiences. Students become aware of the moral and ethical issues which may arise in their professional and personal lives; begin to develop critical thinking and analytical skills regarding ethical behavior; and become more personally and professionally responsible. Prerequisite: junior- or senior-level or instructor's permission.

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

Geron. 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. 111Q.


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

Geron. 518Q. Biology of Aging. (3). Cross-listed as Biol. 518Q. 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.

Geron. 520. Family and Aging. (3). Cross-listed as Soc. 520. An analysis of the families and family systems of older people. Special emphasis is placed upon demographic and historical changes, widowhood, caregiving, and intergenerational relationships as these relate to the family life of older people. Prerequisite: Geron. 100, Soc. 111Q, or junior standing.

Geron. 537. The Social Consequences of Disability. (3). Cross-listed as Soc. 537. An eclectic survey of the social aspects of disability, showing the impact of social values, institutions and policies upon adults with disabilities. Appropriate for both students of sociology and the service professions. Prerequisite: Soc. 111Q.

Geron. 550. Selected Topics in Gerontology. (0-6). Study in a specialized area of gerontology with the focus upon pre-professional programs and current issues in the field of aging. Emphasizes knowledge and skills in applied areas of gerontology as they relate to an emerging area of research and application. Repeatable up to 6 hours. Prerequisite: instructor's consent.

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

Geron. 580. The Aging Network. (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 gerontology credit or instructor's consent.


Geron. 631. Dispute Resolution. (3). Cross-listed as CJ 631, Eth. S. 631, and P. Adm. 631. 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 inter-organization relations and dispute resolution techniques, and analysis of case studies.

Geron. 663. Economic Insecurity. (3). Cross-listed as Econ. 663. Personal economic insecurity, such as unemployment, old age, health care, disablement and erratic economic fluctuations. Includes costs and benefits of government action to aid in meeting such insecurities. Prerequisites: Econ. 200Q or instructor's consent, and junior standing.

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

Geron. 702. Research Methods. (3). Cross-listed as CJ 702, Eth. S. 702, P. Adm. 702. Acquaints students with applied public policy research methods. Emphasizes locating, collecting, appraising, and utilizing both primary and second ary sources of data of the type used in policy, planning, and administrative research. Students must complete several short research projects.

Geron. 715. Adult Development and Aging. (3). Explores theory and research related to the development of adults and to the aging process. Utilizing an interactive, interdisciplinary perspective, the course examines the process of change, transition, growth, and development across the adult lifespan. Prerequisites: Geron. 798 or 6 hours of gerontology.

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

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

Geron. 781. Cooperative Education. (0-6). 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. Prerequisite: 12 hours of gerontology and instructor's consent.

Geron. 798. Multidisciplinary 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 gerontology. Prerequisite: admission to graduate school.

Courses for Graduate Students Only

Geron. 801. Field Research in Gerontology. (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: Geron. 798, 12 hours of gerontology credit or instructor's consent.

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

Geron. 802 Quantitative Methods for Public Sector Professionals. (3). Cross-listed as CJ 802 and P. Adm. 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. Prerequisite: either CJ 702, Geron. 702, or P. Adm. 702.

Geron. 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: Geron. 798, 12 hours of gerontology or instructor’s consent.

Geron. 810. Advanced Gerontology Internship. (3-6). Integrates academic gerontology and practical experience through supervised placement of students in an agency or organization engaging in planning, administering, or providing direct services to older people. Internship requires 200 contact hours for each 3 hours of credit. An internship paper also is required. Prerequisites: 12 hours of gerontology credit and instructor’s consent prior to registration.

Geron. 850. Selected Topics in Gerontology. (1-6). Advanced study in a specialized area of gerontology focusing upon professional programs and current issues in the field of aging. Emphasizes knowledge and skills in applied areas of gerontology as they relate to an emerging area of research and application. Repeatable up to 6 hours. Prerequisite: instructor’s consent.

Geron. 897. Advanced Research Methods. (3). Cross-listed as CJ 897 and P. Adm. 897. Advanced research course; studies the selection and formulation of research problems, research design, hypothesis generation, scale construction, sampling procedures, and data analysis and interpretation. Prerequisite: either CJ 597, Geron. 597, Eth. S. 597, P. Adm. 597, or equivalent.

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

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

Computer Science (CS)

Graduate Faculty
Professors: Suad Alagic, Shang-Ching Chou (chairperson)
Associate Professors: Rajiv Bagai (graduate coordinator), Prakash Ramanan
Assistant Professors: Thomas Haynes, Nicholas Tran

Master of Science

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

Admission Requirements

All candidates for graduate study must have a bachelor’s degree (in any field) from an accredited institution. In addition, for MS degree status for Nondegree A status, a candidate’s GPA in the last 60 hours of course work should be at least 2.750. (A probationary admission can be granted to candidates with a GPA in the last 60 hours of course work between 2.600 and 2.750.) All international applicants must have a score of at least 550 on the TOEFL exam.

The MS degree and Nondegree A students are expected to have at least a B average in the following background courses:
1. Math 242Q and 243, Calculus I and II.
2. CS 300 and 560, Data Structures and Algorithms I and II
3. CS 320, Discrete Structures in Computer Science
4. CS 440, Computer Organization and Architecture
5. CS 510, Programming Language Concepts
6. CS 540, Operating Systems

However, if the candidate has not taken, or satisfactorily performed in, any or all of the above courses, admission can be granted on the condition that the required courses be satisfactorily completed within one year of admission.

Degree Requirements

The MS degree requires 30-36 credit hours of graduate-level work, as follows:
1. Computer theory (3 credit hours)—CS 720, Theoretical Foundations of Computer Science
2. Advanced courses (12 credit hours)—Four computer science courses numbered 800-889 or CS 898.
3. Electives (9 credit hours)—A coherent block of graduate-level courses from computer science or closely related technical fields, as approved by the candidate’s graduate advisor. All computer science electives must be at the 600-level or above.
4. Thesis/Project/Course Work (6-12 credit hours)—One of the following three options:
   A. Thesis (6 credit hours)—The thesis option is usually exercised by students planning to pursue a PhD degree in computer science. This option requires 6 credit hours of Thesis research (CS 892) in a specialized area of computer science under the supervision of a computer science graduate faculty advisor. This should culminate in the writing of a thesis. The student should pass an oral final examination, which will cover a variety of topics addressed in the foundation, theory, and advanced courses. (36 total hours)
   B. Project (9 credit hours)—The project option is usually exercised by students planning to work in industry. This option requires 3 credit hours of Project (CS 891), one computer science course numbered 800-889 or CS 898, and one computer science course at the 600-level or above. The project will be supervised by a computer science graduate faculty advisor and can be job-related. The student should write a report on the project and pass an oral final examination by an ad hoc faculty committee headed by the project advisor. This examination will pertain to, but is not limited to, the subject matter of the project. (33 total hours)
   C. Course Work (12 credit hours)—This option requires two computer science courses numbered 800-889 or CS 898 and two computer science courses at the 600-level or above. The student should pass a final comprehensive written examination which will cover a variety of topics addressed in the foundation, theory, and advanced courses. (36 total hours)

Courses for Graduate/Undergraduate Credit

CS 501 Numerical Programming Techniques. (3). 2R; 2L. A study of the programming techniques used to solve nonlinear equations, interpolate, integrate and solve systems of linear equations. Discusses the implications of finite precision floating point arithmetic. Also covers techniques for initial and boundary value problems in ordinary differential equations. Selected algorithms are implemented on the computer. Prerequisites: Math. 243 and CS 300 with grades of C or better.

CS 510. Programming Language Concepts. (3). Theoretical concepts in the design and use of programming languages, including scope of declarations, storage allocation, subroutines, modules, formal methods for the description of syntax and semantics. Introduction to the concepts of different styles of languages—imperative languages, functional languages, logic languages, object-oriented languages, etc. Prerequisite: CS 410 with a grade of C or better.

CS 540. Operating Systems. (3). 3R; 1L. Covers the fundamental principles of operating systems: process synchronization, scheduling, resource allocation, deadlocks, memory management, file systems. Studies a specific operating system in depth. Programming assignments consist of modifications and enhancements to the operating system studied. Prerequisite: CS 440 with a grade of C or better.

CS 560. Data Structures and Algorithms II. (3). 3R; 1L. Design and analysis of algorithms. Techniques for design and analysis of algorithms and proof of correctness. Analysis of space and time complexities of various algorithms including several sorting algorithms. Hashing, binary search trees and height balanced trees. Algorithm design techniques including divide and conquer, greedy strategies, and dynamic programming. Elementary graph algorithms. Prerequisites: CS 300, CS 320; and Math 243, and Stat. 460 with a grade of C or better in each.

CS 612. Systems Programming. (3). 2R; 2L. A study of system software including assemblers, disassemblers, macroprocessors, link editors, loaders, language translators and debuggers. Practical experience in building system software through programming laboratory exercises. Prerequisite: CS 300 and 312 with a C or better grade.

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

CS 632. Symbolic Computation with LISP. (3). An in-depth study of LISP as a functional programming language with its application to artificial intelligence, polynomial computation and theorem proving. Complete substantial programming projects in LISP. Prerequisites: Math 243 with a grade of C or better; and CS 300 and CS 320 with a grade of B or better in each; or CS 410 or CS 560 with a grade of C or better; or departmental consent.

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 of structures and pointers. Prerequisite: CS 300 with a grade of C or better or instructor's consent.

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 Web site that incorporates static text and the dynamic capabilities of the Web. Learn how to create an interactive Web site through the use of CGI and Java programming and how to interconnect a Web site to databases and generate images on the fly. Java portion covers a wide range of Java language and the Applet interface and utilities. Prerequisite: CS 300 with a grade of C or better or instructor's consent.

CS 665. Introduction to Database Systems. (3). Fundamental aspects of database systems, including conceptual database design, entity-relationship modeling, and object-oriented modeling; the relational data model and its foundations, relational languages, and SQL (Structured Query Language); logical database design, dependency theory, and normal forms; physical database design, file structures, indices, and decompositon; integrity, security, concurrency control, recovery techniques, and optimization of relational queries. Prerequisite: CS 300 and 320 with a grade of C or better.

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

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

CS 690. Information Systems Engineering. (3). Study of information systems design techniques, issues of systems evolution, project management, engineering design, various views of information systems and software and formal design approaches. Covers structured analysis and design approach, object-oriented approach, software design, database design, rule modeling, user interface design, performance evaluation issues relative to software design, systems evolution aspects from a software maintenance perspective, project management techniques and information systems engineering. Prerequisite: CS 300 with a grade of C or better.

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

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 320 or equivalent with a grade of C or better or graduate standing.

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

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

CS 771. Artificial Intelligence. (3). Heuristic versus algorithmic methods, principles of heuristic approach and cognitive processes. Also covers objectives and methods of artificial intelligence research and simulation of cognitive behavior. Includes a survey of appropriate examples from various areas of artificial intelligence research. Prerequisite: CS 300.

CS 776. Expert Systems. (3). Planning, construction and application of expert systems. Discusses major aspects of expert systems; illustrates with various examples, including data representation, knowledge bases, inference engines, user interfaces, explanatory facilities, metarules and dealing with uncertainty. Introduces basics of a production system language. Prerequisite: CS 410 with a grade of C or better or instructor's consent.

CS 781. Cooperative Education in Computer Science. (1-3). Practical experience in a professional environment to complement and enhance the student's academic program. For master's level CS students. Repeatable, but may not be used to satisfy degree requirements. Offered Cr/NoCr only. Prerequisites: departmental consent and graduate GPA of 3.0 or above.

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

Courses for Graduate Students Only


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

CS 821. Analysis of Algorithms. (3). Deals with advanced topics in the design and analysis of algorithms, including sorting networks, algorithms for parallel computers, Strassen's algorithm for matrix multiplication, polynomial multiplication and the FFT, number theoretic algorithms (gcd computation), and hard problems and intractability. Prerequisites: CS 560 with a grade of B or better; 720 is recommended.

CS 822. Parallel Algorithms. (3). Deals with the design and analysis of parallel algorithms for various combinatorial
CS 841. Advanced Computer Architecture. (3). A study of advanced topics in computer architecture like parallel processing, stack architectures, computer performance evaluation and reliability of computing systems. Studies architectures of typical systems belonging to the IBM, CDC and Burroughs families of computers. Prerequisite: CS 540.


CS 843. Distributed Computing Systems. (3). A study of hardware and software features of on-line multiple computer systems emphasizing network design and telecommunications. Includes distributed data bases, interprocessor communication and centralized versus distributed. Also includes study of the use of microcomputers in representative configurations. Prerequisite: CS 540.

CS 862. Advanced Database Systems. (3). Covers recent developments and advances in database technology. 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 560.

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

CS 872. Machine Learning and Discovery. (3). An advanced study of computer programs that learn, improve performance and make discoveries. Includes objectives, methods and research paradigms for such systems, a survey of existing methods and applications, including the most recent developments; theoretical principles for learning and discovery systems; computational theories of learning processes and cognitive models of human learning; concept and theory formation, and use of analogy in learning. Includes participation in a group project such as developing a computer learning system. Prerequisites: CS 771 or 776.

CS 873. Computer Vision. (3). An introduction to computer vision, a rapidly growing subfield of artificial intelligence. The basic topic is the understanding or description of images by a computer or robot. Covers two-dimensional Fourier analysis, scene matching and understanding, texture, motion, shape recognition, relational image structure and human perception. Prerequisite: CS 771 or instructor's consent.

CS 874. Simulation and Modeling. (3). An up-to-date treatment of important aspects of simulation modeling, including data collection, input and output data analysis, modeling principles, simulation with general-purpose programming languages and special-purpose simulation languages. Emphasizes theory, design, and implementation of modeling languages. Prerequisites: CS 300 and Stat. 460 with a grade of C or better in each; or instructor's consent.

CS 881. Software Specification and Design. (3). A detailed presentation of the techniques and tools available for the specification of software requirements and their translation into a design. Includes formal specification and design methods such as structured analysis, object-oriented design and JSD. Prerequisite: CS 680.

CS 886. Software Project Management. (3). Presents the knowledge, techniques and tools necessary to manage the development of software products. Topics include the phases and activities involved in building a project, the skills and tools required for estimating and scheduling and the responsibilities of the individuals involved. Prerequisite: CS 680.

CS 890. Graduate Seminar. (1). A series of seminars on topics of current research interest in computer science. Participants are required to present one or two seminars on topic(s) to be selected with the approval of their graduate advisor. Repeatable up to 4 credit hours. Graded S/U only. Prerequisite: departmental consent.

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 and can be job-related. Students must write a report on the project and pass an oral final examination by an ad hoc faculty committee headed by the project advisor. Graded S/U only. Prerequisite: departmental consent.

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

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

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

Criminal Justice
See Community Affairs, School of.

English (Engl.)
Graduate Faculty
Distinguished Professor: Albert Goldbarth (Adelle B. Davis Distinguished Professor of Humanities)
Professors: Tina Bennett-Kastor, Sarah B. Daugherty (graduate coordinator), Lawrence M. Davis, Philip H. Schneider, William F. Woods
Associate Professors: Christopher K. Brooks, Margaret Dawe (chairperson), Jeanine M. Hathaway, W. Stephen Hathaway, Diane D. Quant, Richard S. Spilman, Donald R. Wineke, Peter T. Zoller
Assistant Professor: Anne Carroll

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.

Master of Arts
The Master of Arts (MA) program in English is designed to equip 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 rather than a course that develops specialization in one or two areas. Candidates also are given training in the principles of literary criticism and in the use of bibliographical tools so that they will have a general competence in criticism and research, although they may not be professional critics or research experts.

Admission Requirements
Applicants must meet the general requirements of the Graduate School, with the additional requirement that they have a 3.00 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.

Applicants who earned their undergraduate degrees more than 10 years before the time of application for admission must be interviewed by the graduate coordinator before admission to the degree program.

Applicants who have earned degrees at institutions in countries in which English is not the native language must score at least 600 on the TOEFL.(Test
of English as a Foreign Language) Examination before being admitted to the MA degree program in English.

Counseling. All MA candidates in English are advised by the coordinator of graduate studies 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 program and up to 6 hours of credit on plans B and C. If the credit to be transferred comes from a program in which the student took a graduate degree, the time limits imposed by the Graduate School on other transfers of credit will not apply.

Language Requirement. Master's degree candidates in English may fulfill the department's foreign language requirements in any one of the following ways:

1. By submitting a transcript showing the successful completion of at least 15 hours of undergraduate work in a single foreign language or the equivalent as defined by Fairmount College of Liberal Arts and Sciences
2. By completing the required 15 hours of undergraduate work in a single foreign language
3. By taking a test administered by the Department of Modern and Classical Languages and Literatures in the elected foreign language, with a successful score determined by the English department
4. By submitting a transcript showing successful completion of 6 hours of linguistics.

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

Degree Requirements
Engl. 800 (Introduction to Graduate Study in English) normally should be included in the student's first semester of graduate study.

All work to be counted toward the MA degree in English must be in courses numbered above 700—with the exception of 680 (Theory and Practice in Composition)—and the following courses in linguistics and in literature: Engl. 515, 521, 522, 524, 526, 527, 610, 615, 667, and 672. Engl. 515 and 615 may be taken to fulfill in part the major author and/or optional course requirements of the degree plans. Engl. 521, 522, 524, 526, and 527 may be taken to fulfill the period and/or optional course requirements of the degree plans. Candidates offering 500-, 600-, or 700-level English courses for graduate credit must satisfy a higher differential of performance relative to undergraduate students in the same courses, with the nature of this differential set by professors.

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

Plan A requires the completion of 11 courses for a total of 33 semester hours distributed as follows: Engl. 800 (Introduction to Graduate Study in English); two genre courses; three period courses in theEngl. 817-823 series and/or 521-527 series, with a minimum of two courses in English literature and one course in American literature; one course in composition theory and pedagogy (Engl. 680 or 780); and four elective courses in linguistics, literature, or methods of teaching English. With the approval of the Graduate Studies Committee, one of these electives may be taken in the College of Education. Regents' rules require that at least seven courses be at or above the 700 level. A master's essay is not required, but students must take a comprehensive examination on one period, one genre, and one area of composition, rhetoric, or linguistics. In consultation with the candidate, an advisor in each of the three examination fields will designate up to five books, in addition to those covered in the candidate's course work, for which the student will be responsible. The book list will thus include a maximum of 15 works. This list must be approved by the graduate coordinator.

Plan B requires ten courses for a total of 30 semester hours distributed as follows: Engl. 800 (Introduction to Graduate Study in English); two major author or special topics courses (Engl. 515, 615, 803, 840, 841, 845, or 860), one of which may serve as a context for the development of a thesis prospectus; one genre course consistent with the thesis topic; one period course consistent with the thesis topic; four elective courses; and Engl. 870 (Master's Essay). Regents' rules require that at least six courses be at or above the 700 level. A candidate's Plan of Study, approved by the graduate coordinator, should include an appropriate range of courses in canonical and modern literature. Plan B also requires a comprehensive examination on one period (or linguistics), one genre, and one major author or special topic related to the master's essay, as arranged with the thesis advisor. The first two examination fields should also be consistent with the subject of the master's essay. In consultation with the candidate, an advisor in each of the three examination fields will designate up to five books, in addition to those covered in the candidate's course work, for which the student will be responsible. The book list will thus include a maximum of 15 works. This list must be approved by the graduate coordinator.

