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**Graduate Catalog 2004-2005**

The Graduate Catalog, an official catalog of the WSU Graduate School, is produced annually to provide general information for students admitted to or considering graduate education at Wichita State. The Graduate Catalog contains policies, regulations, procedures, and fees current and in effect 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 catalog is subject to change without notice and does not constitute a contract between Wichita State University and a student or an applicant for admission to the Graduate School.

**Electronic and Additional Copies of the Catalog**

Portions of this catalog may be viewed in electronic form on the internet: www.wichita.edu
All graduate students admitted to a degree program are eligible to receive one complimentary copy by presenting their Shocker identification card to the Graduate School office for verification. Additional copies of the catalog may be purchased at the WSU Bookstore in the Rhatigan Student Center.

**Official Address**

Graduate School
Wichita State University
1845 Fairmount
Wichita, Kansas 67260-0004
www.wichita.edu
Graduate School telephone number: (316) 978-3095

Notice of Non-discrimination: 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. 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 Keri Sansburn-Behre, Catalog Editor, 3/04
Academic Calendar, 2004-2005

Summer Semester 2004
May 24-June 4: Presession and workshops
May 31: Memorial Day holiday
June 1-4: Summer Session registration
June 7: Classes begin, eight-week term and first four-week term
June 18: Final date for filing Application for Degree card in Graduate School Office
July 5: Independence Day holiday
July 6: Classes begin, second four-week term
July 23: 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*

July 30: Summer Session ends

Fall Semester 2004
August 11-18: Fall Semester registration
August 19: Classes begin
September 6: Labor Day holiday
September 16: Final date for filing Application for Degree card in Graduate School Office
October 13: Midterm point
October 17-19: Fall recess
November 1: Final date for withdrawal with nonpenalty grades
November 24-28: Thanksgiving recess
December 9: Last day of classes
December 10: 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*

December 11-17: Final examinations
December 12: Graduate School Hooding and University Commencement

Spring Semester 2005
January 11-15: Spring Semester registration
January 17: Martin Luther King, Jr. Day, holiday
January 18: Classes begin
February 14: Final date for filing Application for Degree card in Graduate School Office
March 11: Midterm point
March 21-27: Spring recess
April 1: Final date for withdrawal with nonpenalty grades
May 9: 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*

May 10: Study day
May 11-17: Final examinations
May 13-14: Commencement

* Graduate School deadlines to ensure graduation that semester.
2003-2004 University and Academic Officers

Donald L. Beggs, President
Ted D. Ayres, Vice President and General Counsel
Robert L. Kindrick, Vice President for Academic Affairs and Research
Elizabeth H. King, Vice President for University Advancement
Roger D. Lowe, Vice President for Administration and Finance
Ronald R. Kopita, Vice President for Student Affairs
Susan Kovar, Dean of the Graduate School
John M. Beehler, Dean of the W. Frank Barton School of Business
Jon M. Engelhardt, Dean of the College of Education
Walter Horn, Interim Dean of the College of Engineering
Elaine D. Bernstorf, Interim Dean of the College of Fine Arts
Peter Cohen, Dean of the College of Health Professions
William Bischoff, Dean of Fairmount College of Liberal Arts and Sciences
Pal Rao, Dean of Libraries
Christine Schneikart-Luebbe, Dean of Enrollment Services
Cheryl Anderson, Dean of Students
James W. Kelley, Dean, Operations & Personnel, Student Affairs
Eric Sexton, Director, Government Relations
Jim Schaus, Director of Intercollegiate Athletic Association, Inc.

Kansas Board of Regents

Reginald Robinson, President and CEO
Janice DeBauge, Emporia, Chair
Richard Bond, Overland Park, Vice-Chair
William R. Docking, Arkansas City
Lew Ferguson, Topeka
Frank Gaines, Hamilton
Nelson Gallego, Manhattan
James Grier III, Wichita
Donna L. Shank, Liberal
Deryl Wynn, Kansas City
# Graduate Degree Programs • Departmental Admission Requirements

Minimum grade point average (GPA) for all areas is 2.75 on last 60 hours of course work or nearest two full years of coursework. Some programs require a higher GPA.

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

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<tr>
<th>TOEFL Paper</th>
<th>Programs</th>
<th>Departmental application requirements</th>
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</thead>
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<td>550 213</td>
<td>Accounting (MACC)</td>
<td>GPA 3.0 last 60 hours; undergraduate degree in engineering or related field; GRE (general); master's degree in engineering or physical science</td>
</tr>
<tr>
<td>550 213</td>
<td>Aerospace engineering Master of Science (MS) Doctor of Philosophy (PhD)</td>
<td>GPA 3.250 in last 60 hours; 15 hours of anthropology; statement of purpose with intended specialization; application deadline, February 1 for following fall</td>
</tr>
<tr>
<td>550 213</td>
<td>Anthropology (MA)</td>
<td>GPA 3.50 last 60 hours; CRE (general); statement of artistic philosophy</td>
</tr>
<tr>
<td>550 213</td>
<td>Art, studio (MFA) Ceramics Painting Printmaking Sculpture</td>
<td>GRE (general and biology); CPA 3.0 in all UG 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>Biology (MS)</td>
<td>CPA 3.0 last 60 hours; auto biographical statement of interests and goals; GRE (verbal and quantitative); statement of research interests; 2 recommendation letters</td>
</tr>
<tr>
<td>570 230</td>
<td>Business administration (MBA)</td>
<td>CPA 3.0 last 60 hours; 24 hours of relevant courses; writing sample; Original writing in fiction; 20 pages writing sample; 4 to 6 original poems</td>
</tr>
<tr>
<td>570 230</td>
<td>Chemistry Master of Science (MS) Doctor of Philosophy (PhD)</td>
<td>CPA 3.5 last 60 hours in English courses; 24 hours of relevant courses in English; writing sample: Original writing in fiction, 20 pages writing sample; 4 to 6 original poems</td>
</tr>
<tr>
<td>570 230</td>
<td>Counseling (MEd)</td>
<td>GPA 3.0 in all English courses; 24 hours of relevant courses; writing sample; Original writing in fiction, 20 pages writing sample; 4 to 6 original poems</td>
</tr>
<tr>
<td>600 250</td>
<td>Communication (MA)</td>
<td>CPA 3.0 last 60 hours; auto biographical statement of interests and goals; GRE (verbal, quantitative, and writing); statement of research interests; 2 recommendation letters</td>
</tr>
<tr>
<td>600 250</td>
<td>Computer science (MS)</td>
<td>CPA 3.0 last 60 hours; professional essay; letters of recommendation; personal interview</td>
</tr>
<tr>
<td>600 250</td>
<td>Counseling (MEd)</td>
<td>CPA 3.0 last 60 hours; statement of professional goals; 3 reference letters; resume; 9 undergraduate hours in psychology and 6 additional hours in behavioral sciences</td>
</tr>
<tr>
<td>600 250</td>
<td>Creative writing (MFA) Fiction Poetry</td>
<td>CPA 3.0 in English courses; 24 hours of relevant courses; writing sample; Original writing in fiction; 20 pages writing sample; 4 to 6 original poems</td>
</tr>
<tr>
<td>550 213</td>
<td>Criminal justice (MA)</td>
<td>CPA 3.0 last 60 hours; auto biographical statement of interests and goals; GRE (verbal and quantitative); statement of research interests; 2 recommendation letters</td>
</tr>
<tr>
<td>550 213</td>
<td>Curriculum and instruction (MEd)</td>
<td>CPA 3.0 last 60 hours; auto biographical statement of interests and goals; GRE (verbal, quantitative, and writing); statement of research interests; 2 recommendation letters</td>
</tr>
<tr>
<td>550 213</td>
<td>Economics (MA)</td>
<td>CPA 3.0 in all economics courses and required mathematics</td>
</tr>
<tr>
<td>550 213</td>
<td>Educational Administration and Supervision Master of Education (MED) Educational Administration Doctor of Education (EdD)</td>
<td>CPA 3.0 last 60 hours; CRE (general); or MAT; 3 recommendation forms; resume; 1 year full-time teaching experience in accredited school; mentor support letter; goals statement</td>
</tr>
<tr>
<td>550 213</td>
<td>Educational psychology (MEd)</td>
<td>CPA 3.0 last 60 hours; CRE (general); or MAT; 3 recommendation forms; resume; 1 year full-time teaching experience in accredited school; mentor support letter; goals statement</td>
</tr>
<tr>
<td>550 213</td>
<td>Electrical engineering (MS) Doctor of Philosophy (PhD)</td>
<td>CPA 3.5 last 60 hours; GRE (general); master's degree in engineering or physical science</td>
</tr>
<tr>
<td>550 213</td>
<td>Engineering management (MEM)</td>
<td>CPA 3.0 last 60 hours in all graduate work; UC major in engineering or related field; 2 years of acceptable professional work experience; experience in using spreadsheet and database software; GRE may be required</td>
</tr>
<tr>
<td>550 213</td>
<td>English (MA)</td>
<td>CPA 3.0 in all history courses; undergraduate major in history or equivalent</td>
</tr>
<tr>
<td>550 213</td>
<td>Gerontology (MA)</td>
<td>CPA 3.0 last 60 hours; names of 3 references</td>
</tr>
<tr>
<td>550 213</td>
<td>Industrial engineering Master of Science (MS) Doctor of Philosophy (PhD)</td>
<td>CPA 3.0 last 60 hours; programming competence in C, C++, Visual Basic or FORTRAN; GRE (general); master's degree in engineering or physical science; GPA 3.5 in last 60 hours</td>
</tr>
<tr>
<td>550 213</td>
<td>Educational psychology (MEd)</td>
<td>CPA 3.0 last 60 hours; CRE (general); or MAT; 3 recommendation forms; resume; 1 year full-time teaching experience in accredited school; mentor support letter; goals statement</td>
</tr>
<tr>
<td>550 213</td>
<td>Electrical engineering (MS) Doctor of Philosophy (PhD)</td>
<td>CPA 3.0 last 60 hours; CRE (general); or MAT; 3 recommendation forms; resume; 1 year full-time teaching experience in accredited school; mentor support letter; goals statement</td>
</tr>
<tr>
<td>550 213</td>
<td>Engineering management (MEM)</td>
<td>CPA 3.0 last 60 hours in all graduate work; UC major in engineering or related field; 2 years of acceptable professional work experience; experience in using spreadsheet and database software; GRE may be required</td>
</tr>
<tr>
<td>550 213</td>
<td>English (MA)</td>
<td>CPA 3.0 in all history courses; undergraduate major in history or equivalent</td>
</tr>
<tr>
<td>550 213</td>
<td>Gerontology (MA)</td>
<td>CPA 3.0 last 60 hours; names of 3 references</td>
</tr>
<tr>
<td>550 213</td>
<td>Industrial engineering Master of Science (MS) Doctor of Philosophy (PhD)</td>
<td>CPA 3.0 last 60 hours; programming competence in C, C++, Visual Basic or FORTRAN; GRE (general); master's degree in engineering or physical science; GPA 3.5 in last 60 hours</td>
</tr>
</tbody>
</table>