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

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

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

All MFA students are required to take Engl. 800 (Introduction to Graduate Study in English). Teaching assistants must take Engl. 780 (Advanced Theory and Practice in Composition) unless specifically exempted.

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

Applicants who earned their undergraduate degrees more than 10 years before their application for admission must be interviewed by the graduate coordinator 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 on the TOEFL (Test of English as a Foreign Language) Examination before they may be admitted to the program.

Degree Program Status. Applicants who seek to be admitted with full standing in the degree program must submit a sample of original writing in fiction (approximately 20 pages), poetry (about six poems), or other appropriate form to the director of creative writing at the time they seek admission.

Counseling. All MFA candidates in English are advised by the coordinator of graduate studies in English and the director of creative writing. The creative coordinator will help the student establish a Plan of Study which will take into account the student's interests and future vocational plans.

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

Degree Requirements

Course Work. The 48 semester hours of course work are apportioned into two categories: required and elective courses.

A. Required Courses

1. A minimum of 3 hours per semester in Engl. 801 (Creative Writing: Fiction) or 805 (Creative Writing: Poetry) to a maximum of 12 semester hours.

2. Three hours in Engl. 800 (Introduction to Graduate Study in English) or the equivalent, required of all graduate students. Engl. 800 normally should be included in the student's first semester of graduate study.

3. Three hours in Engl. 830 (Graduate Studies in Drama), 832 (Graduate Studies in Fiction), or 834 (Graduate Studies in Poetry). With departmental consent, each course may be repeated for a maximum of 6 hours credit.

4. Three hours in Engl. 841 (Graduate Studies in Contemporary Literature), 860 (Graduate Seminar in Special Topics), or another suitable seminar in literature. With departmental consent, seminars may be repeated for a maximum of 12 hours credit.

5. Two to 6 hours in Engl. 875 (MFA Final Writing Project).

6. For purposes of enrichment, candidates must take at least 3 graduate hours in the humanities or fine arts outside English. The choice is contingent upon the student's having the proper prerequisites.

7. Graduate teaching assistants are required to take Engl. 780 (Advanced Theory and Practice in Composition) unless specifically exempted.

B. Elective Courses

Elective courses may be taken to pursue historical, technical, or theoretical studies that the candidate finds useful, to strengthen areas of weakness, or simply to enrich their degree program appropriately. All candidates must successfully complete a minimum of 15 elective hours in English courses numbered 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 graduate coordinator. Graduate students in 500-, 600- and 700-level courses are expected to meet higher standards of achievement than those imposed on undergraduates in the same courses. Within this unit, as many as 9 hours total of Engl. 880 (Writer's Tutorial: Fiction), Engl. 881 (Writer's Tutorial: Poetry), and Engl. 855 (Directed Reading) may be taken.

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

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

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

Composition

Courses for Graduate/Undergraduate Credit

Engl. 581. Composition Practicum. (0). Required for all teaching assistants in English. Does not count for credit toward the MA or MFA degree. Focuses on techniques and strategies for teaching composition. Each participant enrolls in the syllabus group appropriate to the composition course he or she teaches. Graded S/U only. Repeatable for credit. Prerequisite: appointment as a graduate teaching assistant in the Department of English.

Engl. 680. Theory and Practice in Composition. (3). Introduces theories of rhetoric, research in composition and writing programs, and practices in schools and colleges. Students investigate the process of writing, analyze varieties and samples of school writing, and develop their own writing skills by writing, revising, and evaluating their own and others' work. Especially for prospective and practicing teachers, may not be taken for credit by students with credit in Engl. 700.

Engl. 684-Q. Advanced Composition. (3). Explores the relationships among contemporary issues, problem-solving and communication. The first objective is to engage students in interdisciplinary inquiry into some aspect of social policy, inquiry which asks students to apply the analytical approaches of their major fields to current issues of broad, general interest. The second objective is to develop students' abilities to communicate their knowledge and assumptions about this issue to a variety of audiences and for a variety of purposes. Prerequisites: Engl. 101 and 102 and upper-division standing.

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

Creative Writing

Courses for Graduate/Undergraduate Credit

Engl. 517-519. Playwriting I and II. (3-3). Cross-listed as Thea. 516 and 517. The writing of scripts for performance. Emphasizes both verbal and visual aspects of playwriting. If available, the scripts are performed. Not repeatable for credit. Prerequisite: instructor's consent.


Courses for Graduate Students Only

Engl. 801. Creative Writing: Fiction. (3). Advanced work in creative writing. 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. 875, MFA Final Writing Project (1-6).

Linguistics

Courses for Graduate/Undergraduate Credit

Engl. 667. English Syntax. (3). Cross-listed as Ling. 667 and Anth. 667. A study of 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. An introduction to 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. 727. Teaching English as a Second Language. (1-3). Cross-listed as Ling. 727. Discusses current methods of teaching English to non-native speakers. Students learn to analyze interlanguage patterns and to design appropriate teaching units for class and language laboratory use.

Engl. 740. Graduate Studies in Linguistics. (3). Cross-listed as Ling. 740. Selected topics in theories of language and methods of linguistic study. With departmental consent, the course is repeatable for credit.

Literature

Courses for Graduate/Undergraduate Credit

Engl. 503. Studies in American Literature I. (3). The major fiction, poetry and nonfiction prose of the classic American period. Discussions may include the historical evolution of American letters, the development of the novel and romance, the transcendental period and the rise of western and regional literatures.

Engl. 504. Studies in American Literature II. (3). Fiction, poetry and drama from the late 19th century to World War II. Readings 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.


Engl. 514. Studies in Drama. (3). Subjects announced each semester. Repeatable for credit.

Engl. 515. Studies in Shakespeare. (3). Subjects announced each semester. Repeatable for credit, except by students who take Engl. 540Q. Prerequisites: junior standing and one college literature course or instructor's consent.

Engl. 521. Readings in Medieval Literature. (3). English and Continental literature, 12th to 15th century: Chaucer, Malory, the Pearl Poet, medieval lyric, drama, epic, romance and saga. Prerequisites: junior standing and one college literature course, or instructor's consent.

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

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

Engl. 526. Readings in Romantic Literature. (3). Blake, Wordsworth, Coleridge, Byron, Shelley, Keats and their contemporaries. Prerequisites: junior standing and one college literature course, or instructor's consent.

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


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

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

Engl. 557. Contemporary Women's Drama. (3). Cross-listed as Wom. S. 557. 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.

Engl. 580. Special Studies. (1-3). Topic selected and announced, by the individual instructor. Repeatable for credit. Prerequisite: departmental consent.

Engl. 610. Old English. (3). Cross-listed as Ling. 610. Studies the Old English language in enough detail to enable the reading of some prose and poetry, including parts of Beowulf in the original. Some literature, including all of Beowulf, is read in translation, with attention to important literary and cultural features of the period.

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


Courses for Graduate Students Only

Engl. 800. Introduction to Graduate Study in English. (3). Prepares students to perform effectively in graduate classes in English. Concerned with: (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 critical study and the relevance of other disciplines, such as psychology, to literature; and (4) the writing of interpretative and research essays. Throughout the semester a balance between criticism and research is maintained.


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

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


Engl. 826. Theories of Rhetoric: Renaissance to Early Modern. (3). 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, Rusch, John Quincy Adams, Blair, Campbell and Whately.

Engl. 830. Graduate Studies in Drama. (3). Selected topics in the history and nature of dramatic literature.

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


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

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

Engl. 850. Directed Reading. (2-3). For graduate students who want to pursue special research in areas not normally covered in course work. Repeatable for credit with departmental consent.

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


Environmental Science

The Master of Science degree program in environmental science is interdisciplinary. The purpose of providing this program is to allow graduates

1) to appreciate the complex working of natural systems,
2) to develop an appreciation for the interdisciplinary nature of this subject, and
3) to acquire the skills necessary to analyze and apply solutions to environmental problems.

The intent of this program is to educate scientists in a multidisciplinary approach (involving primarily biology, chemistry, and geology) rather than from the perspective of a single discipline. Such an effort will produce scientists who are able to approach environmental problems and environmental management from a multidisciplinary point of view.

Both foundations and practical applications will be emphasized; classroom activity will be focused on local environmental issues to provide practical experience.

Prerequisites

Applicants for admission must present an undergraduate degree with a GPA that meets department and Graduate School requirements. Prerequisite courses are two semesters of chemistry and either analytical or organic chemistry; two semesters of physics; two semesters of calculus or one semester of calculus and one of statistics; and two semesters of biology including a course in general ecology.

Students who have not completed these courses may be accepted in a conditional status with the expectation that prerequisites will be fulfilled concurrent with enrollment in the first year graduate courses. If too many prerequisite courses are lacking, a non-degree status may be suggested. Some deficiencies may be required as specific prerequisites for enrollment in the environmental science core courses.

Core Curriculum

All students must enroll in a two-semester, 8-credit-hour environmental science core course that will include advanced topics in environmental biology, chemistry, and geology. During each semester of enrollment, up to a maximum of four, students will be required to enroll in a 1-credit-hour environmental science colloquium. In addition to the required 8 hours of core and 4 hours of colloquium, students will complete a plan of study that totals a minimum of 30 hours, which includes credit for either an internship or research thesis.

Each student will choose a graduate advisor from one of the three participating departments. It is expected that the majority of elective courses will be taken in this particular department. A minimum of 8 hours of elective credit must be chosen in a departmental area other than the one of major emphasis. Both the student’s advisor and the graduate program committee will help the student design a coherent, practical program of study.

During the second year of study, all graduate students will be required to take a comprehensive written examination based on material presented in the core curriculum. Students choosing the option of a research thesis for degree completion will be required to prepare and orally present a research proposal prior to research initiation. Students choosing an internship option will be required to submit a detailed description to the graduate faculty for approval. Both the research thesis and internship options require completion of a written research paper and oral seminar presentation.

Relevant Elective Courses in the Natural Sciences

Chem. 523-524, Analytical Chemistry
Chem. 531-532, Organic Chemistry
Chem. 561, Introduction to Biochemistry
Chem. 603, Industrial Chemistry
Chem. 821, Equilibrium and Statistics in Analytical Chemistry
Chem. 822, Analytical Separations
Chem. 823, Analytical Spectroscopy
Chem. 824, Electroanalytical Chemistry
Geol. 560, Geomorphology and Land Use
Geol. 564, Remote Sensing Interpretation
Geol. 620, Laboratory Methods in Geology
Geol. 621, Geochemical Cycling
Geol. 630, 830, Field Studies in Geology
Geol. 650, Geohydrology
Geol. 678, Geologic Perspectives on Climate Change
Geol. 680, Geologic Resources in the Environment
Geol. 684, Methods of Subsurface Analysis
Geol. 720, Geochemistry
Geol. 724, Soils
Geol. 725, Clay Mineralogy
Geol. 730, Geoscience and the Environment
Geol. 751, Advanced Geohydrology
Geol. 821, Special Studies in Geochemistry
Geol. 870, Advanced Biogeology

Ethnic Studies

See Community Affairs, School of.

Geography (Geog.)

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

Courses for Graduate/Undergraduate Credit

Geog. 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 an in-depth study and analysis. Prerequisite: instructor's consent. May not be taken if credit has been received for Geog. 210Q.

Geog. 520. Geography of the United States and Canada. (3). Physical, political, economic, historical and human geography of the United States and Canada.

Geog. 530. Geography of Latin America. (3). General education further study course (social science). Physical, political, economic, historical and human geography of Latin America.

Geog. 542. Geography of Europe. (3). General education further study course (social science). Physical, political, economic, historical and human geography of Europe.


Geog. 620. Field Studies in Geography. (2-6). Off-campus, systematic field study in a selected area of geographic
Where appropriate, travel, lodging and board costs are charged.

Geog. 670. Urban Geography. (3). 2R; 3L. Lab fee. Geography of cities; the origin, growth, functions, characteristics and environmental problems of urban areas; structure and dynamic elements of intraspace; land-use analysis and approaches to urban planning; and problems of urban ecology.

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 and is repeatable for credit when content differs. May require field trips. Prerequisite: junior standing.

Geog. 750. Workshop in Geography. (1-4). Short-term courses with special focus on geographical problems. Prerequisite: instructor's consent.

Course for Graduate Students Only

Geog. 620. Field Studies in Geography. (2-6). Off-campus, systematic field study in a selected area of geographic significance. Course given on demand and may be repeated for credit when the locality and content differ. May require travel, lodging and board costs. Prerequisite: instructor's consent.

Geology (Geol.)

Graduate Faculty

Professors: William D. Bischoff (associate dean, Fairmount College of Liberal Arts and Sciences), James N. Gundersen, Salvatore J. Mazzullo (graduate coordinator)

Associate Professors: Collette D. Burke, John C. Gries (chairperson)

Assistant Professors: William Parcell, Wan Yang

The Department of Geology offers courses of study leading to the Master of Science (MS) degree.

Admission Requirements

Admission to the MS program in geology requires the completion of an undergraduate major in geology, normally including the achievement of the skills of geologic field mapping of igneous, metamorphic, and sedimentary rocks; their petrology; and report writing on their geological evolution.

In general, students entering the program must have the same background required for a WSU Bachelor of Science degree, including science courses in chemistry, physics, and biology; mathematics and statistics; language (English and speech); and computer science abilities. Students with undergraduate majors in the sciences, mathematics, or engineering are encouraged to apply because their training is appropriate for certain fields in modern geology. Most deficiencies can be removed by appropriate course work but prior consultation and evaluation are encouraged.

Degree Requirements

Although the department emphasizes field and laboratory skills of sedimentary geology, graduates may elect advanced courses and guided research to meet professional needs in a wide variety of geologic fields. Particular attention is directed to solving problems of mineral-fuel and mineral-resources depletion and to improving the environment. The practical aspects of geology are stressed and modern approaches of computer applications are employed in solving problems.

The student must be accepted by the Graduate School and by the Department of Geology; this assures all prerequisites have been fulfilled. In general, 30 credit hours are required. One to six of these hours may be thesis credit and at least 18 must be at the 700 and 800 level. The department encourages students to take courses relevant to their program outside geology.

Tool Requirement. Although the department does not have a tool requirement, students are encouraged to obtain proficiency in modem languages (especially French, German, and/or Russian), particularly if continuing for a PhD. Also it is important to have a certain level of proficiency in statistics and computer programming (FORTRAN, BASIC, and/or C are recommended.)

Examinations. The student is required to present the thesis proposal—Geol. 890—oral before the faculty to obtain approval before initiating work on the project. The proposal must be presented in enough detail to assure the faculty of the research promise of the topic and that the candidate can complete satisfactorily the project in the allotted time. Upon passing the oral examination, the written proposal is approved. After completing the thesis, the student must give a public oral defense.

Courses for Graduate/Undergraduate Credit

Geol. 536. Sedimentary Geology. (3). 2R; 3L. Lab fee. Study in a selected area of biogeology and paleontology. Content varies from fields of invertebrate, vertebrate and micropaleontology, and paleoecology. May require field trips. Prerequisites: Math. 112 or 123; Geol. 312; and Geol. 534 or 536.

Geol. 552. Physical Stratigraphy. (3). 2R; 3L. Description, classification, methods of correlation, and determination of relative ages of stratigraphic rock units; stratigraphic principles and practice; importance and use of biostratigraphy; the nature of cyclic sedimentation and controls on deposition; elements of sequence stratigraphy; measurement and correlation of stratigraphic sections in outcrops. Requires field trips. Prerequisites: Geol. 312 and 536.

Geol. 560. Geomorphology and Land Use. (2). General education further study course. Identification of landforms and their genesis; processes producing landforms; the influence of geomorphology in aspects of natural hazards such as landslides, floods, earthquakes, and volcanic activity; soil erosion, drainage basin modification, coastal and desert environments, mineral resource exploitation, and their effects on humans; importance of these influences in environmental management and land use planning. Prerequisite: Geol. 110Q or Geol. 102 or Geol./Geog. 201.

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 111Q or Geol./Geog. 201.

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

Geol. 570. Paleontology. (3). 2R; 3L. General education further study course. Systematic survey of major fossil biogeological materials, analysis of the origin and evolution of life and paleoecological interpretation of ancient environments and climates. Includes hand lens and binocular microscopic examination of major fossil biogeological materials. Includes application of analyzed fossil data to the solution of problems in 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. 574. Special Studies in Paleontology. (3). 2R; 3L. General education further study course. Systematic study in selected areas of biogeology and paleontology. Content differs, upon demand, to provide in-depth analysis in the fields of: (a) invertebrate paleontology, (b) vertebrate paleontology, (c) micropaleontology, (d) palynology and (e) paleoecology. Gives appropriate laboratory instruction in the systematic, taxonomy and biogeological relationships.
within the selected fields listed. May require field trips. Repeatable for credit to cover all five areas listed.

Geol. 602. Laboratory Methods in Geology. (1). Methods of data collection and analysis of geologic samples; special instruction in the use of (a) scanning electron microscope; (b) X-ray diffractometry; (c) atomic absorption spectrophotometer; (d) cathodoluminescope petrography; and (e) other instrumentation. Prerequisite: Geol. 312, 320; or instructor's consent.

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. 111Q and Chem. 111Q; or instructor's consent.

Geol. 630. Field Studies in Geology. (2-4). (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; may be repeated 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, and 552.

Geol. 650. Geohydrology. (3). 2R; 3L. 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. 242Q, 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 Climate Change. (3). Capstone course. Modern climate and climatic changes, and analysis of climatic deterioration; systematic study of geologic evidence of climate change through time. Emphasis on theoretical causes, feedback mechanisms, and recognition of effects on climatic perturbations in the rock record. Prerequisites: Geol. 312 and 526.

Geol. 680. Geologic Resources and the Environment. (3). 2R; 3L. Occurrence and origin of metallic and nonmetallic economic mineral deposits; laboratory examination or 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. 681. Computer Applications in Geology. (3). Capstone course. Applications of computers in the solution and presentation of geologic and affiliated studies, using available software. Lectures and practice on: (a) analysis of numerical data using spreadsheet and statistical programs; (b) simulation and quantitative analysis of physical processes of deposition, including time-series analyses; (c) modeling of surface and subsurface fluid flow, including groundwater hydrology; (d) mapping and analysis of geologic data; (e) programming in available spreadsheet programs; and (f) methods of presentation of geologic data utilizing computer graphics programs. Prerequisites: Geol. 526 and 552, Stat. 370; or senior standing.

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

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

Geol. 690. Special Studies in Geology. (1-5). Systematic study in selected areas of geology. Content differs and is repeatable for credit. Requires laboratory work or field trips (instructor's option). Offered on demand. Prerequisite: instructor's consent.

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

Geol. 702. Environmental Science I (4). 2R; 3L. Cross-listed as Biol. 702 and Chem. 702. 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. Prerequisite: acceptance in the master's of environmental science program or instructor's consent.

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

Geol. 706. Environmental Science Internship. (1-4). Cross-listed as Biol. 706 and Chem. 706. Students in the master's of environmental science program may gain interdisciplinary skills in environmental science by participating in applied and/or basic research internship projects with local business, industry, or government agencies. Internship option is an alternative to thesis research for degree requirements. Enrollment in internship projects requires an approved proposal. Completion of an internship for graduation requires a formal oral presentation of the internship activity and a written report. Prerequisites: completion of Environmental Science I and II.

Geol. 710. 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. 122Q or instructor's consent.

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

Geol. 725. Clay Mineralogy. (3). 2R; 3L. An evaluation of compositional and structural elements of clay-mineral families, related phyllosilicates and associated diagenetic-autigenic minerals in sedimentary environment. Also laboratory identification and classification of minerals by x-ray powder diffraction and thermal analysis. Prerequisite: Geol. 526.

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

Geol. 727. Carbonate Diagenesis. (3). 2R; 3L. An in-depth analysis of 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 diagnostic tools, cathodoluminescence and x-ray diffraction studies of
carbonates; origin and porosity. Prerequisites: Geol. 520 (unless waived by instructor) and 726.

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

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

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

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

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

Geol. 760. Exploration Geophysics. (3). An introduction to the theory and application of geophysical techniques for hydrocarbon, mineral, and groundwater prospecting. Topics include 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. Prerequisite: completion of geology undergraduate math and physics requirements; Math. 344 or 555; Geol. 324 and 544; and instructor's consent.

Geol. 781. Advanced Numerical Geology. (3). Involves practical implementation of algorithms and computer code. Included is the analysis of multivariate techniques and the development of the computer/algorithms needed to handle very large databases. Topics include standard statistical approaches to data analysis; treatment of applied linear algebra and matrix theory; and the application of linear and non-linear discriminate analysis, various factor analytical techniques, hard and fuzzy clustering, linear and non-linear unmixing analysis, and other forms of data modeling. Prerequisites: Geol. 581 or equivalent, competence in one or more high level computer languages. Math 344 or 555, and instructor's consent.

Courses for Graduate Students Only

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

Geol. 808. History of Geology. (1-3). Selected events and personalities in geology that have led to our present understanding of the geology's place in science. Prerequisite: instructor's consent.

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

Geol. 821. Special Studies in Geochemistry. (3). A systematic study in selected areas of geochemistry. Content differs upon demand to provide in-depth analysis in fields of (a) sedimentary carbonate and silicate geochemistry and mineralogy, (b) organic geochemistry, (c) high pressure and temperature thermodynamics of earth materials, (d) exploration geochemical geochemistry, (e) exogenic geochemical cycling, (f) stable isotope geochemistry. May be repeated for credit to cover all six areas listed. May require some laboratory work. Prerequisite: Geol. 720 or instructor's consent.

Geol. 823. Igneous and Metamorphic Petrology. (3).RL; 6L. Mineral paragenesis, bulk chemical compositions, physical chemical relationships, textures, structures, origins and classifications of igneous and metamorphic rocks. Thirteen section studies to facilitate rock identification and the determination of petrogenetic relationships. May require field trips. Prerequisite: Geol. 520.

Geol. 826. Sedimentary Petrology. (3). 2R; 3L. Detailed study of sedimentary rocks and their origins. Facilitates determinations of mineral compositions, textures, structures, fabrics and petrogenetic relationships by the use of thin sections, peels and geochemical analyses. May require field trips. Prerequisite: Geol. 526.

Geol. 830. Field Studies in Geology. (2-6). Off-campus, systematic field study in a selected area or region of geologic significance. Course given upon demand and may be repeated for credit when locality and content differ. Where appropriate, travel, lodging and board costs are charged. Prerequisite: summer field geology (or equivalent) and instructor's consent.

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

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

Geol. 860. Special Topics in Geophysics. (3). Systematic study in one or more selected topics of theoretical and applied geophysical techniques. Emphasis on applications of state-of-the-art concepts and principles to problems of regional to global significance. Potential topics include seismic stratigraphy, vertical seismic profiling, reservoir petrophysical response estimations, shallow aquifer/geophysical modeling, geophysical basin modeling, and regional and global environmental modeling. Prerequisites: Geol. 581, 760; Math. 344 or 555; or instructor's consent.

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

Geol. 881. Special Topics in Numerical Geology. (3). Systematic study in one or more topics of theoretical and applied quantitative analysis appropriate for environmental and geological research. Emphasis on applications of state-of-the-art concepts and principles to problems of regional to global significance. Potential topics include quantitative shape analysis, petrographic image analysis, multi-variable linear and non-linear unmixing, extrapolation and interpolation techniques, quantitative isotope chonostatigraphic techniques, modeling global phenomena, and simulations of multi-phase flow in aquifers and reservoirs. Prerequisites: Geol. 581, 781; and Math 344 or 555; or instructor's consent.

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

Gerontology
See Community Affairs, School of.
History (Hist.)
Graduate Faculty
Distinguished Professor: H. Craig Miner (Willard W. Garvey Distinguished Professor of Business History and chairperson)
Professors: John E. Dreifort, James C. Duram, Anthony P. Cythiel, Phillip D. Thomas
Associate Professors: John D. Born, Jr, Judith R. Johnson, Willard C. Klunder, Keith H. Pickus (graduate coordinator), Craig I. Torbenson
Assistant Professors: Helen Hurdley, Ariel Loftus, Jay Price (director of public history program), Benson Tong

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

Admission Requirements
Admission to the MA program in history requires completion of an undergraduate major in history, or the equivalent; 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 or conditional admission. International students are required to have a minimum TOEFL of 600.

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

Thesis Program
Course Hrs.
Hist. 725, Advanced Historical Method 3
Hist. 727, Readings in History 3
Hist. 729, 730, 733, 734, Seminars 9
Hist. 500 and 600, Courses 12
Hist. 801, Thesis Research 2
Hist. 802, Thesis 2
Hist. 803, Internship 6
Total 35

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

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

Students must pass written examinations in two comprehensive fields.

Thesis Program in Public History Course Hrs.
Hist. 701, Introduction to Public History 3
One course selected from the following: 3
Hist. 702, Historical Preservation
Hist. 703, Museum Administration
Hist. 705, Introduction to Archives
Hist. 704, Interpreting History to the Public 3
Hist. 725, Advanced Historical Method 3
Hist. 729, 730, 733, 734, Seminars 6
Hist. 500 and 600, Courses 9
Hist. 801, Thesis Research 2
Hist. 802, Thesis 2
Hist. 803, Internship 6
Total 35

Hist. 781, Cooperative Education in History, may be substituted for Hist. 803 with the consent of the director of the public 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
Public History

Courses for Graduate/Undergraduate Credit

Hist. 501. The American Colonies. (3). General education further study course. Colonization of the New World emphasizing the British colonists and their development.

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

Hist. 503. The Age of Jefferson and Jackson. (3). General education further study course. Political, economic and cultural development of the United States from the election of Thomas Jefferson to the end of the Mexican War emphasizing the growth of American nationalism.

Hist. 504. Civil War. (3). General education further study course. A study of the origins and military events of the American Civil War and the political and social ramifications of the conflict.

Hist. 505. America's Gilded Age, 1877 to 1900. (3). Emphasizes roots of urban problems, foundations of dissent policy toward minority groups and evaluation of imperial expansion.

Hist. 507. The United States, 1900-1945. (3). General education further study course. Examines political, social, and economic issues from the Progressive Era through World War II.
to the present—changing life-styles and thought patterns, urban architecture, ethnic assimilation, emergence of the suburb, political and ecological adjustments and the influence of new technology and forms of business organization.

> Hist. 534. History of the Old South. (3). General education further study course. An examination of Southern civilization prior to the American Civil War.

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

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

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

> Hist. 541. Modern France. (3). General education further study course. History of the major trends in French history from Napoleon to DeGaulle emphasizing French attempts to adjust politically, socially, economically and culturally to the changing conditions of modern industrial society.

Hist. 545Q. Neither War Nor Peace: The World Since 1945. (3).

> Hist. 553. History of Mexico. (3). General education further study course. Pre-Columbian Mesoamerica; the Spanish conquest and the colonial period; the independence movement; Juarez, the Reform and the French intervention; the Porfiristas; the Mexican Revolution; Mexico in recent years.

> Hist. 555. The Ancient Near East. (3). General education further study course. Political and cultural history of ancient Mesopotamia, Iran, Egypt, Palestine, Syria and Asia Minor to the death of Alexander the Great.

> Hist. 559Q & > Hist. 560. Greek History. (3 & 3). General education further study courses. 559Q: the Hellenic world from prehistoric times to the end of the Peloponnesian War. 560: the 4th century and the Hellenistic period.


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

Hist. 568. Social, Economic and Intellectual History of the Middle Ages. (3). Examines the 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. 575Q. The Italian Renaissance. (3). General education further study course. Italian history from the 14th through the 16th centuries emphasizing cultural achievements.

Hist. 576. The Reformation. (3). General education further study course. Cross-listed as Rel. 476. The great religious changes in the 16th century in the political, social and intellectual contexts.

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

Hist. 581. Europe, 1815-1870. (3). General education further study course.

Hist. 582. Europe, 1919-1945. (3). General education further study course. Surveys European history from 1870 to 1945.

Hist. 583. Europe, 1945-Present. (3). General education further study course. A survey of European history from 1945-present.

Hist. 588. History of Early Russia. (3). General education further study course. Covers the social, political, and cultural history of Kievan and Muscovite Russia.

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

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

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

Hist. 613. European Diplomatic History. (3). General education further study course. European international politics and diplomatic practices, emphasizing the actions of the great powers and their statesmen. Versailles settlement, totalitarian aggression, appeasement, World War II, the cold war and decolonization of Southeast Asia and the Middle East as prelude to major power involvement.

Hist. 620. Media Courses in History. (2-3). Courses created or coordinated by the Department of History, offered through various media: radio, television and newspaper. Areas of historical emphasis vary. Repeatable with instructor's approval; however, 3 hours maximum credit will apply towards MA degree in history.

Hist. 698. Historiography. (3). Review of the major schools of historical thought, philosophies of history and eminent historians from the ancient world to the present. Required of history majors.

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

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

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

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

Hist. 705. Introduction to Archives. (3). Introduce 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. Learn the theory and skills necessary to understand and apply basic archival functions. Prerequisite: Graduate standing and/or instructor's consent.

Hist. 725. Advanced Historical Method. (3). Reviews basic historical research methods, the general character of field bibliographies and recent interpretations and the techniques of professional narrative development. Required of graduate degree students during their first year of enrollment. Prerequisite: departmental consent.
Hist. 727. Readings in History. (0). Readings is ancient, medieval, modern, European and American field bibliographies. Repeatable for credit. Prerequisite: departmental consent.

Hist. 729. Seminar in American History. (0). Repeatable for credit. Prerequisite: departmental consent.

Hist. 730. Seminar in American History. (0). Repeatable for credit. Prerequisite: departmental consent.

Hist. 733. Seminar in European History. (0). Repeatable for credit. Prerequisite: departmental consent.

Hist. 744. Seminar in European History. (0). 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. (0-2). Graduate history students participate in internship experiences funded through the Cooperative Education programs. Augments Hist. 803. Prerequisite: instructor's consent.

Courses for Graduate Students Only


Hist. 802. Thesis. (2).

Hist. 803. Internship in Public History. (1-2). Public History students practice their skills in summer or semester internships. Type and level of responsibility vary depending on student's interests and work setting. Internship should be in area related to student's MA thesis. Prerequisites: Hist. 701 and consent of public history faculty.

Hist. 810. Special Topics in History. (1-3). Open only to graduate students. Repeatable for credit to a maximum of 6 hours.

Hist. 865. State and Local Government Finance. (3). Cross-listed as Econ. 865 and P. Adm. 865. An analysis of state and local government expenditure and revenue systems, with an introduction to state and local financial administration. Prerequisites: Econ. 765 or instructor's consent.

Hugo Wall School of Urban and Public Affairs

See Urban and Public Affairs, Hugo Wall School of.

Liberal Studies (LAS-I)

Graduate Coordinator: Ramona Liera-Schwichtenberg

Advisory Committee: Wilson Baldridge (modern languages), Carol Wolfe Konek (women's studies), Ron Matson (sociology), David Soles (philosophy), Benson Tong (history).

The Master of Arts in Liberal Studies (MALS) program is designed for people who wish to pursue a particular topical or interdisciplinary interest at the graduate level, but find the existing programs either too specialized or insufficiently individualized. 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. Barring special circumstances, applicants must also have a grade point average of 3.00 or better for the last 60 hours of course work. No more than 6 hours of graduate credit from another institution will be considered for transfer into the liberal studies program.

When submitting an application to the Wichita State Graduate School, students must contact the MALS office for an initial interview with the graduate coordinator. In addition, students must complete a brief essay describing their motivation for selecting the liberal studies program, outlining their proposed 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 Supervisory Committee may request that the applicant submit Graduate Record Examination scores (verbal and quantitative).

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

Before completing the first 12 hours of graduate work in the program, the student must:
1. Complete selection of members of the faculty advising committee and inform the graduate coordinator
2. With the assistance of this committee, prepare a Plan of Study to be approved by the graduate coordinator and the Graduate School.
3. Complete LAS 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 Advisory Committee.

Degree Requirements

The structural framework for the degree is a Plan of Study, developed by the student in consultation with faculty in the program. It must include:
1. A minimum of 36 semester hours of credit
2. No more than 12 semester hours from any one department
3. A maximum of 12 hours in a college other than liberal arts and sciences
4. At least 22 of the 36 total hours in courses numbered 700 or above
5. Three of the 36 hours must be taken in LAS 800, Research Goals and Strategies.
6. A master's thesis for 6 hours' credit or a terminal project for 6 hours' credit.

Graduate Certificate in Great Plains Studies

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

Requirements: Graduate students must meet requirements for admission to the WSU Graduate School in a degree program or non-degree 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 LAS-I 800 work with the instructor and the Great Plains Studies coordinator to develop an appropriate focus.

Students complete 20 hours of course work, including three required courses (LAS-I 501, 510, and 800) with the remaining courses selected from these designated courses: Anthr. 612, Anthr. 613, Biol. 503, Biol. 575; Engl. 860, Geol. 562, Geol. 570, Hist. 535Q, and Hist. 536.

Courses for Graduate Students Only

LAS-I 501. Great Plains Experience. (0-3). 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, national preserves, and other places of significance in Great Plains Studies. Prerequisite: LAS-I 201 or 800 or instructor's consent.

LAS-I 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. Prerequisite: 12 hours of Great Plains Studies course work, including LAS-I 201 and 501; undergraduates must have senior status or instructor's consent.

LAS-I 700. Workshop: Special Topics. (1-3). Meets identified needs of specific students.

Courses for Graduate Students Only

LAS-I 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 program. To be taken during the first 12 hours of course work.

LAS-I 875. Thesis. (1-6). For students who are finishing the Master of Arts in Liberal Studies (MALS). 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.

LAS-I 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 have been 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 advisory committees 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.)
Graduate Faculty
Professors: Tina L. Bennett-Kastor, Lawrence M. Davis

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

Group A—Basic Linguistic Theory
Courses for Graduate/Undergraduate Credit
Ling. 667. Linguistics. English Syntax. (3). Cross-listed as Engl. 667 and Anthr. 667. Studies the basic principles of English syntax, covering the major facts of English sentence construction and relating them to linguistic theory. Prerequisite: Ling. 315 or equivalent or departmental consent.

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


Ling. 682. Linguistics. Structure of a Selected Non-Indo-European Language. (3). Language offered depends on student demand and availability of staff. Course may be conducted as a field methods course and is repeatable for credit when different languages are offered. Prerequisite: Ling. 315.

Group B—Linguistic Study of Specific Languages or Language Groups
Courses for Graduate/Undergraduate Credit

Ling. 505. Russian. Russian Phonology. (2). Cross-listed as Russ. 505.


Ling. 610. English. Old English. (3). Cross-listed as Engl. 610. Studies the Old English language in enough detail to enable the reading of some prose and poetry, including parts of Beowulf in the original. Some literature, including all of Beowulf, is read in translation, with attention to important literary and cultural features of the period.

Ling. 635. French and Spanish. Introduction to Romance Linguistics. (3). Cross-listed as Frn. 635 and Span. 635.

Group C—Areas of Contact Between Linguistics and Other Disciplines
Courses for Graduate/Undergraduate Credit


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

Ling. 740. Graduate Studies in Linguistics. (3). Cross-listed as Engl. 740. Selected topics in theories of language and methods of linguistic study. With departmental consent, the course is repeatable for credit.

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 and Statistics
Graduate Faculty
Professors: Andrew Adier, Dharam V. Chopra, Alan R. Elcrat, Buma L. Friedman (chairperson), John J. Hutchinson, Victor Iakov, Peter Kuchment, Kirk E. Lancaster, Kenneth G. Miller (graduate coordinator), Hari Mukerjee, Phillip E. Parker, Ziqi Sun
Associate Professors: Stephen W. Brady, Thomas DeLillo, Toto H. Ho, Xiaomai Hu, Zhiren Jin, Daowei Ma, Vassilis Capanocolau
Assistant Professor: Chungsheng Ma

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

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

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

Students who plan to enter the PhD program in applied mathematics should include Real Analysis I and II and Numerical Linear Algebra in their MS program of study.

Generally not more than 6 hours of approved course work may be transferred from another university. Students may take either a thesis or a non-thesis option. Students electing to write a thesis must enroll in Math. 885 for up to 6 hours credit. A student's program must be approved by the department. A comprehensive examination is required of all degree candidates.

"Complex and Vector Analysis for Engineers (789) and mathematics or statistics courses numbered below 600 do not count toward the 33 hours needed for the MS in mathematics.

Doctor of Philosophy
The primary emphasis in the doctoral program in applied mathematics is partial differential equations, probability and statistics, and computational mathematics.
Admission Requirements

Admission to the doctoral program will be through the Admissions and Exceptions Committee of the department. Students may enter the doctoral program in mathematics and statistics if they have the prerequisites for the initial required courses, have taken the advanced GRE and have a 3.000 overall grade point average and a 3.250 grade point average in mathematics and statistics.

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

Degree Requirements

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

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

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


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

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

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

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, will recommend to the departmental PhD Advisory Committee a PhD committee for the student. The student’s PhD committee will consist of the student’s dissertation advisor as chair and four other members. At least one, but no more than two, of the committee members shall be from departments outside the Department of Mathematics and Statistics. Within one semester after passing the qualifying exam the student should submit a Plan of Study to the committee for approval. This committee will serve as examining committee for both the preliminary and final exams.

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

Dissertation and Final Exam: Upon passing the preliminary exam the student becomes a candidate for the PhD degree. Soon thereafter the student must submit a 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.

Courses for Graduate/Undergraduate Credit

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

Math. 501. Elementary Mathematics. (3). A study of topics necessary to an understanding of the elementary school curriculum, such as set theory, real numbers and geometry. Not for major or minor credit. Prerequisites: elementary education major and Math. 111 or equivalent with a grade of C or better or departmental consent.

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 grade of C or better.

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

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

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

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

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


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

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

Math. 566. 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 or C or better or departmental consent.

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

Math. 640. Advanced Calculus II. (3). A continuation of Math. 547. Prerequisite: Math. 511 and 547 with a grade of C or better in each.

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

Math. 667. Optimization Theory. (3). Introduces selected topics in linear and nonlinear optimization. Develops the revised simplex method along with a careful treatment of duality. Then extends the theory to solve parametric, integer and mixed integer linear programs. Prerequisite: Math. 511 with C or better.

Math. 668. Introduction to Mathematical Logic. (3). An axiomatic development of elementary mathematical logic through first-order logic culminating in theorems on completeness and consistency. Investigates connections with Boolean algebra, formal languages and computer logic. Prerequisite: Math. 415 or 511 with C or better or departmental consent.