Note: For some programs, additional requirements may apply. Please consult the specific program requirements for more details.
Minimum grade point average (GPA) for all areas is 2.75 on last 60 hours of course work or nearest two full years of coursework. Some programs require a higher GPA.

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

## TOEFL

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<th>Paper</th>
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### Liberal studies (MA)
- GPA 3.0 last 60 hours; essay; personal interview; application deadlines: April 1 for fall, Oct. 1 for spring

### Mathematics (MS)
- Doctor of Philosophy (PhD)
- Undergraduate major in math or equivalent; GPA 3.0 in mathematics courses
- GRE (advanced); GPA 3.0 overall and 3.25 in mathematics and statistics

### Mechanical Engineering
- Master of Science (MS)
- Doctor of Philosophy (PhD)
- GPA 3.0 last 60 hours; GRE recommended for students applying from non-US institutions; for nonresident aliens

### Music (MM)
- Opera Performance
- Piano Accompanying
- Piano Pedagogy
- Instrumental Conducting
- History-literature
- Theory-composition
- Accredited music bachelor's degree
- Audition; performance background
- Audition, BM in piano performance
- Audition, BM in piano performance
- Audition, BM in music or music education
- BM, reading proficiency in one of the following: German, French, or Italian
- BM, resume; scores portfolio

### Music education (MME)
- Choral, Elementary, Voice,
- Instrumental, Special Education
- BME or equivalent

### Nursing (MSN)
- BSN from nationally accredited school; RN licensure in Kansas; 1 year of practice recommended; statistics; GPA 3.0 last 60 hours; professional liability insurance; computer literacy; NP requires departmental application

### Physical Education/Exercise Wellness (MEd)
- Application letter; 3 recommendation letters

### Physical therapy (MPT)
- Departmental application and fee; GPA 3.0 last 60 hours, in prerequisite, and all math and science courses; references

### Physician Assistant (MFA)
- Departmental application, GPA 3.0 overall and prerequisites, health care experience preferred but not required

### Physics (MS)
- 24 hours undergraduate physics

### Psychology (PhD)
- Community
- GRE (verbal and quantitative); 4 references; departmental application; biographical statement; application deadline for following fall, March 1
- Community/clinical
- GRE (verbal and quantitative); 4 references; departmental application; biographical statement; application deadline for following fall, February 1
- Human Factors
- GRE (verbal and quantitative); 4 references; departmental application; biographical statement; application deadline for following fall, March 1

### Public administration (MFA)
- Microcomputer application experience

### Public health (MPH)
- GRE or post-baccalaureate degree; 3.0 GPA; departmental application and fee; resume; 3 recommendation forms; statement of purpose

### School psychology (EdS)
- GRE (verbal, quantitative and possible writing assessment); resume; 3 reference letters; statement of professional goals; statement of research interests; master's degree in counseling or educational psychology or related area

### Social Work (MSW)
- GPA 3.0 last 60 hours; strong undergraduate preparation in liberal arts and sciences; departmental application; application deadline: January 1 for fall

### Sociology (MA)
- 15 hours sociology, college algebra; 3 reference letters; statement of purpose, research interests, and career goals