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

Math. 714. Applied Mathematics. (3). Cross-listed as Phys. 714. A study of mathematical techniques applicable to physics and other sciences. Instructor selects topics such as power series, infinite products, asymptotic expansions, WEB method, contour integration and residue methods, integral transforms, Hilbert spaces, special functions and integral equations. Prerequisite: Math. 550 or instructor's consent.

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

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

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

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

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

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

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

Math. 757. Partial Differential Equations for Engineers. (3). Includes Fourier series, the Fourier integral, boundary value problems for the partial differential equations of mathematical physics, Bessel and Legendre functions and linear systems of ordinary differential equations. Prerequisite: Math. 550 or 555 with C or better.

Math. 759. 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. No credit for this course toward a graduate degree in mathematics. Prerequisite: Math. 541 or 547 with C or better or departmental consent.

Math. 760. Selected Topics in Engineering Mathematics I and II. (3-3). 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.

Courses for Graduate Students Only


Math. 818. Selected Topics in Number Theory. (2-3). Repeatable with departmental consent. Prerequisite: departmental consent.


Math. 829. Selected Topics in Topology. (0-3). Repeatable with departmental consent. Prerequisite: departmental consent.

Math. 839. Selected Topics in Calculus. (2-3). Repeatable with departmental consent. Prerequisite: departmental consent.


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. 854. Tensor Analysis with Applications. (3). Introduces tensor analysis, considers applications to continuum mechanics, structural analysis and numerical grid generation. Prerequisite: Math. 543 or 757.


Math. 857-858. Selected Topics in Engineering Mathematics I and II. (3-3). 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. 860. Research Paper. (3). Oral presentation of research in areas of interest to the student. Prerequisite: major standing.

Math. 871. Individual Reading. (1-3). Prerequisite: departmental consent. Repeatable up to a maximum of 6 hours credit with departmental consent.

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


Math. 947-948. Mathematical Theory of Fluid Dynamics I and II. (3-3). Mechanics of fluid flow, momentum and momen-
flows, vortex dynamics, stability analysis and numerical methods applied to fluid dynamics. Prerequisite: Math. 745.

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

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

Math. 981. Advanced Independent Study in Applied Mathematics. (1-3). Arranged individual directed study in an area of applied mathematics. Repeatable to a maximum of 6 hours. Prerequisite: must have passed the PhD qualifying exam and instructor's consent.

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

Statistics (Stat.)

Courses for Graduate/Undergraduate Credit
Credit in courses numbered below 600 is not applicable toward the MS in mathematics.

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

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

Stat. 574. Elementary Survey Sampling. (3). General education further study course. Reviews basic statistical concepts. Covers simple, random, stratified, cluster and systematic sampling, along with selection of sample size, ratio, estimation and costs. Applications studied include problems from the social and natural sciences, business and other disciplines. Prerequisite: any elementary course in statistics, such as Stat. 370, Soc. 501 or Psy. 401 with a C or better.

Stat. 575. Applied Nonparametric Statistical Methods. (3). General education further study course. Studies assumptions and needs for nonparametric tests, rank tests and other nonparametric inferential techniques. Applications involve problems from the social and natural sciences, business and other disciplines. Prerequisite: any elementary statistics course such as Stat. 370, Soc. 501 or Psy. 401 with C or better.

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

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

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

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

Stat. 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 grade of C or better 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 of C 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 of C 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 and Stat. 761 or 771.


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. 878. Special Topics. (2-3). Repeatable with departmental consent. Prerequisite: departmental consent.

Stat. 879. Individual Reading. (1-5). Prerequisite: departmental consent.

Stat. 884. Statistical Computing II. (3). Teaches special graphics and numerical methods needed in the analysis of statistical data. Includes advanced simulation techniques, numerical methods for linear and nonlinear problems, analysis of missing data, smoothing and density estimation, projection-pursuit methods and graphic techniques. Prerequisites: Math. 751 and Stat. 772 with C or better or 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. 996. PhD Dissertation. (1-9). Repeatable to a maximum of 24 hours. Prerequisite: must have passed the PhD preliminary exam.

Modern and Classical Languages and Literatures Graduate Faculty
Professors: Ginette Adanson, Pedro Bravo-Elizondo, Dieter Saalmann (chairperson), Gary Toops
Associate Professors: Wilson Baldridge, John Koppenhaver, Eunice Myers, Brigitte Roussel
Assistant Professors: Carl Adamson, Patrick E. Kehoe, Maria Rey-Lopez (graduate coordinator)

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

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


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

Fren. 525. Advanced French Conversation. (3). Designed to increase proficiency in spoken French. Assignments include oral reports, dialogues, and work in the language laboratory. Prerequisite: Fren. 227 and either 220 or 223, 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. 220 or departmental consent.

Fren. 540Q. French Literature in English Translation. (3). Topic varies. May be used to satisfy the general education literature requirement and may count toward a French major or minor if readings and papers are done in French.

Fren. 541Q. French Literature of Africa and the Caribbean in English Translation. (3). A study of the concept of Negritude through the works of major contemporary African and Caribbean writers. No knowledge of a foreign language is necessary. May be used to satisfy the general education 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 and history, social evolution and intellectual traditions. Course is interdisciplinary in nature and is designed to complement studies in French language and literature. Includes slide demonstrations, guest speakers on special topics and films. Most classes and required readings are in French. Prerequisite/corequisite: Fren. 300.

Fren. 552. Contemporary French Civilization. (3). Emphasizes the major events, themes, ideas, trends and movements in French civilization since the Revolution. Course is interdisciplinary in nature and is designed to complement French language and literature courses. Class work and readings are in French. Prerequisite/corequisite: Fren. 300.

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


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


Fren. 635. Introduction to Romance Language Linguistics. (3). Cross-listed as Span. 635 and Ling. 635. An introduction to the historical phonology and morphology of the romance languages emphasizing French and Spanish. Prerequisite: departmental consent.

Fren. 636. 20th Century French Literature. Reading and discussion of major works of French fiction, poetry and drama from 1900 to 1960. Prerequisite: Fren. 300.

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

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

Course for Graduate Students Only
Fren. 815. Special Studies in French. (3). Prerequisite: departmental consent. Repeatable for credit.

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

Courses for Graduate/Undergraduate Credit
Germ. 524. Advanced German Conversation and Composition. (3). Prerequisites: Germ. 324 or instructor’s consent.

Germ. 650. Directed Studies in German. (1-3). Enrollment in any of the areas listed takes place only upon consultation with the department and agreement with the instructor concerned: (a) introduction to the study of German literature; (b) survey I: from the medieval period through the Age of Goethe; (c) survey II: 19th century to 1945; (d) contemporary literature, including the literatures of East and West Germany, 1949-1989; (e) special topics in literature, repeatable once for credit; (f) special topics in language, repeatable once for credit. Prerequisite: Germ. 344Q or instructor’s consent.

Germ. 750. Workshop in German. (2-4). Repeatable once for credit.

Greek (Ancient Classical) (Greek)
Although a complete graduate program is not available currently in Greek, the following courses may apply toward a master’s degree.

Courses for Graduate/Undergraduate Credit
Greek 515. Special Studies in Greek. (1-4). Topic announced by instructor. Repeatable for credit. Prerequisite: Greek 224 or instructor’s consent.

Greek 531. Advanced Greek. (3). Sophocles and Euripides. Prerequisite: Greek 224.
Greek 532. Advanced Greek. (3). Thucydides. Prerequisite: Greek 531.

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

Courses for Graduate/Undergraduate Credit
Latin 224 or departmental consent is the prerequisite for all upper-division courses.

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

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

Latin 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.

Latin 545. The Roman Novel. (3). Reading of the Satyricon of Petronius and the Golden Ass of Apuleius. The portions that are not read in Latin are read in English. Gives consideration to the development of the novel from its Greek beginnings up to the time of Apuleius and beyond.

Latin 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.


Latin 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.

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


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

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

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

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

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

Admission Requirements
Admission to the program requires the completion of 24 hours of undergraduate Spanish, 8 hours of which were on the junior-senior level, and a 3.00 GPA in Spanish.

Degree Requirements
The MA degree in Spanish requires the completion of 32 semester hours beyond the BA degree, including at least two seminars—Span. 625, 631, or 832—that require research papers. Of these hours, 20 must be in courses numbered 700 or above.

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

A candidate for a degree must pass Span. 526 or an equivalent course with a grade of 8 or better at either the undergraduate or graduate level.

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

Spanish 300 is a prerequisite for all upper-division literature and civilization courses, unless otherwise indicated. All literature courses, including Span. 223 and 300, may fulfill the general education literature requirement.

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

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

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

Span. 525. Spanish Conversation III. (2). Increases proficiency in spoken Spanish. Assignments include oral reports and dialogs. Prerequisite: Span. 325 or departmental consent.

Span. 526. Advanced Spanish Grammar and Composition. (3). Prerequisite: Span. 220 or departmental consent.

Spanish 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. 540Q. Contemporary Spanish Literature in English Translation. (1). 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. 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. Literary and Technical Translating in Spanish. (3). Extensive translation of literary works and technical and legal documents from Spanish to English and English to Spanish. Prerequisite: Span. 526 or departmental consent.

Span. 620. Survey of Latin-American Literature. (3). Main currents of Latin-American literature from 1500 to 1800. Prerequisite: Span. 300 or departmental consent.

Span. 621. Survey of Latin-American Literature. (3). Main currents of Latin American literature from 1800 to present. 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. 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. Prerequisite 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. Prerequisite or corequisite: Span. 300 or departmental consent.

Span. 628. Contemporary Latin-American Theater. (3). A study of contemporary theater from 1900 to present. Prerequisite: 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 Frem. 635 and Ling. 635. An introduction primarily to the historical phonology and morphology of the romance languages emphasizing French and Spanish. Prerequisite: departmental 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. 750. Workshop in Spanish. (2-4). Repeatable for credit.

Courses for Graduate Students Only


Span. 826. Spanish Grammar and Stylistics. (3). Intensive study of advanced grammar and stylistic usage.

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. Emphasis is on Spanish colonization. Prerequisite: graduate standing.

Span. 831. Seminar in Spanish Literature. (3). (a) Middle Ages, (b) Renaissance, (c) Golden Age theatre; (d) Cervantes; (e) modern novel; (f) Generation of '98; (g) romanticism; (j) 20th century poetry; (k) criticism; (l) literature; (m) 20th century theatre, and (n) contemporary Spanish novel.

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.

Philosophy (PhIL)

Graduate Faculty
Professor: Gerald H. Paske
Associate Professors: Robert Feleppa, A.J. Mandt, Ben F. Rogers, David Soles (chairperson), Deborah H. Soles
Assistant Professor: J.W. Mallory

Although there is no graduate degree in philosophy, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit

Phil. 518. Recent British-American Philosophy. (3). Examination of philosophical ideas and movements in recent British and American philosophy. Discusses movements such as logical positivism, pragmatism, ordinary language philosophy and analytic philosophy. Readings are selected from figures such as Russell, Wittgenstein, Pierce, Dewey and Quine.

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

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

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

Phil. 547. Topics in Ancient Philosophy. (3). Explores one decisive issue in philosophy from the time of Thales through the Socratics. 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 of the issues treated are: the nature of what is, the concept of the sacred, the meaning of truth, the relation of invariance and process, the existence of universal standards of thought and conduct, the problem of knowledge, skepticism, the nature of language and the character of philosophical inquiry.

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

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

Phil. 557. Contemporary European Philosophy. (3). An exploration of a theme, issue, philosopher or movement in contemporary European philosophy. Includes such philosophers as Husserl, Heidegger, Jaspers, Gadamer, Habermas, Marcuse, Adorno, Bergson, Sartre, Merleau-Ponty, Bachelard, Lacan, Derrida, Foucault and Ricoeur. Examines philosophical movements such as phenomenology, idealism, existentialism, structuralism, process philosophy, hermeneutics and Marxism.

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. 674. Artificial Intelligence and Philosophy. (3). Cross-listed as CS 674. Transfer of ideas between artificial intelligence and philosophy: concept and techniques of artificial intelligence and their application in philosophy (search, heuristic, problem solving, knowledge representation, learning, discovery); sources of insight for artificial intelligence in different branches of philosophy. The analo-
gy between minds and computers "cognition is a computation and the mind is a computer," is contrasted with "there are mental features not accessible to computation." Discusses the relevance of Godel's theorem and of other results in the domain of computability in this context. Prerequisites: at least one 300-level course in computer science or philosophy, Math. 243 and 5 hours toward the major in any one of the physical or biological sciences with grades of C or better or departmental 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. 805. Business and Morality. (3). Critically examines moral issues particularly germane to business. Includes theories of distributive justice, theories of property rights, the role of business as a social institution, employment rights and obligations, environmental issues and theories of socially responsible investment practices. Readings from classical and contemporary authors.

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.

Physics (Phys.)

Graduate Faculty

Professors: David R. Alexander, James C. Ho, Pawan K Kahol
Associate Professors: Elizabeth C. Behrmann, Hussein Hamdeh (chairperson), Syed M. Taher (graduate coordinator)

Assistant Professor: Jason Ferguson

Master of Science

Through its master of science (MS) degree program, the Department of Physics helps students prepare for doctoral work in physics or for jobs in research and industry. The MS degree program is flexible so students can design their studies to meet their educational or career goals. Students may combine the study of physics with a chemical physics option or with interests in other fields such as astronomy, engineering, geology, computer science, biological sciences, and education.

Admission Requirements

Admission to the MS program in physics requires the completion of 24 hours of undergraduate physics, including 3 semester hours of mechanics and 3 semester hours of electricity and magnetism, and meeting the Graduate School admission requirements.

Degree Requirements

The MS degree in physics requires the successful completion of a Plan of Study approved by the student's advisor and the department chairperson. Two options are available: a 36-hour nonthesis program and a 30-hour program which 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. 871, Statistical Mechanics; and Phys. 811, Quantum Mechanics. Up to 9 hours of course work may be taken outside the department under the thesis option, and up to 12 hours under the nonthesis option.

Other Program Options

Students entering the MS degree program with a chemical physics option must include within the above requirements 6 hours from Chem. 711, 725, 741, 745, 746 or other approved chemistry courses. Students also should take Phys. 642 unless taken for undergraduate credit.

Other program options are available which provide the possibility of combining the study of physics with interests in other fields such as astronomy, engineering, geology, computer science, biological sciences, and education.

Examinations

During the first semester, students are given a diagnostic entrance examination. An oral defense of the thesis is required.

Courses for Graduate/Undergraduate Credit

"Course may not be counted for credit toward a graduate physics major.

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

Phys. 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 research. Experiments cover the uses of vacuum tubes transistors, IC and digital circuits. Prerequisite: Phys. 314Q.

*Phys. 581. 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. 214Q or 314Q 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. 214Q or 314Q and Math. 344.

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

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

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

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

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

Phys. 641. Thermodynamics. (3). The laws of thermodynamics, distribution functions, Boltzmann equation, transport phenomena, fluctuations, and an introduction to statistical mechanics. Prerequisites: Phys. 214Q or 314Q and Math. 344 with grades of C or better.

Phys. 651. Quantum Mechanics. (3). Introduction to quantum mechanics, the Schrodinger equation, elementary perturbation theory, and the hydrogen atom. 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. 741. 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.

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 Schrödinger and Heisenberg formulations of quantum mechanics. Applications include rectangular potentials, central forces, and the harmonic oscillator. Also includes spin, time independent, and time dependent perturbation theory. Prerequisites: Phys. 621 and 651 or departmental consent and Math. 555.


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


Phys. 860. 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 and 681, or departmental consent.

Political Science (Pol. S.)

Graduate Faculty
Professor: Melvin A. Kahn
Associate Professors: Kenneth Cbokski, David Ericson, James W. McKenney, John E. Stanga, Jr., James P. Sheffield, Jr. (chairperson)

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

Pol. S. 505. The Politics of Health. (3). Shows how governments in the United States make decisions in the health field, describes the political forces shaping governmental policy in health and analyzes the arguments for and against an increased governmental role in health.

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

Pol. S. 524. Politics of Modern China. (3). General education further study course. Emphasizes study of 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 communist 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.


Pol. S. 534. Problems in Foreign Policy. (3). General education further study course. Examines domestic and international problems associated with U.S. foreign policy.

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

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

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

Pol. S. 560. The Planning Process. (3). Cross-listed as P. Adm. 560. 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.

Pol. S. 564. Comparative Public Administration. (3). Cross-listed as P. Adm. 564. Studies the administrative system of selected developed and developing countries emphasizing the various methods and approaches of comparative analysis and the relationships between administrative institutions and their environmental settings.


Pol. S. 701. Method and Scope of Political Science. (3). Emphasizes philosophy of science and methodology (as distinguished from method and technique) and exposes students to recent works of methodological importance in the various subfields within the discipline. Prerequisite: departmental consent.

Pol. S. 703. Professional Seminar in Political Science. (3). Introduces entering graduate students to the various subfields of the discipline. Should be taken the first or second semester of graduate study.

Pol. S. 710. Public Sector Organizational Theory and Behavior. (3). Cross-listed as P. Adm. 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.

Pol. S. 725. Public Management of Human Resources. (3). Cross-listed as P. Adm. 725. Surveys the major areas of management of human resources in the public sector. Includes hiring, training, evaluation and pay protection policies. Special emphasis on 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.

Pol. S. 750. Workshop. (2-4). Prerequisite: instructor's consent.

Courses for Graduate Students Only

Pol. S. 810. Seminar in Comparative Government. (3). The comparative study of selected aspects of the politics and institutions of foreign governments. Prerequisite: departmental consent.
Pol. S. 853. Seminar in International Relations. (3). Analysis of special problems in, and approaches to, the study of international relations. Prerequisite: departmental consent.

Pol. S. 841. Seminar in Urban Politics. (3). An intensive analysis of urban politics emphasizing individual research projects. Prerequisite: departmental consent.

Pol. S. 842. Administration in Local Government. (3). Cross-listed as P. Adm. 842. Examination of administrative processes and problems in local government, including the role of the professional chief executive. Examines problems from the following: labor-management relations, program evaluation, county government reform, governmental decentralization, citizen participation, grant-in-aid programs, interlocal cooperation, affirmative action requirements and service contracting. Prerequisite: Pol. S. 317.

Pol. S. 845. Seminar in Political Theory. (3). Detailed study of the relevant works of a major political philosopher and his/her contribution to contemporary thought. Prerequisite: departmental consent.

Pol. S. 851. Seminar in Public Law and Judicial Behavior. (3). Analysis of special problems in and approaches to the study of legal systems. Emphasizes developing awareness of research in the field. Prerequisite: departmental consent.

Pol. S. 856. Seminar in American Politics and Institutions. (3). Analytical study of selected topics in American political behavior emphasizing individual research. Repeatable for credit when content differs substantially. Prerequisite: departmental consent.


Pol. S. 867. State and Local Government Budgeting. (3). Cross-listed as P. Adm. 867. Analysis of the development and utilization of the budgetary process in government administration emphasizing the budget in relation to its role in policy formulation and management. Prerequisite: P. Adm. 865 or instructor's consent.


Pol. S. 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.

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

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


Psychology (Psy.)