### Spanish (MA)
- 24 hours undergraduate Spanish; 12 hours advanced for native speakers; GPA 3.0 in Spanish courses

### Special education (MEd)
- 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

### Sport administration (MEd)
- Letter of application; resume; 3 recommendation letters; GRE may be required

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For addresses for entrance exam information and applications, see graduate certificate programs, next page.
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<th>TOEFL</th>
<th>Programs</th>
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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>Education</td>
<td>Educational Technology</td>
<td>A program of 15 hours for competency in technology for educators seeking positions involving computers in education or who are interested in adding this area of expertise to their credentials. Students advance their knowledge of computers in an educational setting, integrate technology into classroom instruction, and utilize technology for communication with students, parents, and the community. Current students in the Master of Education program in curriculum and instruction may choose this certificate to achieve documentation of expertise in educational technology.</td>
</tr>
<tr>
<td>550</td>
<td>Industrial Engineering</td>
<td>Quality Engineering and Management</td>
<td>A 12 hour program primarily for graduate students with industrial affiliation who are interested in enhancing their Quality Engineering Management skills. A 12 hour program of advanced knowledge and methodology of production system design, evaluation, and operation for practitioners in industry who are responsible for the development and management of production systems in the workplace.</td>
</tr>
<tr>
<td>550</td>
<td>Interdisciplinary</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</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</td>
<td>A 15 hour program of study in exercise physiology, risk management and sport safety, motor development and skill acquisition, sport psychology, and organization and administration.</td>
</tr>
<tr>
<td>570</td>
<td>Public Health</td>
<td>Public Health</td>
<td>A 15 hour program 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>
</tr>
<tr>
<td>600</td>
<td>Public Administration</td>
<td>Economic Development</td>
<td>A 12 hour program offering advanced study in economic development by state and local governments. The program enhances student’s career opportunities and provides state and local practitioners in economic development and training to improve their skills.</td>
</tr>
<tr>
<td>600</td>
<td>Public Finance</td>
<td>Public Finance</td>
<td>A 12 hour program offering advanced study in economic development by state and local governments. The program enhances student’s career opportunities and provides public finance practitioners an avenue to improve their skills.</td>
</tr>
</tbody>
</table>

Addresses for entrance exam information and applications for graduate degree programs (see previous page):

- GRE: Graduate Record Examinations
  P.O. Box 6000
  Princeton, NJ 08541-6000 USA
  www.gre.org

- GMAT: Graduate Management Admissions Test
  P.O. Box 6103
  Princeton, NJ 08541-6103 USA
  www.gmat.org

- Miller Analogy Test:
  The Psychological Corporation
  551 Academy Court
  San Antonio, TX 78204-2498 USA

- TOEFL: Educational Testing Service
  P.O. Box 6000
  Princeton, NJ 08541-6000 USA
  www.toefl.org
Graduate School

Offices: 107 Jardine Hall
Susan Kovar, dean
Pawan Kahol, 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.

The Graduate School provides opportunities to pursue advanced study in 56 master's programs, one educational specialist program, nine doctoral programs, and one Ist professional degree for the Doctor of Audiology. More than 3,200 students—roughly one of every five WSU students—are graduate students. The University, classified by the Carnegie Foundation as a Doctoral/Research Intensive institution, annually grants approximately 28 doctoral degrees and more than 700 master's degrees. The Graduate School, an affiliate member of the National Association of Graduate and Professional Students, is a member of the Council of Graduate Schools and the Midwestern Association of Graduate Schools.

Academic programs include master's, specialist, doctoral, and graduate certificate programs. Doctoral degrees are awarded in applied mathematics; chemistry; computer science; educational administration, psychology, 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.

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

Graduate Study Defined

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

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

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

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 coursework and a research project. Students admitted to a doctoral program usually spend four to six years of full-time study completing their degree. Depending upon the college 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 college, 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 or program who desire interdisciplinary coursework to complement a graduate degree program.

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

Graduate Council

The Graduate Council consists of the dean 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 and research, the deans of the Graduate School and academic colleges, and regular faculty members nominated and approved for 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.

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 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 students, 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 with 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.

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

Graduate Coordinators
The Graduate School works closely with 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 on 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 of overseeing the evaluation of applications for admission and the transmittal of department recommendations for admission, academic performance, degree completion, and exceptions to graduate school regulations.

Graduate coordinators also have a primary role in coordinating information between their programs and the Graduate School office, working with the departmental chair or other administrators in maintaining the quality and viability of the 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.

*Student's in WSU's College of Health Professions are placed in jobs at an exceptional rate. The graduate program in physician assistant studies is the only one of its kind in Kansas.*
Admission to Graduate Study

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

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

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

Students may apply on-line through the graduate school Website at http://webss.wichita.edu/gradsch.

Paper application forms may be requested by calling the Graduate School at (316) 978-3095, by e-mail at gradings@wichita.edu, or through the Web site listed above.

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. Hand-carried or "issued to student" transcripts cannot be accepted.

Credentials other than official transcripts will be considered only for application as a visiting guest student or nondegree, category B student. Please refer to pages 12-13 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 for Admission to Graduate School, certain program areas will also require a program application.

Records required for admission 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 semester when admission is desired. Materials received after this date will be processed as the time of staff and faculty permits, but the Graduate School cannot guarantee final action can be taken in time to allow enrollments for graduate credit.

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

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

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

Admission Application Fee

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

- $50 for students who will require a visa status
- $35 for American citizens or lawful permanent residents (proof of green card will be required).

Admission Deadlines

The following are deadlines for submission of complete application materials for all applicants seeking on-time registration except those applying for admission to programs in anthropology, business administration, communicative disorders and sciences, liberal studies, medical physics, medical psychology, and social work. Applicants to the program areas identified above should refer to departmental information in this Catalog for admission deadlines.

Admission Requirements

Degree Admission

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

Specialist and Master's Programs

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

2. Conditional Status

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

3. Probationary Status

Students who do not meet the minimum academic requirements for full-standing degree program admission may be admitted on probation when reasonable evidence exists to indicate their ability to do satisfactory degree program work. Students must earn a 3.000 GPA after the first 9 hours of graduate credit coursework to be removed from probation. Students admitted on probation or placed on academic probation following admission are not eligible for assistantships or federally funded financial aid.

Admission Preparation

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

Levels of Admission

1. Full Standing

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

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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 coursework for degree-seeking students at the master's or specialist level:

A grade point average of at least 2.750 based on the last 60 hours of coursework (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. Some departments may require a higher minimum grade point average.