Graduate Faculty
Professors: Charles A. Burdsal, Jr. (chairperson), Peter A. Cohen (dean, College of Health Professions), Darwin Dorf, Gary Greenberg (graduate coordinator), Charles Halcomb, Gregory J. Meissen, Elsie R. Shore, James J. Snyder
Associate Professors: Alex Chaparco, Louis J. Medvene, Donald W. Nance, Marilyn L. Turner, Robert D. Zettle
Assistant Professors: Paul D. Ackerman, Darcee Datteri, Rhonda K. Lewis, Daniel S. McConnell

Degrees Offered
The psychology department offers courses of study leading to the Doctor of Philosophy. Students may complete requirements for study in either human factors psychology or community/clinical psychology.

Students in the doctoral program are awarded the master's degree in general experimental psychology upon completion of their second year project.

Admission Requirements
For all students: Appropriate applications for admission should be filed with the dean of the Graduate School and the psychology department by February 1 (community/clinical) or March 1 (human factors) for enrollment the following fall. In addition to the usual application information, the following are required:
1. four letters of reference from people acquainted with the applicant's academic background and potential;
2. a brief autobiographical statement describing particular interests, experiences, and goals related to academic and professional work in psychology; and
3. scores on the Graduate Record Exam (GRE: verbal and quantitative).

Applicants are evaluated with respect to (1) undergraduate grade point average; (2) amount, type, and scope of undergraduate preparation; (3) reference letters; and (4) GRE scores. Applicants are informed of admission or rejection by approximately April 1.

Applications received after February 1 and March 1 are acted on periodically until fall enrollment, with acceptance depending upon the department's graduate teaching capacity.

Prerequisites
Regardless of the program to which the student is applying, for full graduate standing the student must have undergraduate courses in general psychology, psychological statistics, experimental psychology, and systems/theories or history of psychology. Additional program requirements are:

Human Factors: Applicands for this program are expected to have interdisciplinary strengths in the sciences, mathematics, computer technology, and related fields.

Community/Clinical: Applicants for this program are expected to have interdisciplinary strengths in the social sciences, health, and related fields.

Important: For both the community/clinical and human factors programs, interested students who are not psychology majors or who lack specific prerequisites may be provisionally accepted with an opportunity to make up deficiencies.

Degree Requirements
Students should be able to graduate in a nine-year time limit for completing doctoral degree programs. The psychology department expects all degree-bound students to make satisfactory progress toward the completion of their degree programs.

Students in both doctoral programs must complete the following foundations courses: Psy. 812, Biological and Philosophical Foundations of Psychology; Psy 813, Cognitive/Learning Foundations of Behavior; Psy. 814, Personality and Individual Differences; Psy. 815, Social/Developmental Foundations of Behavior; Psy. 810 and 811, Advanced Research Methods I and II.

Students in both programs must complete a pre-doctoral research program (Psy. 911) for a minimum of 10 hours before admission to doctoral candidacy. Students will take a qualifying examination upon completing all required courses. On passing this examination, students can be admitted to doctoral candidacy and begin work on a dissertation. All doctoral degree students are required to complete a dissertation with a minimum of 12 hours of enrollment in Psy. 910. The dissertation will ordinarily be a major research project which must be preceded by approval of a formal written proposal by the student's dissertation committee. In addition to regular course examinations, all students must pass an oral examination based on their dissertation.

Additional program requirements:

Human Factors: Students must complete the following: Psy. 820, Seminar in Human Factors Psychology, Psy. 947, Seminar in Perception; Psy. 921, Psychological Principles of Human Factors; and Psy. 922, Seminar in Software Psychology. Each student must take 24 hours of elective courses, 12 of which will be outside of the human factors program, selected in consultation with his or her advisor. Among the elective courses, at least one must be from among the following: Seminar in Motor and Sensory Processes, Aerospace Psychology, Measurement of Human Performance, Seminar in the Psychology of Learning, Seminar in Environmental Psychology. Students must complete a Research Internship of 3 hours per
semester over a period of two semesters for a total of 16-18 credit hours.

Community/Clinical: Within the 90-hour community/clinical program there are two tracks, a community track and a clinical track. All community/clinical students take the program wide required courses listed above as well as Psy. 830, Seminar in Community/Clinical Psychology. Community track students are required to take three community courses: Psy. 932; Applied Research Methods in Community Settings; Psy. 936, Seminar in Cognitive-Behavioral Therapy. Clinical track students are required to take all three of the clinical courses and two of the three community courses. Community track students take a minimum of 12 hours of practicum (Psy. 932) with at least 3 hours of clinical practicum (Psy. 933). Clinical track students take a minimum of 12 hours of practicum (Psy. 932) with at least 3 hours of community practicum (Psy. 932). One calendar year internship is required for all clinical track students. The remainder of the required 90 graduate hours are electives.

Courses for Graduate/Undergraduate Credit

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

Psxy. 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. 111Q.

Psxy. 512. Primatology. (3). A survey of the primates (including humans) and their behavior. Includes principles of evolution and taxonomy, the evolution of the primates to Homo sapiens, the emergence of language, cognitive functioning, and culture. Prerequisite: Psxy. 111Q.

Psxy. 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 life style and behavior in relation to health and illness. Prerequisite: Psxy. 111Q.

Psxy. 516. Drugs and Human Behavior. (3). General education further study course. A survey of the actions and effects of use of legal and illegal psychoactive drugs, and of the use of prescription drugs in the treatment of psychological disorders. Details social-cultural, personal and situational determinants and consequences of drug use and abuse. Prerequisite: Psxy. 111Q.

Psxy. 522. Biological Psychology. (3). General education further study course. A survey of the biological foundations of behavior. Includes the evolutionary basis of behavior, behavior genetics, a critical analysis of brain-behavior relationships, the role of hormones in behavior, and neurochemical correlates of behavior. Prerequisite: Psxy. 111Q.

Psxy. 524. Advanced Psychology of Personality. (3). More intensive treatment of the topics of psychology of personality emphasizing contemporary theories, research and application of the psychological study of personality. Prerequisite: Psxy. 324Q.

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

Psxy. 532. Psycholinguistics. (3). General education further study course. Cross-listed as Ling. 545. Survey of psychological, linguistic and informational analyses of language. Includes the performance-competence distinction, child development of speech, animal communication systems and the relation of language to thought. Prerequisite: Psxy. 111Q.

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

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


Psxy. 546. Practicum in Applied Behavior Analysis and Social Learning. (3). Placement in local human service agencies for about eight hours a week for 14 weeks. Under supervision, students assist in the development and delivery of services at the agency site. Repeatable once. Prerequisites: Psxy. 536 and instructor's consent.

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

Psxy. 566. Perspectives on Self-Help Groups. (3). Cross-listed as Nurs. 566 and Sc. Wk. 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.

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

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

Psxy. 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.

Psxy. 622. History of Psychology. (3). Traces the development of philosophical and empirical concepts of psychology from the ancient Greeks through the 19th century. Examines the origins and various views of the body-mind relationship. Emphasizes the influences of naturalistic assumptions and research methods on 20th century psychology. Prerequisites: 9 hours of psychology or instructor's consent.

Psxy. 720. 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, airspace skill requirements and training, pilot workload, cockpit control and display systems and aviation safety. Prerequisites: 15 hours of psychology or instructor's consent.

Psxy. 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. 810. Advanced Research Methods I (4). 3R; 3L. Part one of a two-course sequence aimed at advanced treatment of statistical and research design issues. Statistical methods include analysis of variance, analysis of covariance, multiple comparisons, and multiple regression. Design issues include research planning, validity, quasi-experimental designs, prediction vs. explanation, and modeling. The associated lab provides basic computer skills for access to the mainframe and some basic training in SPSS-X, SAS, and BIOMED statistical routines. Prerequisite: instructor's consent.

Psy. 811. Advanced Research Methods II (4). 3R; 3L. Continuation of Psy. 810. Statistical techniques emphasized are a continuation of multiple regression, structural analysis including Path Analysis and LISREL, factor analysis, canonical correlation, and discriminant analysis. Includes advanced design issues. Students carry out research projects as part of the course requirements. The associated lab provides additional computer skills for access to the mainframe and some basic training in SPSS-X, SAS, and BIOMED statistical routines. Prerequisites: Psy. 810 and instructor's consent.

Psy. 812. Biological and Philosophical Foundations of Psychology (3). Develops the idea that psychology is a biobehavioral science. Accordingly, course examines the philosophical foundations of science itself before exploring the biological foundations and contextual nature of psychological science. Readings cover biological factors as they pertain to psychology: evolution, genetics, maturation, functional neuroanatomy, and psychobiology. Includes critical reviews of genetic determinism, neural localization, and hemispheric specialization. Prerequisite: instructor's consent.

Psy. 813. 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 theoretical questions investigated in the psychology of learning and cognition. Provides a basic understanding of classical and instrumental conditioning, and the cognitive processes of memory, language, speech, thought, decision making and problem solving. Prerequisite: instructor's consent.

Psy. 814. Personality and Individual Differences (3). Provides an advanced understanding of the theories and measurement of personality and individual differences. Also discusses the utilization of this information to an applied psychological setting. Prerequisite: instructor's consent.

Psy. 815. 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 applications of theory and research in social-development psychology to the solution of individual and social problems. Prerequisite: instructor's consent.

Psy. 820. 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. 830. 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. Discusses 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. 840. Seminar in Environmental Psychology (3). Explores historical, theoretical, and empirical bases of environmental psychology. Reviews contemporary models of environmental psychology including the ecological, social, community, and human factors perspectives along with a historical review of the field. Includes behavior-environment congruence, person-environment fit, social impact assessment, social policy, and the prevention of psychosocial problems through environmental intervention. Prerequisite: Psy. 815.

Psy. 841. Seminar in Motivation and Emotion (3). Intensive study of theory and research in motivational and emotional processes. Prerequisite: instructor's consent.

Psy. 842. Seminar in Psychology of Learning (3). Intensive study of theory and research in learning processes. Includes the study of principles of individual behavior and some of the variables of which it is a function as illustrated by respondent and operant conditioning along with some areas of application. Prerequisites: Ps. 302 and instructor's consent.

Psy. 843. 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. 111Q and instructor's consent.

Psy. 910. Doctoral Dissertation (1-3). Graded S/U only. Repeatable for credit. Prerequisite: admission to candidacy and instructor's consent.

Psy. 911. Graduate Research (1-3). Individual research. Graded S/U. Prerequisites: advisor's consent and graduate standing.

Psy. 920. 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. 921. Psychological Principles of Human Factors (3). Focuses on the interaction of people with machines and technology in a variety of environments. Provides depth to the topics surveyed in Psy. 386 and serves as a means of integrating cognitive, biological, and perceptual psychology in applied settings. Prerequisite: completion of undergraduate course in cognitive psychology or Psy. 813; and instructor's consent after interview for doctoral students from other disciplines.

Psy. 922. Seminar in Software Psychology (3). Intensive study of principles and methods of engineering psychology (human factors) applies to the design and evaluation of computer software. Topics include 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. 930. 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. Provides differing definitions of psychopathology and paradigmatic approaches to the study of psychopathology. Prerequisite: instructor's consent.

Psy. 931. 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. 932. Internship in Community-Clinical Psychology (1-3). Graded S/U only. A planned placement experience in an off-campus setting, giving the doctoral community-clinical psychology student an opportunity to further develop and apply skills in community-clinical psychology. Repeatable for a maximum of 6 hours. Prerequisite: advisor's consent.

Psy. 933. Practicum in Clinical Psychology (3-6). Gives the student further experience in developing clinical skills. Students are supervised in their clinical work with individual clients seen through the department clinic, and/or other appropriate sites. Graded S/U only. Prerequisite: instructor's consent.
Psy. 934. Practicum in Community Psychology. (1-3). Provides supervised practice in community-based organizations or such tasks as needs assessment, program development, and program evaluation. Organizational settings may be in the areas of mental health, health, and education. Services may be prevention-oriented. Repeatable for credit. Graded SU/only. Prerequisite: instructor’s consent.

Psy. 935. Seminar in Cognitive-Behavioral Assessment. (4). Surveys issues of reliability and validity; provides description, critical analysis and practice in clinical use of such psychological assessment methods as interviewing, observation, self-report and standardized intelligence and personality tests. Focuses upon comprehensive clinical assessment, including integration and reporting of assessment data for treatment planning. Prerequisite: instructor’s consent.

Psy. 936. Seminar in Cognitive-Behavior Therapy. (4). Reviews the theoretical and empirical support for specific behavior therapeutic practices. Approaches may include systematic desensitization, flooding, contingency management techniques and aversive therapies. Also discusses the interface between behavioral assessment and clinical practice. Prerequisite: instructor’s consent.

Psy. 937. Seminar in Community and Organizational Intervention. (4). SR: 3L. 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, clinical psychology, public health, public health psychology, 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 implementors, and program managers. Prerequisite: instructor’s consent.

Psy. 938. 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. Includes primary prevention, empowerment, community-based prevention, self-help, social policy, and the prevention of psychosocial problems through environmental intervention. Prerequisite: instructor’s consent.

Psy. 940. 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. 941. Measurement of Human Performance. (3). The logic of fundamental measurement is developed and applied to human performance from detection to decision. Signal Detection Theory (SDT) is developed and compared with threshold theory. Demonstrates procedures for assessing both detection and discrimination under both SDT and threshold theory. Information, measurement and utility theory is developed and applied to the transmission and coding of information and to decision making respectively. Examines measures of work reliability and well-being. Prerequisite: instructor’s consent.

Psy. 942. Seminar in Behavioral Development. (3). A critical analysis of the concept of development and of theories of behavioral development. Begins with a review of the concept of integrative levels and proceeds to a discussion of modern evolutionary thought. Examines the concept of development from psychological, biological, and anthropological perspectives. Prerequisite: instructor’s consent.

Psy. 943. Seminar in Comparative Psychology. (3). Intensive study of general principles of behavior origins and development. Oriented around the evolution and development of behavior. Includes a review of the concept of integrative levels in psychology. Prerequisites: Psy. 502Q and instructor’s consent.

Psy. 944. Seminar in Consultation. (3). Examines theories and techniques of psychological consultation as applied to individuals, organizations, and systems. Prerequisite: instructor’s consent.

Psy. 945. 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. 946. Seminar in Motor and Sensory Processes. (3). Focuses on the interface between human sensory and motor systems. Covers the sensory, motor, cognitive, and affective processes as related to human factors psychology. After a review of the anatomy and physiology of sensory-motor systems, emphasizes contemporary research and literature regarding the interface of sensory-motor processes. Prerequisite: instructor’s consent.

Psy. 947. Seminar in Perception. (3). Intensive study in theory and research in perceptual processes. Prerequisites: Psy. 332, or equivalent, and instructor’s consent.

Public Administration
See Urban and Public Affairs, Hugo Wall School of.

Religion (Rel.)

Graduate Faculty
Associate Professor: Stuart Lasine

Although there’s no graduate program in religion, the following courses may be taken for graduate credit.

Courses for Graduate/Undergraduate Credit

Rel. 750. Workshop in Religion. 0-4.

Rel. 790. Independent Study. (1-3). For the student who is capable of doing graduate work in a specialized area of the study of religion not formally offered by the department. Repeatable for credit. Prerequisite: departmental consent.

Russian
See Modern and Classical Languages and Literatures

Social Work (Sc. Wk.)

Graduate Faculty
Assistant Professors: Brien Bolin, Linnea Flynn, Glen Maye, Cathleen A. Lewandowski (director and graduate coordinator)

Master of Social Work

The Master of Social Work (MSW) degree program has an emphasis in advanced generalist practice and is designed for people who are interested in entering the social work profession at an advanced professional level.

MSW Program Mission

The mission of the MSW program at Wichita State University is to prepare its graduates to be autonomous advanced generalist social work practitioners within complex diverse and ever-changing metropolitan environments. Emphasis is placed on developing knowledge and skills for ethical, culturally competent and socially just and empowering interventions on all practice levels.

Accreditation Status

WSU's MSW program is in candidacy for accreditation through the Council on Social Work Education. Interested individuals are encouraged to contact the School of Social Work, (316) 978-7250, for current information on accreditation status.

Licensure

In 1999, the School of Social Work submitted their curriculum and accreditation materials to the Behavioral Sciences Regulatory Board (BSRB) of Kansas for review. Based on this review, graduates of the MSW program are eligible to sit for Kansas' licensure exam. Interested individuals are encouraged to contact the School of Social Work or BSRB for further information on social work licensure.

Admission Requirements

Admission to the MSW program requires that the applicant:

1. Have a baccalaureate degree from an accredited four-year institution(s) acceptable to the Graduate School.
2. Have evidence of a strong liberal arts background from an accredited college or university prior to enrollment. Applicants should be knowledgeable about diverse cultures; social problems; social conditions; and the social, psychological, and biological determinants of human behavior. Previous course work should include a solid background in the liberal arts, as evidenced on the transcript by courses in the humanities (2), behavioral and social sciences (3), oral communication (1), written communication (2),
human biology (1), analytical skills (1), and human diversity (1). Examples of courses in each area are provided in the admissions materials.

3. Have a cumulative undergraduate grade point average of 3.00 or better.

Non-academic Factors for Admission
Non-academic considerations include experiences in providing social services, references, and personal narratives. Measures of volunteer as well as paid service, social service contributions to candidate rankings. References are primarily asked to provide an indication of the applicant’s suitability for entrance into the profession. Indicators of readiness for graduate studies and of suitability for the profession are drawn from descriptions of life experience, motivation, career goals, and values as described in the applicant’s personal statement and letters of reference.

Admission Procedure
To be reviewed for admission, applicants should do the following:
1. Request an application packet from the School of Social Work.
2. Submit to the Graduate School the designated Application for Admission and supporting transcripts.
3. Submit to the School of Social Work by February 1 a completed MSW application, including a personal statement, three letters of reference, and documentation of academic work and professional training.

As described in the application materials, applicants should submit their reference letters in sealed envelopes along with their completed MSW application to the School of Social Work. Applicants should be aware that their records can only be reviewed when all materials have been submitted and they have met eligibility requirements. Applicants will be notified of their admission status by the Graduate School.

Advanced Standing
The School of Social Work Education offers an advanced standing program. Interested applicants must have an undergraduate degree in social work from a social work program that is accredited by the Council on Social Work Education. Advanced standing students will complete 32 credit hours—29 credits comprising the advanced generalist concentration curriculum and 3 credit hours for a bridge course to be taken during the summer before beginning the concentration curriculum.

Full- and Part-Time Enrollment Options
Applicants choose to apply for either the full-time or the part-time track. Applicants admitted into the full-time program enroll in four full-time semesters, consisting of 12-16 hours a semester, not counting summer semester. Applicants admitted into the part-time program must enroll in 6-9 credit hours a semester, with the exception of summer semester, and complete the degree within four years. Courses are sequential and are generally offered once a year. Applicants should contact the School of Social Work for further information on the part-time curriculum plan.

Field Practicum Requirements
In addition to classroom work, students enroll in field practicum. The foundation year practicum consists of 460 clock hours over the course of two semesters. The advanced generalist concentration practicums consist of 600 clock hours over the course of two semesters, for a total of 1,080 clock hours. The MSW program’s Field Practicum Director makes arrangements for field practicum placements.