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 on pages 6 and 7 to determine if a specific program requires an entrance exam.

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

1. The applicant must have earned a bachelor's degree from a regionally accredited institution or a recognized institution in another country whose requirements for the bachelor's degree are substantially equivalent to 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 3.000 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 coursework 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 of the Graduate Record Examination (within the last five years).

Application Packet
Early application is recommended when seeking admission to a graduate degree program. See the Graduate Program Requirements list (pages 6 and 7) for departmental application deadlines.

Include in the application packet:

1. A completed and signed application form
2. A check or money order payable to Wichita State University:
   - American citizen $35
   - Non-resident alien (see 4 below) $50
   - Permanent resident (see 5 below) $35
3. Two (2) official transcripts in sealed envelopes from the institutions where the bachelor's and/or master's degree was received or is expected to be received and where other academic work was completed.
4. Applicants who are not American citizens and who do not have Lawful Permanent Residency Status also require:
   - A completed and signed application form
   - Two (2) official transcripts in sealed envelopes, from the institutions, of all academic work including the bachelor's or a previous master's degree. WSU transcripts will be ordered for applicants who have completed WSU coursework.

Nondegree Admission
Persons who already possess a graduate degree, who do not wish 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 nondegree admission. Students originally admitted to a nondegree category may later request the program to consider a transfer to degree status or may apply for admission if the degree program is in a different program area. A maximum of 12 hours of graduate credit taken while in a nondegree category may be counted toward a degree program, provided students have obtained the approval of their major departments and the graduate dean.

Nondegree, Category A
Admission to this category provides students the opportunity to take any graduate coursework for which they have the prerequisites. Students in this category are not restricted and may take courses at the 800-level or above. Nondegree applicants seeking graduate certificates must be admitted under this category. Upon satisfactory completion of a course, credit is placed on a Wichita State University graduate transcript. However, only credit earned in courses numbered 500 and above is counted as graduate credit work.

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

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

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

A completed application packet must contain the following:

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 Programs
Graduate certificates are awarded to students who desire interdisciplinary coursework 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 nondegree, category A status. All Graduate School policies relative to the admission criteria mentioned above apply.

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

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

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, $35 application fee, and a signed letter from the graduate dean or the dean's representative at the home institution certifying the student's status as a graduate student in good standing. Visiting guests must have their school's permission to take up to one semester's work for transfer back to their home institutions.

If enrollment is desired beyond one semester, 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 must first complete a minimum of 9 hours of upper-division letter-graded coursework, selected with appropriate advisement. These 9 hours cannot include repeats of courses for which graduate credit was previously earned. Such coursework must be completed with a grade point average of 3.000 or higher for the readmission application to be considered. Meeting this standard, along with both Graduate School and program-specific requirements, will permit readmission to a graduate program. Previously dismissed students who are recommended for admission under this policy will re-enter on probation.

Senior Rule Admission
Seniors at Wichita State University 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 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 program in which the work is to be taken, the graduate 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 at WSU of all graduate international students must be in the program to which the student is admitted. The formal admission of international applicants is a two-part process. The first part evaluates academic admisibility 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.

Graduate programs (with the exception of Social Work, Nursing, Public Health, and Physician Assistant) will evaluate international applicants based upon official transcripts of mark sheets through the equivalent of the 1st semester of the applicant's final year of study toward the degree. For international students on a yearly program, this will be the 6th semester.

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

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. 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.

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.

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>230</td>
</tr>
<tr>
<td>Communication</td>
<td>600</td>
<td>250</td>
</tr>
<tr>
<td>Creative Writing</td>
<td>600</td>
<td>250</td>
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<tr>
<td>English</td>
<td>600</td>
<td>250</td>
</tr>
<tr>
<td>Gerontology</td>
<td>575</td>
<td>230</td>
</tr>
<tr>
<td>History</td>
<td>600</td>
<td>250</td>
</tr>
<tr>
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<td>250</td>
</tr>
<tr>
<td>Public Health</td>
<td>570</td>
<td>230</td>
</tr>
</tbody>
</table>

Applicants interested in studying English at WSU prior to beginning their graduate studies should write to Intensive English Language Center, Wichita State University, 1845 Fairmount, Wichita, Kansas 67260-0122, USA. Application forms may also be requested by e-mail at international@wichita.edu.

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 Statement of Financial Responsibility 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 this 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 $50 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. Please see the last two paragraphs under the heading "transcripts" on
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:

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

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

c. Coverage to provide for medical evacuation of the student to the student's home country.

d. 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 coursework at Wichita State University but who have not enrolled in the past 24 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.

Exceptions to Regulations
Departures from the rules and regulations stated in the Graduate Catalog 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 and graduate program areas and may be downloaded from the Graduate School Web site. Unusual and/or substantial deviations from stated rules and regulations require action by the Graduate Council.

An electrical and computer engineering professor and a student conduct an experiment in the ECE department’s Optical Laboratory.
Enrollment

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

Grade Reports
At the end of each semester, students may access their final grades through the Shocker One Stop (SOS) option on the Web site (www.wichita.edu). Students desiring a printed report of their grades may make such a request through SOS.

Load Definitions
At least 9 hours of graduate credit coursework is defined as full-time graduate enrollment during the fall or spring semester. During the summer session, a minimum of 6 hours is considered full-time graduate enrollment. Load (total credit hours) does not include audit enrollments. Students enrolling in all or a majority of courses that carry undergraduate credit 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 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 graduate coursework. Exceptions to allow graduate assistants to be enrolled in 6-8 hours may be approved by the department where the student is admitted. 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. This publication is available on the University’s Web site for any given semester.

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

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.

Fees given in this Catalog were proposed for 2004-2005 and may be changed by the Kansas Board of Regents or the Kansas Legislature.

Basic Fees: Proposed 2004-2005
Basic fees for on-campus regular enrollment and continuing education credit courses follow:

<table>
<thead>
<tr>
<th>Category</th>
<th>Resident</th>
<th>Nonresident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate tuition*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per credit hour</td>
<td>$88.25</td>
<td>$336.70</td>
</tr>
<tr>
<td>Designated tuition for technology</td>
<td>1.15</td>
<td>1.15</td>
</tr>
<tr>
<td>Designated tuition for library</td>
<td>1.15</td>
<td>1.15</td>
</tr>
<tr>
<td>Designated tuition for technology infrastructure upgrade</td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Total tuition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>per credit hour</td>
<td>$95.55</td>
<td>$344.00</td>
</tr>
</tbody>
</table>

Student fee—all students
Per credit hour ................................... $20.20 $20.20
University registration fee—all students
Per semester ...................................... $17.00 $17.00
Graduate tuition* 
Per credit hour ................................... $129.20 $402.20
Designated tuition for technology | 1.15 | 1.15 |

Designated tuition for library | 1.15 | 1.15 |
Designated tuition for technology infrastructure upgrade | 5.00 | 5.00 |
Total tuition per credit hour | $136.50 | $409.50 |

*Tuition and fees are for the Fall and Spring semesters and Summer Session.

Workshop and Off-Campus Fees
On-campus credit workshops cost $95.55 tuition and $20.20 student fees, both per credit hour, and $10.50 overhead. In addition, there is a $17 registration fee per semester and a parking fee of $5.50 per credit hour. A specific course fee of $115.55 (undergraduate; includes $20 Area fee) or $164.50 (graduate; includes $28 Area fee) per credit hour is assessed for off-campus regular enrollment and continuing education credit courses or workshops. Non-credit workshop fees are based on costs.

Parking Fees and Fines
Parking fees for students will be assessed at the rate of $5.50 per credit hour, per semester and summer session, up to a maximum of $49.50. Parking fines will be assessed as printed in the University's parking regulations subsequent to the annual public hearing on such regulations.

Auditing Course Fees
Students pay the same tuition and fees per semester hour for audited courses as for credit courses.

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 these 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 12 consecutive months prior to enrollment/re-enrollment and who has demonstrated, during those 12 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 assistants 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 six months of their enrollment at a state university, and who were Kansas residents for fee purposes at, or within 12 months of, high school graduation
(e) dependent students as long as at least one parent is a Kansas resident for fee purposes
(f) persons who were recruited to, or transferred to Kansas within the last 12 months for a full-time job, and their 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.

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
All students are identified in the University’s computer files by a unique nine-digit number. A Social Security number may be used for this purpose, 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.

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, WSU Police Department, and the Shocker One Stop (SOS) system.

Transcripts
Transcripts may be ordered in person at the Registrar’s Office or by written request. Official transcripts are $8 per copy with the fee waived for currently enrolled WSU students. Some quantity restrictions apply. 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 ($8 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.

Exceptions to Regulations
Departures from the rules and regulations stated in the Graduate Catalog 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 and graduate program areas and may be downloaded from the Graduate School Web site. Unusual and/or substantial deviations from stated rules and regulations require action by the Graduate Council.
Academics

Graduate Advisors

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

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

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

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

Courses numbered 500 to 699 are aimed primarily at juniors and seniors, but graduate students may also receive graduate credit for these courses if the student was admitted to Graduate School prior to enrollment in the course. Some graduate programs do not allow courses numbered 500 through 699, which carry graduate credit, to meet degree requirements and students should be aware of such restrictions before enrolling. In such mixed classes, a discernably 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 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 discernably 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 800 and above are restricted to graduate students only or undergraduate students approved for enrollment under the Senior Rule option.

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

Grievance Procedures

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

Conflicts eligible for resolution under these procedures are restricted to academic matters other than grades. Disputes about grades are resolved through the Student Court of Academic Appeals. These procedures do not include conflicts covered by other policies in the University.

Grievances can be initiated for circumstances which are within one year from the time of occurrence.

Steps in the process:

1. A student with a grievance should first consult with the faculty member or administrator perceived to be causing the circumstance which has resulted in the feeling of being wronged and attempt to resolve the conflict at that level.

2. Failure to resolve the conflict in the first step may lead to an appeal at the chairperson or college dean level, depending on who is perceived as causing the circumstance. If available, the student should attempt to resolve the grievance through discussions with the department chairperson, college dean, or through utilization of departmental structures which may exist for this purpose.