Transfer of Academic Credit
Transfer of credits from another MSW program will be considered on a case by case basis. As a general rule, only courses taken in a Council on Social Work Education accredited MSW program will be eligible for transfer of credits. The applicant must have received a B or better in the course(s) being considered for transfer. In most instances, transfer of credits will only be granted for first-year foundation courses or electives, if applicable to Wichita State University’s advanced generalist social work program. Students may transfer up to 6 elective hours from other graduate programs in related fields, if applicable to the advanced generalist specialization and/or content is comparable to WSU’s elective courses outside the Social Work Program. Transfer of elective credit hours must be approved by the assigned advisor and the director of the MSW program at the time of admission to the MSW program.

Life Experience
In accordance with Council on Social Work Education accreditation requirements, academic credit will not be given for life experience or work experience in course work or field practicum.

Nondegree Students
Students wishing to enroll in graduate social work courses for continuing education may do so on a space available basis. Nondegree students who then decide to pursue an MSW degree at Wichita State University must go through the normal admitting procedures. A maximum of 6 credit hours taken prior to admission to the MSW program can be applied toward the MSW program. Nondegree seeking students who do not have a BSW degree from a CSWE accredited program may not enroll in social work practicum classes. Only students admitted into the MSW program may enroll in field practicum courses.

Degree Requirements
The curriculum for the regular MSW program consists of 56 credit hours, 42 credits of classroom work, and 14 credits of supervised practicum. The curriculum for the advanced standing program consists of 32 credit hours, 24 credits of classroom work, and 8 credits of supervised practicum. Students must maintain a 3.00 grade point average; a grade of C is the minimum passing grade.

Courses for Undergraduate/Graduate Credit
Sc. Wk. 500. Social Welfare Development and Policy Analysis. (3). Provides development of analytical frameworks for understanding the processes of policy formation, factors shaping policy decisions, the content of program designs, and the performance of social welfare policy and service programs. Voluntary and proprietary systems are examined in the development of knowledge and skills for the engagement of complex community resources, the promotion of service innovations, and in the shaping of decisions in the arenas of public policy. Emphasis is placed on diverse populations in metropolitan environments. Prerequisites: Pol. S. 121Q or Hist. 132Q, Sc. Wk. 300Q.

Sc. Wk. 502. Social Work Practice: Strategies and Techniques. (4). Introduces the study and practice of interpersonal professional interaction skills within the framework of a social work helping process. Focuses on developing skills in professional observation, communication, interviewing, recording, and reporting. Course is didactic as well as interactive and includes an integrated laboratory component which focuses on experiential learning. Required for social work majors. Prerequisite: program admission.

Sc. Wk. 541. Women, Children, and Poverty. (3). Cross-listed as Wom. S. 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 to poverty among women in Kansas. Prerequisites: 6 hours of social science preferably in women’s studies, including Wom. S. 300Q, or instructor’s consent.

Sc. Wk. 551. Independent Studies. (1-5). 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.

Sc. Wk. 560. Person in Society I. (3). Provides a beginning theoretical framework within which the integration of prior knowledge can be made regarding physical, mental and social development of the human being, perspectives on American culture and subcultural variations and their effect on human adaptability in the social environment, and the relationship of those entities to beginning professional social work practice. Prerequisites: 6 hours from a list of social and behavioral science courses approved by the social work faculty and selected in consultation with a social work advisor.

Sc. Wk. 561. Person in Society II. (3). Explores theories and perspectives which explain human behavior in groups, organizations, and communities. Includes application of systems theory to macro and mezzo systems, social interaction theories, group and family dynamics, majority/minor-
Sc. Wk. 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.

Sc. Wk. 601. Advanced Social Work Practice. (3). Advanced practice theory emphasizing becoming both knowledgeable and skillful in applying theory to practice. Focuses on developing a clear understanding of concepts, principles, techniques and processes of social work methods as they relate to individuals, families and groups and to the larger community. To be taken concurrently with Sc. Wk. 602 except by program consent. Prerequisites: Sc. Wk. 502 and program consent.

Sc. Wk. 602. Practicum I. (4). Placement in community social welfare agencies for supervised periods of observation and direct service assignments emphasizing performance of basic practice skills and understanding of the social welfare agency and its role in the community service network. To be taken concurrently with Sc. Wk. 601 except by program consent. Prerequisites: Sc. Wk. 502 and program consent.

Sc. Wk. 603. Generalist Practice II. (3). Focuses on developing generalist social work practice knowledge and skills at the group, organizational, and community levels. Presents macro practice roles and skills and links to group and individual practice skills for beginning-level social work interventions with systems of all sizes. Must be taken concurrently with Sc. Wk. 605. Prerequisite: Sc. Wk. 601.

Sc. Wk. 610. Topics in Social Work. (1-3). Selected topics in practice, policy, research, and human behavior in the social work environment within a selected field of social welfare. This course covers specific topics identified by the program in consultation with majors, groups of community practition-ers, and area service institutions. Repeatable. Prerequisite: instructor or program consent.


Sc. Wk. 702. Foundations of Generalist Practice II. (3). Provides continued social work practice foundation content with an emphasis on developing generalist knowledge and skill at the group, organizational, community and societal levels. It 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. Prerequisite: Sc. Wk. 701 or instructor’s consent.

Sc. Wk. 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.

Sc. Wk. 715. Social Welfare Policy 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.

Sc. Wk. 716. Social Welfare Development. (3). Critical examination of the history of American social welfare institutions, policies, and the social work profession as a context for understanding contemporary social policy issues. Provides students with the knowledge and skills needed to effectively enact policy in practice with clients, and develop social policy both within their agencies and in the larger political arena. Students will develop an appreciation for the profession's ethical commitment to promote social justice and the general welfare of society, and to improve social institutions to meet basic human needs. Prerequisite: program approval.

Sc. Wk. 720. Field Practicum I. (3). Placement in community social welfare agencies for supervised periods of observation and direct service assignments emphasizing development of basic practice knowledge and skills. Includes developing understanding of the social welfare agency and its role in the community service network. Corequisite: Sc. Wk. 700.

Sc. Wk. 721. Field Practicum II. (3). Requires placement in community social welfare agencies for supervised periods of observation and direct service assignments emphasizing development of basic practice knowledge and skills. Promotes an understanding of the social welfare agency and its role in the community service network. Corequisite: Sc. Wk. 702.

Sc. Wk. 750. Social Work Workshops. (0-3). Specialized instruction using a variable format in a social welfare relevant subject. Course may be offered together with Sc. Wk. 150. Prerequisite: instructor's consent.

Sc. Wk. 751. Fundamentals of Social Work Research. (0). Provides an introduction to the components of quantitative research design, and how research is designed to conduct studies which seek to improve social work practice. The course introduces the basic concepts of the social work research process as well as the methods that are employed. Students will also develop a framework for critically evaluating methods employed in current social work research and the potential benefits of applying these research findings to social work practice. Prerequisite: program approval.

Sc. Wk. 760. Advanced Standing Seminar. (3). Builds upon the advanced standing student's knowledge, experience, and skills by integrating social work theory, values, ethics, methodology, and literature. Based in the generalist perspective. Prepares students for the advanced generalist practice course work in the MSW program.

Courses for Graduate Students Only

Sc. Wk. 811. Cultural Competency for Advanced Generalist Practice. (3). Examines the impact of culture, race, and ethnicity on clients/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. Prerequisite: program consent.

Sc. Wk. 816. Advanced Generalist Practice with Multiple Systems. (3). Provides a critical examination of theories of practice relevant for advanced generalist practice across
systems. Theories included address the biological, psychological, social, and spiritual dimensions of human behavior. Emphasizes theories applying to social work intervention with individuals, family systems, and small groups. Prerequisite: program consent.

Sc. Wk. 817. Community Empowerment and Social Administration. (3) Provides students with advanced generalist knowledge and skills for organizing and empowering communities and managing community-based organizations. Examines the history, strategies, and approaches relevant to community organizing. Focuses upon intervention and administrative skills to meet organizational and community needs. Emphasizes understanding the particular needs of minority communities. Prerequisite: program consent.

Sc. Wk. 822. Field Practicum III. (4) Placement in community social welfare 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 300 hours of agency service. Prerequisite: program consent.

Sc. Wk. 823. Field Practicum IV. (4) Continuation of Sc. Wk. 822. Requires 300 hours of agency service. Prerequisite: program consent.

Sc. Wk. 851. Applied Social Work Research. (3) Provides students to be ethical practitioners who assess the benefits of social work interventions on an ongoing basis. Because of the importance of evaluation is social work, students develop the research skills needed to evaluate their own practice, conduct program evaluations, use the computer as a research tool, and interpret descriptive and inferential statistics. Prerequisite: Sc. Wk. 751 or program consent.


Sc. Wk. 870. Clinical Assessment for Advanced Generalist Practice. (3) Uses a biopsychosocial perspective to understand problematic patterns of functioning identified as diagnoses in the DSM-IV. Students will critically examine the DSM-IV as a basis for social work assessment and will learn its use within an advanced generalist practice perspective. Prerequisite: school consent

Sociology (Soc.)

Graduate Faculty

Associate Professors: Kathleen O'Flaherty Perez, Ronald R. Matson (chairperson), David W. Wright (graduate coordinator)
Assistant Professors: Twyla J. Hill, Charles S. Koeber, Sandra J. Rezac, Victor T. Wynn

Master of Arts

The sociology department offers courses of study leading to the Master of Arts (MA) degree with options for thesis and nonthesis programs.

Admission Requirements

In addition to the Graduate School requirements for admission, the Department of Sociology requires: 1) one college algebra course and at least 15 hours in sociology including introductory sociology course, one descriptive and inferential statistics course, two research methods courses, and one theory course (similar courses in other fields of study may be substituted at the discretion of the graduate coordinator); 2) three letters of reference from professors who are familiar with the student's undergraduate course work; and 3) a typed, double-spaced statement of purpose (approximately 500 words) articulating the student's area of research interests and academic/career goals.

Degree Requirements

Students pursuing the MA degree in sociology may follow either a thesis or a nonthesis program.

Thesis Program. Students in the thesis program must take a total of 32 hours, including Soc. 860, Proseminar-Teaching Sociology; Soc. 801, Application of Advanced Statistical Techniques; Soc. 812, Advanced Research Methods; Soc. 845, Seminar in Sociological Theory; and two 800-level graduate seminars as well as completion of their thesis hours. Sixty percent of the 32 hours must be 700 level or above.

Nonthesis Program. Students in the nonthesis program must take a total of 36 hours, including Soc. 860, Proseminar-Teaching Sociology; Soc. 801, Application of Advanced Statistical Techniques; Soc. 812, Advanced Research Methods; Soc. 845, Seminar in Sociological Theory; and two 800-level graduate seminars. Soc. 851, Directed Research, is needed to fulfill this requirement. A total of 60 percent of the 36 hours must be 700 level or above.

Examinations

Students electing the thesis program in sociology must pass an oral defense of the thesis.

Courses for Graduate/Undergraduate Credit

Soc. 501. Sociological Statistics. (3) Generally offered fall semester only. Application of descriptive and inferential statistics to sociological problems. Includes measures of central tendency, dispersion and association, simple linear regression, hypothesis testing and analysis of variance. Prerequisites: Soc. 111Q, Soc. 312, Math. 111 or 331Q or equivalent.

Soc. 512. Measurement and Analysis. (4) Generally offered in the spring only. An applied study of the conceptual tools and methodological skills needed to conduct quantitative sociological research. Prerequisites: Soc. 111Q, 312, 501.
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 111Q.

>Soc. 539. Juvenile Delinquency. (3). General education further study course. The factors related to juvenile delinquency and the measures of treatment and prevention. Prerequisite: Soc. 111Q.*

Soc. 540. Criminology. (3). The extent and nature of criminal behavior and societal reactions to it. Prerequisite: Soc. 111Q.*

Soc. 541. Contemporary Corrections. (3). Historical and contemporary programs for the treatment of offenders viewed as societal reactions to criminal behavior. Prerequisite: Soc. 539 or Soc. 540.*

Soc. 545. Sociological Theory. (3). Generally offered fall semester only. A comprehensive survey of sociological theory, spanning both classical and contemporary theorists relevant to the development of sociology. Prerequisites: 9 hours of sociology.

Soc. 598. Internship. (1-6). Supervises persons involved in internships or placements in the community where credit can be given. Prerequisite: departmental consent.

Soc. 600. Selected Topics in Sociology. (3). Study in a specialized area of sociology emphasizing student research projects. Includes deviant behavior, political sociology, the family and others. Repeatable for a maximum of 6 hours credit. Prerequisites: Soc. 111Q, instructor's consent, and substantive area course.

Soc. 651. Directed Research. (3). Gives the student further research skills in an area of special interest. All students are under the direction of a member of the graduate faculty who guides them in developing research skills. Prerequisites: Soc. 512 or equivalent and instructor's consent.

Soc. 670. Independent Reading. (1-3). For the advanced student capable of doing independent work in an area of special interest. Prerequisites: 15 hours of sociology and instructor's consent.

Soc. 750. Sociology Workshop. (1-3). Provides specialized instruction using a variable format, in a sociologically relevant subject.

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. Graded Cr/NCr only.

Courses for Graduate Students Only

Soc. 801. Application of Advanced Statistical Techniques. (3). Usually offered in the fall only. Seminar demonstrates the application of statistical packages via mainframe and personal computers to analyze data and interpret the output. Examines statistical tests from univariate to multivariate. Prerequisite: Soc. 501 or departmental consent.

Soc. 812. Advanced Research Methods. (3). Through classical and contemporary readings, graduate students deepen their understanding of the methodological steps of the research process. Students address methodological issues while conducting a research project using design methodologies, sampling practices, and measurement strategies. Prerequisite: Soc. 512 or departmental consent.

Soc. 815. Seminar on the Family. (3). Review of recent research on the family and the theoretical implication thereof. Prerequisite: Soc. 515 or departmental consent.

Soc. 820. Seminar in Social Movements. (3). Analyzes the elements in social movements as factors in social and cultural change. Prerequisite: departmental consent.

Soc. 822. Seminar in Deviant Behavior. (3). In-depth examination of recent theory, methods, and research in the area of deviance. Includes implications of future theory development. Prerequisite: departmental consent.

Soc. 825. Seminar in Organizational Analysis. (3). Explores selected problems in organizational theory based on major theoretical and empirical approaches, both classical and contemporary. Prerequisite: departmental consent.

Soc. 830. Seminar in Stratification and Power Structure. (3). Examines different theoretical and methodological approaches to understanding stratification and class analysis. Prerequisite: departmental consent.

Soc. 834. Seminar in Urban Sociology. (3). Through classical and contemporary readings, course examines issues and concerns of countries in the process of urbanization. Prerequisite: Soc. 534 or departmental consent.

Soc. 845. Seminar in Sociological Theory. (3). Usually offered in the spring only. Examines classical and contemporary sociological theories, and focuses on including the application of such theories in students' thesis and non-thesis projects. Prerequisite: Soc. 545 or departmental consent.

Soc. 847. Seminar in Recent Developments in Sociology. (3). Major issues, new theories, new techniques of research, new areas of research, and new applications. Repeatable for credit but not to exceed 6 hours. Prerequisites: 15 hours of sociology and departmental consent.

Soc. 851. Directed Research. (1-3). For the advanced student who wants to achieve research competence in a specific area. Each student is directed by a member of the graduate faculty in the development of a project in research not leading to thesis research. Prerequisites: Soc. 812 and instructor's consent.

Soc. 860. Proseminar—Teaching Sociology. (1). Usually offered in the fall only. Examines the academic role of sociologists. Prerequisite: departmental consent.

Soc. 870. Independent Reading. (2-3). Advanced systematic reading in a topical area under the supervision of a member of the graduate faculty. Repeatable for credit not to exceed 6 hours. Prerequisite: departmental consent.

Soc. 875-876. Thesis. (3-6).

Spanish

See Modern and Classical Languages and Literatures.

Urban and Public Affairs,
Hugo Wall School of

The Hugo Wall School of Urban and Public Affairs attracts faculty, staff, students, and practitioners dedicated to enhancing the quality of public affairs in their communities, state, and nation. 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, and the region.

The school serves as the academic home for the Master of Public Administration degree, the Center for Urban Studies, and the Kansas Public Finance Center. Through these units, faculty, staff, and students blend teaching, research, and service in the interdisciplinary field of urban and public affairs. The Hugo Wall School offers special opportunities for students interested in urban and public affairs. Students completing the Master of Public Administration degree gain experience through hands-on research and network with practitioners in the field of public administration.

The Hugo Wall School is committed to enhancing the quality of public life through high-quality graduate instruction, excellence in applied research, and responsive community service. This focus results not only in an excellent graduate education for students, but allows a special connection with the community's needs through research and service.

Financial Assistance

The school has two forms of financial aid available to provide students with financial assistance, as well as an opportunity to be directly involved with research and service projects. Financial aid in the form of graduate assistantships and fellowships is awarded competitively on the recommendation of the faculty in the Hugo Wall School of Urban and Public Affairs. Graduate assistants aid faculty in the Hugo Wall School in instruction, as well as work directly with faculty and professional staff on research and community service projects through the Center for Urban Studies and the Kansas Public Finance Center. Graduate assistants work 20 hours per week with faculty/staff in the school's teaching, research, and public service activities.

The Hugo Wall School has three endowed fellowships available for financial assistance to qualifying
graduate students enrolled in the Master of Public Administration degree. These fellowships—the Hugo Wall, George Pyle, and George Van Ripper—are awarded on a competitive basis to students with exemplary records and specific career interests in the field of public administration.

**Public Administration (P. Adm.)**

Graduate Faculty

**Regents Distinguished Professor of Public Finance:** W. Bartley Hildreth

**Professors:** H. Edward Flentje (director), Hugo Wall and Center for Urban Studies), Mark A. Glaser, Joseph P. Pisciotte, Samuel J. Yeager (graduate coordinator)

**Associate Professors:** Nancy McCarthy Snyder, John D. Wong

**Master of Public Administration**

The Master of Public Administration (MPA) degree program, with instruction in public management, public finance, and public policy, prepares students for positions of leadership in public and nonprofit organizations. The degree is structured to respond to the unique student body of an urban university.

The Master of Public Administration (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.

Nearly 300 graduates of the MPA degree program now hold positions of responsibility in state and local government and in nonprofit agencies throughout the U.S. 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**

Applicants for the degree program must meet the requirements for admission to the Graduate School, including a bachelor's degree from a regionally accredited institution, a grade point average of at least 2.730 based upon the last 60 hours of course work (or nearest semester or term break to this) including any post-bachelor's graduate work. In addition, students should be familiar with basic microcomputer applications such as word processing and spreadsheets.

International students must attain a minimum score of 600 on the Test of English as a Foreign Language (TOEFL).

**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:

- P. Adm. 702, Research Methods in Public Administration
- P. Adm. 710, Public Sector Organizational Theory and Behavior
- P. Adm. 725, Public Management of Human Resources
- P. Adm. 745, The Environment of Public Administration
- P. Adm. 765, Public Sector Economics
- P. Adm. 802, Applied Statistics for Public Sector Professionals
- P. Adm. 865, State and Local Government Finance
- P. Adm. 895, Public Decision Making

**Areas of Specialization.** In addition to the core, students develop an area of specialization approved by an advisor. Students may select areas that fit their career interests. Common areas of specialization are state and local government management, financial management, and policy analysis.

**Internships**

Internships are an important part of the MPA program. Pre-service students are encouraged to take an internship which must last at least nine months. Internship (P. Adm. 890) carries 3 hours of credit and includes attendance at periodic seminars. Intern positions are remunerative on a competitive basis. Although placement cannot be guaranteed, the public administration program has an excellent placement record.