3. If the student has exhausted the remedies provided in steps 1 and 2 without success, he/she should schedule a meeting with the Dean of the Graduate School or his/her designee (See Rule of the Graduate Council below). Grievances or appeals must be in writing.

Role of the Graduate Dean: The Dean of the Graduate School or his/her designee receives complaints or protests and decides whether to take direct administrative action to resolve the conflict or refer the grievance to the Graduate Council. A decision of the graduate dean may be appealed to the Graduate Council.

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

Role of the Graduate Council: In addition to being the elected representative of the Graduate Faculty, the Graduate Council serves as the Committee on Exceptions in an advisory capacity to the Dean of the Graduate School. This responsibility may be discharged by the Council acting as a committee of the whole, through Subcommittees, or Ad Hoc Committees consisting of selected members of the Graduate Faculty and graduate student body.

Conclusions reached by the Graduate Council will be transmitted as recommendations to the Dean of the Graduate School.

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

Court of Student Academic Appeals

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

The student must file an appeal within one semester after the grade is assigned (excluding summer). The court reserves the right, in exceptional circumstances, to suspend this rule.

Any student may use the appeal procedure. Forms are available in the Division of Student Affairs, 105 Grace Wilkie Hall. The general procedure is explained to students when they pick up the form.
Audit Credit
Students are permitted in credit courses on a non-credit basis with appropriate approval under an auditor classification. To be enrolled as auditors, students must enroll in the same manner and pay the same fees as for credit courses at the University. Auditors may participate fully in the class and expect instructor evaluation of their work. Auditors are expected to attend class regularly. The audited course will appear on the transcript with the grade notation of AU. A student's load (total credit hours) does not include audit enrollments. Courses taken on the audit basis may be repeated for credit and if repeated may be used to fulfill degree requirements if the repeated grade is acceptable. Use of the audit basis for a course must be declared at the time of enrollment.

Independent and Directed Study Courses
A primary goal of the Graduate School is to encourage independent scholarship. Thus, graduate students have many opportunities to engage in self-initiated independent study under the supervision of an individual member of the graduate faculty. In addition to traditional titles, such as thesis, research project, internship, and practicum, various departments use various titles to identify opportunities for individual study (e.g., independent study, special problems, directed readings, individual projects, and directed study). The following requirements govern enrollment in independent study offerings:

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

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

Grading System

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Distinguished achievement. Credit given; four credit points per semester hour.</td>
</tr>
<tr>
<td>B</td>
<td>Superior achievement. Credit given; three credit points per semester hour.</td>
</tr>
<tr>
<td>C</td>
<td>Average achievement. Credit given; two credit points per semester hour.</td>
</tr>
<tr>
<td>D</td>
<td>Below average achievement. Credit given; one credit point per semester hour.</td>
</tr>
<tr>
<td>F</td>
<td>Failing work. No credit hours earned toward graduation; zero credit points per semester hour. Counted as a course attempted and completed and included in computation of grade point average.</td>
</tr>
<tr>
<td>W</td>
<td>Withdrawal from course. No credit given; no credit points. Does not affect grade point average.</td>
</tr>
<tr>
<td>Au</td>
<td>Audit. No credit given; no credit points. Does not affect grade point average. See Audit Credit, this page.</td>
</tr>
<tr>
<td>S</td>
<td>Satisfactory (A, B, or C). Credit given; no credit points assigned.</td>
</tr>
<tr>
<td>U</td>
<td>Unsatisfactory (D or F). No credit given; no credit points assigned.</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete. Temporarily recorded as a grade when a student is granted an extension of time to complete coursework. Credit is postponed and the course is not included in the student's grade point average until it is completed and a regular letter grade is assigned.</td>
</tr>
<tr>
<td>R</td>
<td>Repeat. A prefix to other grading symbols indicating that the course is a repeat of one taken earlier, such as RA, RB, RC, RD, RF, or RI. The R prefix has no evaluative function but is used for information only.</td>
</tr>
</tbody>
</table>

Grades
Coursework for graduate credit is normally graded A, B, C, D, F, or SU.

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 course 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.

Students desiring credit for an incomplete grade assigned spring 1999 or later for regular courses (excluding research, dissertation, thesis, independent study, 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 program assigning the original I will need to change the I to a W, and the grade earned during the repeat semester will become the grade of record. Faculty members may define other conditions for the removal of incomplete grades within the general framework indicated here.

Probation
Students admitted to full standing in a degree program or nondegree 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 coursework.

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 coursework.

Dismissal
Students in any category may be dismissed from the Graduate School if they fail to maintain a grade point average of at least 3.00 in all work taken (including undergraduate courses) after admission.

Students may be dismissed from their degree program or nondegree category A if they fail to maintain 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 nondegree category.