**Courses for Graduate/Undergraduate Credit**

- P. Adm. 501. Integrity in Public Service. (3). Cross-listed as CJ 501, Geront. 502, and Eth. S. 301. Exposes the student to basic principles of personal and professional integrity and how those principles apply to their daily life as a member of the community and as an employee of a government or social service agency. Emphasizes 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.

- P. Adm. 550. Workshop. (3). Specialized instruction using variable format in relevant urban and public affairs subjects. Repeatable for credit up to 6 hours.

- P. Adm. 560. The Planning Process. (3). Cross-listed as Pol. S. 560. 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.

- P. Adm. 564. Comparative Public Administration. (3). Cross-listed as Pol. S. 564. Studies the administrative system of selected developed and developing countries emphasizing the various methods and approaches of comparative analysis and the relationships between administrative institutions and their environmental settings.


- P. Adm. 621. Environmental Law. (3). Cross-listed as CJ 621 and Eth. S. 621. An in-depth analysis of emerging federal, state, and local legislation; judicial decisions, and administrative policies in environmental protection. Explores the roles of a variety of governmental agencies and nongovernmental organizations as related to prevention and enforcement processes of environmental protection. Includes issues in the development and implementation of environmental policy. Prerequisite: an approved methods class.


- P. Adm. 651. Dispute Resolution. (3). Cross-listed as CJ 651, Geront. 651, and Eth. S. 651. Examines a range of topics including causation, typologies, communications, mediation, arbitration, and other dispute resolution techniques. Includes criminal and victim mediation and both inter- and inter-organization relations and dispute resolution techniques, and analysis of case studies.

- P. Adm. 668. 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. 201Q and 202Q, or Econ. 800, and junior standing.

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

P. Adm. 710. Public Sector Organizational Theory and Behavior. (3). Cross-listed as Pol. S. 710. Reviews the scope of the field of public administration including a survey of key concepts and schools of thought underlying the field, and examines issues shaping the future development of the field.

P. Adm. 725. Management of Human Resources. (3). Cross-listed as Pol. S. 725. Surveys the major areas of management of human resources in the public sector. Includes hiring, training, evaluation, and pay promotion policies. Special emphasis on 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.

P. Adm. 745. The Environment of Public Administration. (3). Surveys the political and governmental institutions that underlie the practice of public administration. Includes political systems, constitutional authority, legislative process, intergovernmental relations, and government regulation.

P. Adm. 750. Public Administration Workshops. (1-3). Specialized instruction using variable format in a public administration or urban affairs relevant subject. Repeatable for credit.

P. Adm. 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.

P. Adm. 765. Public Sector Economics. (3). Cross-listed as Econ. 765. An analysis of fiscal institutions and decision making in the public sector of the American economy, budget planning and execution, taxation, debt, and fiscal policy. Prerequisites: Econ. 20Q and 20Q or instructor's consent.

P. Adm. 775. State and Local Government Law. (3). Exposes students to the legal principles which undergird the foundation of governmental operation and administration.

P. Adm. 798. Independent Study. (1-3). For graduate students to pursue research in areas not normally covered in course work. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

Courses for Graduate Students Only

P. Adm. 802. Quantitative Methods for Public Sector Professionals. (3). Cross-listed as CJ 802 and Geon. 804. 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. Prerequisite: either CJ 702, Geon. 702, or P. Adm. 702.

P. Adm. 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.

P. Adm. 842. Administration in Local Government. (3). Cross-listed as Pol. S. 842. Examination of administrative processes and problems in local government, including the role of the professional chief executive. Examines problems from the following: labor-management relations, program evaluation, county government reform, governmental decentralization, citizen participation, grant-in-aid programs, interlocal cooperation, affirmative action requirements and service contracting. Prerequisite: Pol. S. 317.

P. Adm. 845. Public Policy Analysis and Program Evaluation. (3). Cross-listed as CJ 797. 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.

P. Adm. 865. State and Local Government Finance. (3). Cross-listed as Pol. S. 865 and Econ. 865. An analysis of state and local government expenditure and revenue systems, with an introduction to state and local financial administration. Prerequisites: P. Adm. 765 or instructor's consent.

P. Adm. 866. State and Local Financial Systems. (3). Deals with selected aspects of state and local government financial management. Introduces fund accounting, costing of government services, capital budgeting, and asset management. Prerequisite: P. Adm. 865 or instructor's consent.

P. Adm. 867. State and Local Government Budgeting. (3). Cross-listed as Pol. S. 867. Analyzes the development and utilization of the budgetary process in government administration emphasizing the budget in relation to its role in policy formulation and management. Prerequisite: P. Adm. 865 or instructor's consent.


P. Adm. 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 P. Adm. core courses and 6 hours of additional graduate credit courses.

P. Adm. 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.

P. Adm. 897. Advanced Research Methods. (3). Cross-listed as CJ 897 and Geon. 897. Advanced research course; studies the selection and formulation of research problems, research design, hypothesis generation, scale construction, sampling procedures and data analysis and interpretation. Prerequisite: either CJ 597, Geon. 597, Eth. S. 597, P. Adm. 597, or equivalent, and P. Adm. 702 and 802.

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

Women's Studies (Wom. S.)

Graduate Faculty

Professor: Carol Konek
Associate Professors: Gayle Davis, Deborah Gordon, Ramona Liera-Schwichtenberg, Dorothy C. Miller (Director)

Students may earn a master's degree in several areas with an emphasis in women's studies. These include curriculum and instruction; counseling, educational, and school psychology; sociology; and cross-cultural communications. Women's studies may be included as one of two or three areas of interest under the MA degree in liberal studies, an individually designed, interdisciplinary graduate program (described in the Fairmont College of Liberal Arts and Sciences, Liberal Studies section of the Graduate Bulletin). In other areas, such as the com-munity/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

Wom. S. 511. Women in Early America, 1600-1835. (3). General education further study course. Traces women's contributions and experiences in building the U.S. from 1600 to the 1830s. Includes both conventional and newly developed methodologies in women's history research.
Present. (3).

Examines the history of women in the U.S. from 1830 to the present. Focuses especially on women's involvement in various social reform activities, efforts which eventually led to work toward equal rights and improved conditions for women.

Wom S. 516. Sociology of Gender Roles. (3). Cross-listed as Soc. 516. Analyzes the institutional sources of man's and woman's roles, the source of changes in these roles, the consequent ambiguities and conflicts. Prerequisite: Soc. 111Q.

Wom S. 521. Women's Traditional Arts. (3). Surveys various art forms which are usually identified as the creative work of women. Using such examples as quilts or other textile arts, students focus not only on the aesthetics of these traditional forms, but also on their historic and social value to the culture.

Wom S. 522. Contemporary Women's Art. (3). Examines art by women in the contemporary world. Special attention to the impact of the women's movement on the creative energies and on the career directions and opportunities of these women in the arts.

Wom S. 533. 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. Prerequisite: 3 hours of upper-level humanities or 3 hours of upper-level women's studies.


Wom S. 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.


Wom S. 535. Literary Images of Women: Diverse Voices (3). Cross-listed as Eng. 535. Examines literature written in English by women of diverse ethnic, racial, and other backgrounds as well as of varying social orientations, ages and degrees of physical ability. Analyzes materials as literary works and as expressions of women's differences from one another. Works are selected based on their specific attention to the question of gender as it intersects with other elements of culture. Prerequisite: Eng. 101, 102, and one course in literature.

Wom S. 536Q. Writing by Women. (3). Cross-listed as Eng. 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.

Wom S. 537. Contemporary Women's Drama. (3). Cross-listed as Eng. 537. Examines contemporary plays by and about women to discover and explore the insights of the various playwrights into the lives and roles of women. Writers considered vary. In addition to reading and analyzing plays, students write plays of their own. Prerequisites: Eng. 101 and 102 and 3 hours of English literature.

Wom S. 541. Women, Children and Poverty. (3). General education issues and perspectives course. Cross-listed as Soc. Wk. 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 to poverty among Kansas families. Prerequisites: 6 hours of social science preferably in women's studies, including Wom. S. 287Q.

Wom S. 542. Gender in Other Cultures. (3). Cross-listed as Anthr. 542.

Wom S. 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's 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.

Wom S. 570. Directed Readings. (1-3). For students who wish to pursue special reading or research projects not covered in course work. Prerequisite: instructor's consent.

Wom S. 580. Special Topics. (1-3). Focuses on advanced topics of interest to women's studies.

Wom S. 586. Gender, Race, and Knowledge. (3). General education issues and perspectives course. Examines the impact of gender and race on knowledge (understanding) of objects, people, events, and activities. Assumes that gender, race, and knowledge are socially constructed categories. Concerned with science as a practice of representation. Focuses on the "white masculinist" ideas or beliefs that motivate and affect the practice of academic disciplines. Considers: What is the relationship between the making of masculinity and femininity and science? How are gender and race woven into science and social science, and what are their effects? For white women and people of color into the sciences and humanities, how are they practiced? Do they produce significantly different understandings about the world? Central premise is that all knowledge emerges from some type of love or passion. What types of passion produce knowers, knowing, and the known?

Wom S. 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. Prerequisites: Wom. S. 387Q and 388Q; or 6 hours of women's studies courses, or instructor's consent.

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

Courses for Graduate Students Only

Wom S. 670. Directed Readings. (2-3). For graduate students to pursue research in areas not normally covered in course work. Repeatable for credit with departmental consent. Prerequisite: instructor's consent.

Wom S. 880. Seminar in Women's Studies. (3). Intensive study of selected women's studies topics. Seminar discussion, reports and research project. Previous topics include Advanced Theories of Feminism and Contemporary Women's Fiction. Repeatable for credit with departmental consent. Prerequisite: instructor's consent.

The following abbreviations are used in the course descriptions: Lecture: L; Laboratory: LAB; General education further study course: G; Liberal Education Further Study: L; Liberal Education Perspectives: L; Perspectives: P; General Education Further Study: G; and Liberal Education Perspectives: L.
Graduate Faculty 2001-2002

Full Membership

Date or dates following title refer to time of initial and successive appointments. Faculty listed have academic rank.


Ahmed, Ikramuddin, Assistant Professor, Mechanical Engineering (2000). BSME, Bangladesh University of Engineering and Technology, 1988; MSME, University of Texas-Austin, 1993; PhD, 1997.

Alagic, Mara, Assistant Professor, Curriculum and Instruction (1999). BA/MA, University of Belgrade, Yugoslavia, 1975; PhD, 1985.

Alagic, Suad, Professor, Computer Science (1993). BS, University of Sarajevo, 1970; MS, University of Massachusetts, 1972; PhD, 1974.

Alexander, David R., Professor, Physics, and Executive Director, Lake Afton Public Observatory (1987). BS, Kansas State University, 1967; AM, Indiana University, 1968, PhD, 1971.

Anderson, Peggy J., Assistant Professor, Curriculum and Instruction, and Associate Dean, Education (1993). BS, Emporia State University, 1967; MA, University of Kansas, 1979; PhD, Wichita State University, 1993.

Armstrong, Richard N., Associate Professor and Associate Director, 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.


Bagai, Rajiv, Associate Professor, Computer Science (1980). BS, Birla Institute of Technology and Science, 1983; MS, University of Victoria, 1987; PhD, 1990.


Bajaj, Prem N., Associate Professor, Mathematics and Statistics (1968). BA, Punjab University, 1951; MA, 1954; MS, Case Western Reserve University, 1967; PhD, 1968.

Bakken, Linda, Professor, Administration, Counseling, Educational, and School Psychology (1985). BA, Northern Michigan University, 1966; MS, Utah State University, 1979; EdD, Boston University, 1983.


Baldner, Marcus T., Professor, Curriculum and Instruction (1970). BSE, North Texas State University, 1959; MEA, Texas Tech University, 1963; EdD, 1970.

Bannister, Andy, Associate 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.


Beekh, John M., Professor, School of Accountancy, and Dean, W. Frank Barton School of Business (2000). BS, Pennsylvania State University, 1977; MBA, Indiana University, 1982; PhD, 1988.

Beehler, Pamela, Associate Professor, Kinesiology and Sport Studies (2000). BS, Pennsylvania State University, 1977; MEA, East Stroudsburg University, 1980; PhD, Indiana University, 1986.

Beggs, Donald L., President and Professor of Education (1999). BSE, Southern Illinois University, 1963; MEd, 1964; PhD, University of Iowa, 1966.

Behman, Elizabeth, Associate Professor, Physics, and Associate Director, Emory Lindquist Honors Program (1990). BS, Brown University, 1979; MS, University of Illinois, 1981; PhD, 1985.


Berman, Nancy, Associate Professor, Management, and Associate Dean, W. Frank Barton School of Business (1980). BA, Wichita State University, 1969; MBA, 1974; PhD, University of Minnesota, 1983.


Billings Dorothy K., Associate Professor, Anthropology (1966). BA, University of Wisconsin, 1955; PhD, University of Sydney, 1972.

Blaschke, William, Professor, Geology, and Associate Dean, Fairmont College of Liberal Arts and Sciences (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.

Blancher, Larry R., Professor and Associate Chairperson, School of Music (1995). BME, Morehead State University, 1979; MME, 1977; PhD, Florida State University, 1986.

Born, John D., Jr., Associate Professor, History (1965). BA, University of Texas, 1952; MA, University of Houston, 1958; PhD, University of New Mexico, 1963.

Bousfield, George R., Associate Professor, Biological Sciences (1991). BS, Saginaw Valley State University, 1974; MA, Indiana University, 1976; PhD, 1981.


Brady, Stephen W., Associate Professor, Mathematics and Statistics, and College Algebra Program Director (1967). AB, Indiana University, 1963; AM, 1965; PhD, 1968.

Brago-Elizondo, Pedro, Professor, Modern and Classical Languages and Literatures (1975). Universidad Tecnica del Estado, Chile, 1957; MA, Education, Catholic University, Valparaiso, Chile, 1964; MA, University of Iowa, 1971; PhD, 1974.

Brooks, Christopher K., Associate Professor, English (1989). BA, Indiana University, 1977; MA, Indiana State University, 1979; PhD, Purdue University, 1987.

Brown, Karen Lee, Associate Professor, Biological Sciences (1982). BA, Miami University-Oxford, Ohio, 1974; MS, 1976; PhD, University of Georgia, 1981.

Bryan, Jeffrey J., Associate Professor, School of Accountancy, and Barton Fellow (1993). BA, Witscha State University, 1977; JD, Washburn University School of Law, 1980; PhD, Texas Tech University, 1994.

Burdaal, Charles A., Jr., Professor and Chairperson, Psychology (1972). BA, Texas Tech University, 1966; PhD, 1971.


Carter, John, Associate Professor, Physical Therapy (1990). BS, Southern Nazarene University, 1968; MS, Trinity University, 1972; PhD, University of Texas Medical School-San Antonio, 1975.

Carter, Shirley Staples, Professor and Director, Elliott School of Communication (2000). BS, Tuskegee University, 1971; MA, Ohio State University, 1972; PhD, University of Missouri, 1987.

Chaparro, Alex, Associate Professor, Psychology (1996). BS, Florida Institute of Technology, Melbourne, 1984; PhD, Texas Tech University, 1990.

Chaudhuri, Jharna, Professor and Graduate Coordinator, Mechanical Engineering (1984). BS, Lady Brabourne College, Calcutta University, 1967; MS, State University of New York, 1975; PhD, Rutgers University, 1982.
D'Souza, Francis, Associate Professor, Chemistry (1994). BS, University of Mysore, India, 1982; MS, 1984; PhD, Indian Institute of Science, India, 1991.

Dadashzadeh, Mohammad, Professor, Finance, Real Estate, and Decision Sciences, and Barton Fellow (1989). MSA, Massachusetts Institute of Technology, 1978; MBA, American International College, 1979; PhD, University of Massachusetts, Amherst, 1985.

Datteri, Dacee, Assistant Professor, Psychology (2000). BS, St. Ambrose University, 1995; MS, Texas Christian University, 1998; PhD, 2000.


Davis, Gayle R., Associate Professor, Women's Studies, and Associate Vice President, Academic Affairs (1982). BA, Muskingum College, 1968; MA, Michigan State University 1973; PhD, 1981.


Dawe, Margaret, Associate Professor and Chairperson, English (1993). BA, University of Virginia, 1979; BS, Northwestern University, Evanston, 1980; City University of New York, Brooklyn College, 1989.


Dooley, Patricia, Associate Professor, 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.

Duell, Orpha K., Professor and Chairperson, Administration, Counseling, Educational, and School Psychology (1967). BS, Kansas State University, 1963; MS, University of Illinois, 1965; PhD, 1967.


Egbert, Robert I., Professor, Electrical and Computer Engineering, and Director, WSU Center for Energy Studies (1986). BSEE, University of Missouri at Rolla, 1972; MSEE, 1973; PhD, 1976; Licensed Professional Engineer-Missouri, Kansas.

Eichhorn, David, Assistant Professor, Chemistry (1996). Harvard University, Cambridge, 1986; PhD, University of California, Berkeley, 1992.


Ellsworth, Randolf, Professor, Administration, Counseling, Educational, and School Psychology; and Associate Dean, Education (1974). BS, State University College of New York at Plattsburgh, 1964; MA, George Peabody College, 1967; PhD, 1970.


Flenje, H. Edward, Professor and Director, Hugo Wall School of Urban and Public Affairs (1979). BS, Emporia State University, 1964; MA, George Washington University, 1965; PhD, University of Kansas, 1970.

Foran, Michael E., Professor, School of Accountancy (1983). BS, University of Arizona, 1967; MAS, University of Illinois, 1968; PhD University of Washington, 1972; CMA; CPA-Texas, Oklahoma.

Foster, Mary Sue, Professor, School of Art and Design (1966). BSE, University of Kansas, 1961; MFA, 1963; MFA, 1971.

Friedman, Buma, Professor and Chairperson, Mathematics and Statistics (1982). MS, Moscow State University College of New York at Plattsburgh, 1964; PhD, University of Massachusetts, 1978; Leningrad Pedagogical Institute, USSR, 1973.

Furtwangler, Carol, Professor, Administration, Counseling, Educational, and School Psychology (1990). BS, Bowie State University, 1972; MA, George Mason University, 1976; PhD, Vanderbilt University, 1980.


Gaunt, Philip, Professor and Director, Elliott School of Communication (1990). BA, Reading University, U.K., 1959; MA, Indiana University, 1988; PhD, 1989.

Gibson, Ian, Associate Professor, Administration, Counseling, Educational, and School Psychology (1996). BA, University of Nebraska-Lincoln, 1977; MEd, Wichita State University, 1980; PhD, University of Kansas, 1986.

Gibson, Kay, Assistant Professor, Curriculum and Instruction (2000). BA, Wichita State University, 1970; MS, 1984; PhD, University of New England, 1994.


Glasser, Mark A., Professor, Hugo Wall School of Public and Urban Affairs (1994). BBA, Wichita State University, 1970; MJA, 1974; PhD, University of Texas-Arlington, 1981.


Glenn-Lewin, David, Professor and Dean, Fairmount College of Liberal Arts and Sciences (1994). AB, Knox College, 1945; PhD, Cornell University, 1972.


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.

Greenberg, Gary, Professor and Graduate
College, 1962; MA, Wichita State University, 1964;
PhD, Kansas State University, 1970.

Grewall, Mahesh S., Professor, Mechanical
Engineering (1969). BSC, University of Allahabad,
India, 1953; BS, University of California at Berkeley,
1957; MS, 1959; PhD, 1962; Licensed Professional
Engineer-Kansas.

Gries, John C., Associate Professor, Geology
PhD, University of Texas, 1970.

Grounis, William G., WSU Endowment
Association Distinguished Professor, Chemistry
(1980). BS, American University of Beirut 1969; PhD,

Gunnersen, James N., Professor, Geology (1970).
BS, University of Wisconsin, 1949; MA, University of
California at Los Angeles, 1955; PhD, University of
Minnesota, 1958.

Gythiel, Anthony P., Professor, History (1971).
Diploome d’Humanites, St. Stanislaus Pooringer,
Belgium, 1950; BPh, Maisen de Philosophie, Belgium,
1953; MA in Theology, Maisen de Theologie,
University de Louvain, Belgium, 1957; MA, University
de Detroit, 1966; PhD, 1971.

Hacomb, Charles G., Professor, Psychology
(1990). BA, Oklahoma Baptist University, 1958; PhD,
Baylor University, 1964.

Hamdeh, Hussein, Professor and Chairperson,
Physiology (1989). BS, Leba-nese University, 1978; MS,
Northeastern University, 1980; PhD, 1986.

Hawkins, Katherine W., Professor and Graduate
Coordinator, Elliott School of Communication (1994).
BA, University of Virginia, 1980; MA, University of
Texas-Austin, 1982; PhD, 1986.

Hawley, Donna J., Professor, School of Nursing
and Director, Institutional Research (1981). BSN,
University of Iowa 1968; MA, University of Missouri
at Kansas City, 1971; MN, University of Kansas, 1980;
EdD, 1980.

Hayes, Karen, Assistant Professor, School of
Nursing (1986). BS, University of Virginia, 1974; MS,
University of Kansas, 1979; PhD, University of
Missouri, Columbia, 1996.

Henderson, J. III, Professor, Biological
Sciences (1992). BA, Northwestern University, 1974;
MA, 1978; PhD, Clark University, 1982.

Hersch, Philip L., Professor, Economics, and
Barton Fellow (1983). BA, Queens College, 1974; MA,
Ohio State University, 1978; PhD, 1982.

Herzog, Silvia, Assistant Professor, Music
University, 1977; MA, University of Southern
California, 1989; PhD, 1996.

Hildreth, W. Bartley, Regents Distinguished
Professor, Hugo Wall School of Public and Urban
Affairs (1994). BA, University of Alabama, 1971;
MPA, Auburn University-Montgomery, 1974; DPA,
University of Georgia, 1979.

Hitchcock, Ruth A., Assistant Professor,
State University, 1968; PhD, University of Oklahoma, 1977.

Kovar, Susan K., Professor, Kinesiology and Sport Studies, and Interim Dean, Graduate School (1991). BS, University of Nebraska, 1967; MS, University of Illinois, 1970; PhD, University of Minnesota, 1985.


Lacy, Thomas E Jc, Assistant Professor, Aerospace Engineering (1998). BS, University of New Mexico, 1983; MS Georgia Institute of Technology, 1992; PhD, 1998. Licensed Professional Engineer—Georgia.

Lancaster, Kirk E., Professor, Mathematics and Statistics (1980). AB, Humboldt State University, 1975; PhD Oregon State University, 1981.


Lengnick-Hall, Cynthia A., Professor, Management (1990). BA, University of California-Los Angeles, 1970; MBA, 1976; PhD, University of Texas at Austin, 1981.

Lengnick-Hall, Mark L., Professor, Management (1990). BBA, University of Texas at Austin, 1975; MBA, 1978; PhD, Purdue University, 1988.

Lescoc-Long, Mary A., Associate Professor, Public Health Sciences (1994). BS, Western Michigan University, 1975; MA, University of Michigan, 1980; PhD, University of South Carolina, 1992.


Locke, James E., Associate Professor, Aerospace Engineering (2000). BSCE, Oklahoma State University, 1981; MSCE, 1983; PhD, Old Dominion University, 1988.

Lofthus, Ariel, Assistant Professor, History (1997). BA, University of Michigan, 1979; PhD, Stanford University, 1981; MA, University of Michigan, 1982; PhD, 1992.


Lopez, Gerald D., Jr., Associate Vice President for Research, Director of the Office for Research Administration, and Associate Professor, Physics (1964). BA, Wichita State University, 1959; MS, Oklahoma State University 1962; PhD, 1966.

Luttrell, Nancy, Associate Professor, School of Music (1985). BM, Wichita State University, 1966; MM, 1968.

Lydy, Michael J., Associate Professor, Biological Sciences (1994). BA, Wittenberg University, 1984; PhD, Ohio State University, 1990.

Ma, Chuncheng, Assistant Professor, Mathematics and Statistics (1999). BS, Wuhan Teachers College at Xiaogang, China, 1981; MS, Wuhan University, China, 1988; PhD, University of Sydney, Australia, 1997.

Ma, Daowei, Associate Professor, Mathematics and Statistics (1993). MS, Wuhan University, China, 1982; PhD, Washington University-St. Louis, 1990.

Madhavan, Viswanathan, Assistant Professor, Industrial and Manufacturing Engineering (1996). BTEch, Indian Institute of Technology, Madras, India, 1991; MS, Purdue University, 1993; PhD, 1996.

Malzahn, Don E., Professor, Industrial and Manufacturing Engineering (1973). BS, Oklahoma State University 1966; MS, 1969; PhD, 1975.

Mandl, A.J. (Jay), Associate Professor, Philosophy, and Director, Emory Lindquist Honors Program (1976). BA, Trinity College, 1972; MA, Vanderbilt University, 1974; PhD, 1978.


Mau, Joseph W.C., Associate Professor, Administration, Counseling, Educational, and School Psychology (1991). BA, Tamkang University, Taiwan, 1979; MA, University of Iowa, 1985; PhD, 1994.


McCormick, B. Jack, Professor, Chemistry (1979). BS, West Texas State University, 1959; PhD, Oklahoma State University, 1962.

McDonald, J. David, Associate Professor and Chairperson, Biological Sciences (1992). BS, Kansas State University, 1983; PhD, 1988.


Meissen, Gregory J., Professor, Psychology (1980). BA, Wichita State University, 1977; PhD, University of Tennessee, 1980.


Miller, Lori K., Professor and Chairperson, Kinesiology and Sport Studies (1996). BS, Emporia State University, 1984; MED, Texas A&M University, 1986; MBA, University of Louisville, 1993; EdD, East Texas State University, 1989.


Mukerjee, Hari, Associate Professor and Chairperson, Anthropology, and Associate Professor, Criminal Justice (1989). BA, Texas Tech University, 1977; MA, University of Arkansas, Fayetteville, 1982; PhD, University of Tennessee, Knoxville, 1989.

Murdoch, Katherine, Professor, School of Music (1985). BA, Humboldt State University, 1971; BA, 1977; MA, San Francisco State University, 1980; PhD, Eastman School of Music, University of Rochester, 1986.

Murphy, Dwight D., Professor, Finance, Real Estate, and Decision Sciences (1967). BS, University of Denver, 1957; JD, 1959.


Myers, Walter J., Professor, School of Music, and Dean, Fine Arts (1963). BS, Ohio State University, 1959; MME, University of Colorado, 1961; MM, Performance, 1966; DMA, University of Missouri at Kansas City, 1969.


Im, Kyung So, Assistant Professor, Economics (1998). BA, Sung Kyun Kwan University, 1981; MA, Michigan State University, 1993; PhD, 1994.


Jarman, Jeffrey, Assistant Professor, School of Communication, and Director of Debate and Forensics (1996). BS, Southwest Missouri State University, 1993; MA, University of Kansas, 1995; PhD, 1998.


Koeber, Charles S., Assistant Professor, Sociology (1999). BA, University of Wyoming, 1991; MA, 1993; PhD, Binghamton University, 1999.

Kohan, David, Assistant Professor, School of Art and Design, and Director of Foundation Program (1998). BFA, Edinboro University, 1980; MFA, Virginia Commonwealth University, 1983.

Koppeslaver, John H., Associate Professor, Modern and Classical Languages and Literatures, and Executive Director, International Education (1966, 1972). BA, Wichita State University, 1964; MA, University of Iowa, 1966; PhD, 1974.


Langrall, Rebecca, Assistant Professor, Curriculum and Instruction (2000). AB, Smith College, 1975; MALD, Dartmouth College, 1984; EdD, University of Massachusetts-Amherst, 1997.


Lewandoski, Cathleen A., Assistant Professor and Director, School of Social Work Program (1995). BA, Blackburn College, 1975; MSW, St. Louis University, 1981; PhD, University of Kansas, 1997.

Li, Qing, Assistant Professor, Psychology (1996). BA, Wichita State University, 1991; MA, University of Kansas, 1993; MPH, 1996; PhD, 1996.

Longhofer, Stanley D., Associate Professor, Finance, Real Estate, and Decision Sciences (1990). BBA, University of Georgia, 1990; PhD, 1999.


Hiltner, David, Assistant Professor, School of Art and Design (1999). BFA, Wichita State University, 1993; MFA, Syracuse University, 1997.

Ho, Lop-Hing, Associate Professor, Mathematics and Statistics (1989). BA, Chinese University of Hong Kong, 1979; MA, Princeton University, 1982; PhD, 1984.

Hogan, Linda, Assistant Professor, Medical Technology (1972). BA, Emporia State University, 1965; MT (ASCP), 1965; BB (ASCP), 1972; MEd, Wichita State University, 1977.

May, Phillip T., Professor, School of Accountancy (1974). BA, Lawrence University, 1957; MBA, Indiana University, 1959; PhD, University of Wisconsin, 1967. CPA-Wisconsin.

McKenney, James W., Associate Professor, Political Science (1966). BA, Willamette University, 1958; MA, University of Oregon, 1964; PhD, 1969.

Mehta, Zarin, Assistant Professor, Communicative Disorders and Sciences (2000). MBBS, Dow Medical College, Pakistan, 1986; MA, University of Kansas, 1990; PhD, Wichita State University, 2000.

Milnes, William, Assistant Professor, Economics (1981). BA, Bentley College, 1993; PhD, University of Illinois at Urbana-Champaign, 1999.


Parker, Lee E. Assistant Professor, School of Community Affairs, Criminal Justice Program (1989). BA, Wichita State University, 1977; JD, Washburn University, 1979.


Pfannesiel, Maurice, Associate Professor, Economics (1966). BA, Fort Hays State University, 1960; MS, Oklahoma State University, 1966; PhD, 1967.

Porter, Stephen S., Assistant Professor, Marketing and Entrepreneurship (1995). BS, Friends University, 1976; MBA, Wichita State University, 1982; PhD, Oklahoma State University, 1994.

Price, Jay M., Assistant Professor, History (1999). BA, University of Mexico, 1991; MA, College of William and Mary, 1992; PhD, Arizona State University, 1997.

Rey-Lopez, Maria, Assistant Professor and Graduate Coordinator, Modern and Classical Languages and Literatures (1997). BA, Universidad de Santiago de Compostela, 1982; MA, University of Colorado-Boulder, 1990; PhD, 1998.


Rogers, Ben E., Associate Professor, Philosophy (1966). BA, University of Tennessee, 1958; MAT, Vanderbilt University, 1961; MA, Indiana University, 1966; PhD, 1970.

Rogers, Michael E., Associate Professor, Kinesiology and Sport Studies (1998). BS, Mount Union College, 1991; PhD, Kent State University, 1996.

Romig, Charles A., Professor, Administration, Counseling, Educational, and School Psychology (1985). BA, University of Illinois, 1977; MA, Trinity Evangelical Divinity School, 1979; PhD, Purdue University, 1982.

Ross, Robert H., Associate Professor and Chairperson, Marketing and Entrepreneurship (1977). AB, Cornell University, 1964; MBA, 1966;


SHEFFER, Martha M., Assistant Professor, Nursing, and Associate Vice President, Academic Affairs (1975), BSN, Eastern Mennonite College, 1965; MA in Nursing, University of Iowa, 1974; PhD, University of Kansas, 1985.


STANFIELD, John E., Jr., Associate Professor, Political Science (1968). BA, Southeastern Louisiana University, 1961; MA, Louisiana State University, 1963; PhD, University of Wisconsin, 1971.

STARKEY, Linda, Assistant Professor, School of Music (1993). BME, University of Kansas, 1968; MM, Fort Hays State University, 1972; MA, Wichita State University, 1990.


TAHER, Syed M., Associate Professor, Physics (1976). BS, Dacca University, 1964; MS, 1966; MA, California State University, Long Beach, 1970; PhD, Washington State University, 1974.

TATE, Juanita S., Associate Professor and Chairperson, School of Nursing, and Associate Dean, College of Health Professions (1999). BS, University of Missouri, 1960; MS, Washington University, 1965; Certificate in Gerontology, University of Denver, 1982; PhD, 1984.

THOMSON, Johnnie, Associate Professor, Curriculum and Instruction (1993). BS, University of Kansas, 1968; MS, Central Missouri State University, 1975; EdD, Kansas State University, 1992.

TOMY, William, Professor and Chairperson, School of Music (1976). BM, Wichita State University, 1963; MM, 1965; DMA, University of Missouri at Kansas City, 1968.

Torbenson, Craig L., Associate Professor, History (1989). BS, Brigham Young University, 1982; MA, 1985; PhD, University of Oklahoma, 1992.

TOWN, Robert L., Associate Professor, School of Music (1965). BM, Eastman School of Music, 1960; MM, Syracuse University, 1962.

WELEBA, Gamal S., Assistant Professor, Industrial and Manufacturing Engineering (2000). BS, Menoufia University, 1981; MS, 1987; PhD, University of Central Florida, 1996.

WHEATON, Lawrence E., Assistant Professor, Industrial and Manufacturing Engineering (1999). BSET, Oklahoma State University, 1984; MSIE, 1986; PhD, University of Texas-Arlington, 1999.

WIDENER, Russell D., Associate Professor, School of Music, and Coordinator, General Education Program (1981). BM, Baylor University, 1968; MM, Catholic University, 1972.

WINIEC, Donald R., Associate Professor, English (1971). BA, University of Washington, 1960; MA, Pennsylvania State University, 1962; PhD, Indiana University, 1971.

WITHERS, Brian, Assistant Professor, School of Community Affairs, Criminal Justice Program, and Director, Midwest Criminal Justice Institute (1999). BA, Stephen F. Austin State University, 1981; MPA, Southwest Texas State University, 1993; PhD, Sam Houston State University, 1999.

WOLF, James A., Associate Professor, Management; Associate Dean, W. Frank Barton School of Business; and Director, Graduate Studies in Business (1994). BS, University of Idaho, 1972; MBA, Washington State University, 1990.

YOUTHIS, Catherine G., Associate Professor, Curriculum and Instruction (1979). BS, Michigan State University, 1963; MS, Purdue University, 1973; PhD, 1978.


YOUNGMAN, Arthur L., Assistant Professor, Biological Sciences (1965). BA, Montana State University, 1959; MS, Case Western Reserve University, 1961; PhD, University of Texas, 1965.
WICHITA STATE UNIVERSITY

Campus Map

Map Legend
Facilities are identified with a letter corresponding to their location on the map.

Buildings
Ablah Library (D)
Ahlberg Hall (C)
Beech Wind Tunnel (D)
Blake Hall (B)
Brennan Hall I (C)
Brennan Hall II (C)
Brennan Hall III (C)
CAC Theater (C)
Central Energy Plant (D)
Cessna Stadium (C)
Child Development Center (A)
Clinton Hall (C)
Corbin Education Center (D)
Credit Union (D)
Devlin Hall (C)
Duerksen Fine Arts Center (B)
Eck Stadium (E)
Elliot Hall (C)
Engineering Building (D)
Fairmount Towers Commons (A)
Fairmount Towers North (A)
Fairmount Towers South (A)
Fiske Hall (B)
Gaddis Physical Plant Complex (D, E)
Gardner Plaza (C)
Geology Building (C)
Golf Course Maintenance Building (E)
Golf Pro Shop (F)
Grace Memorial Chapel (C)
Grace Wilkie Hall (D)
Greenhouse (D)
Harrion Hall (C)
Heskett Center (D)
Heskett Center Storage (D)
Housing Maintenance Shop (A)
Hubbard Hall (C)
Human Resources Center (C)
Intensive English Language Center (A)
Jabara Hall (C)
Jardine Hall (C)
Levitt Arena (B)
Lindquist Hall (C)
Lutheran Student Center (D)
McKinley Hall (B)
McKnight Art Center (B)
Media Resources Center (D)
Memorial '70 (B)
Metropolitan Complex, Hughes (inset)
Morrison Hall (C)
National Institute for Aviation Research (E)
Neff Hall (C)
Newman Center (D)
Original Pizza Hut (D)
Plaza of Heroines (C)
Police Department (D)
President's Residence (B)
Publications/Printing (D)
Rhatigan Student Center (C)
Sheldon Coleman Tennis Complex (C)
Tyler Field (E)
Ulrich Museum of Art, Edwin A. (B)
Visual Communications (D)
Wallace Hall (D)
Warehouse (E)
Wheatshocker Apartments (E)
Wiedemann Hall (B)
Wilkins Stadium (D)
Wilner Auditorium (B)
Woodman Alumni Center (F)

Fraternities
Beta Theta Pi (A)
Delta Upsilon (C)
Kappa Sigma (D)
Phi Delta Theta (E)
Sigma Alpha Epsilon (B)
Sigma Phi Epsilon (C)

Sororities
Alpha Phi (D)
Delta Delta Delta (D)
Delta Gamma (D)
Gamma Phi Beta (D)

Wichita State has an ongoing program to provide people with disabilities full access to all buildings; however, some barriers still exist. For information regarding any campus building's accessibility to the disabled, call the Office of Disability Services, (316) 978-3309.

Visitors to the Wichita State campus should obtain temporary parking permits from the Police Department, open 24 hours a day.
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Key to Course Descriptions

Symbols
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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 areas are used in references to courses offered by those departments.

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

North Central Association of Colleges and Schools*
AACSB—International Association for Management Education
AACSB—International Association for Management—Accounting
Accreditation Committee
Accreditation Board of Engineering and Technology
Accreditation Review Commission on Physician Assistant Education
American Bar Association
American Chemical Society
American Dental Educators' Association
American Speech-Language and Hearing Association
Association of Physician Assistant Programs
Association of Schools of Allied Health Professionals
Collegiate Commission on Nursing Education
Commission on Accreditation of Allied Health Education Programs
Commission on Accreditation in Physical Therapy Education
of the American Physical Therapy Association
Commission on Dental Accreditation of the
American Dental Association
Council on Education for Public Health
Council on Social Work Education
Kansas Board of Emergency Medical Services
Kansas State Board of Nursing
Kansas State Department of Education
National Accrediting Agency for Clinical Laboratory Sciences
National Association of School Psychologists
National Association of Schools of Dance
National Association of Schools of Music
National Council for Accreditation of Teacher Education
National League for Nursing

*North Central Association of Colleges and Schools Commission on Institutions of Higher Education;
30 North LaSalle Street, Suite 2400; Chicago, Illinois 60602-2504; (800) 621-7440.