Following academic dismissal, students who wish to be considered for readmission to Graduate School must first complete a minimum of 9 hours of upper-division, letter-graded coursework, selected with appropriate advisement. These 9 hours cannot include repeat of courses for which graduate credit was previously earned. Such coursework must be completed with a grade point average of 3.00 on a 4.000 scale or higher for the readmission application to be considered. Meeting this standard, along with both Graduate School and program-specific requirements, will permit readmission to a graduate program. Previously dismissed students who are recommended for admission under this policy will re-enter on probation.
Repeats
A graduate student may enroll in graduate courses (for credit) a second or subsequent time and have it counted as part of the semester's load. If a course is repeated, the Graduate School will consider that the last grade earned replaces the original grade for purposes of graduation. Degree completion (including final assessment of overall GPA in the Graduate School, in certifying the student's eligibility for graduation, in certifying completion of certificate programs, and in computing the WSU grade point average). Although the last grade earned becomes the grade of record (replaces original grade), the original course grade remains on the graduate transcript. Within existing departmental and university guidelines, WSU courses repeated at another institution may be used to meet requirements, but the repeat grade will not be counted in the WSU grade point average (as transfer courses are not counted in the WSU grade point average). A student must declare, at the time of enrollment, that the course is being repeated.

Satisfactory/Unsatisfactory Graded Courses
Certain approved courses that carry graduate credit are graded S/U (Satisfactory/Unsatisfactory) for all students enrolled. Courses are identified in the Schedule of Courses, or students enrolled in special offerings for graduate credit will be informed of the S/U grading by the instructor if this system is to be used. Students wishing to transfer graduate coursework graded S/U to a degree program at another institution should, before enrolling, inquire of that institution's willingness to accept credit graded in this manner. No more than 6 hours of work graded S 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 work is approved by the candidate and the advisor and listed on an approved Plan of Study.
2. The work is 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 by an approved Graduate Plan of Study.

Cooperative Education and Work-Based Learning 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 which 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 cooperative education classes should first consult with their major department and the Graduate School. The Cooperative Education and Work-Based Learning Program office is located in 223 Grace Willkie Hall. The telephone number is (316) 978-3688.

Workshop, Extension, Correspondence
Credit, and Credit by Exam
Workshops and extension graduate credit courses may be accepted for graduate credit as 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.

Exceptions to Regulations
Departures from the rules and regulations stated in the Graduate Catalog 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 and graduate program areas and may be downloaded from the Graduate School Web site. Unusual and/or substantial deviations from stated rules and regulations require action by the Graduate Council.
Degree and Certificate Completion

Commencement
WSU holds two commencement ceremonies each year, one in December and one in May. All baccalaureate and master’s degree candidates for spring ceremonies are eligible to participate in the May ceremony and all baccalaureate and master’s degree candidates for the fall semester are eligible to participate in the December ceremony. Baccalaureate and master’s degree candidates for the summer semester are eligible to participate in either the preceding May or following December ceremony. Doctoral degree candidates are eligible to participate in the commencement ceremony held in the semester during which they complete their degree requirements (May or December). Doctoral candidates who complete their program during the summer semester are eligible to participate in the following December or following May ceremony.

Diplomas are available for distribution approximately one month following the close of a given semester. Degree recipients may obtain their diplomas from the Registrar’s office. Diplomas will be mailed from that office upon a written request that includes the name and student identification number of the degree recipient, the complete address where the diploma is to be mailed, and a copy of the degree recipients’ driver’s 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 thesis 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 for committee service 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, the graduate dean’s representative, must be from an academic department outside the major department.

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

certificate $15 filing fee is required according to the above guidelines.

Degree Application
An Application for Degree card and $15 filing fee must be filed with the Graduate School within four weeks (20 class days) after the beginning of any fall or spring semester in which 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 card within two weeks (10 class days) after the beginning of the regular eight-week session even if they plan to enroll for the second four-week session only. 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 and filing fee must be filed within the time frame just described for the semester in which requirements for the degree are again expected to be completed.

Failure to meet these deadlines will result in a delay in graduation and in the awarding of the diploma. In these cases, if all requirements are completed and reported to the Graduate School, students need not enroll for the following semester.

Examinations
Preliminary examinations are administered by several programs to determine students’ qualifications for further graduate study. Qualifying and/or comprehensive examinations are required in all doctoral programs. The candidate passes if no more than two negative votes are cast in a five-member committee.

Most master’s programs also require written or oral comprehensive examinations. The candidate passes if no more than one negative vote is cast in a three-member committee.

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

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. Submission of the proposed Plan of Study requires that the conditions of admission (if any) to the program area have been completed. The proposed plan identifying the completion option 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. Some programs may have earlier deadlines for submitting the Plan of Study.

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

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

The process of filing an acceptable Plan of Study is not completed until the student has received a Degree Check Sheet from the Graduate School. If the Degree Check Sheet has not been received approximately three weeks following submission of the proposed plan, students should check with the Graduate School office.

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

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

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 ten 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 nondegree, 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.

Residency Requirement

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

Time Limits

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

For doctoral programs requiring a master's degree for admission, the doctorate must be completed within six years from the effective 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 a course count toward degree completion, the outdated course must be validated or substituted with a course within the time limits, or a Request for Exemption 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 the form on 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 a part of a student's master's degree program, and for all doctoral students, thesis or dissertation 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 work 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 and officially reported to the Graduate School 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 student on University faculty and facilities.

Students engaged in terminal activities other than thesis, dissertation, or research (e.g., internship, practicum, portfolio, directed project) must be enrolled in courses carrying these titles each semester in which they receive advice, counseling, or research direction from their advisors. This includes the semester of graduation unless all degree requirements are met and officially reported to the Graduate School prior to the first day of classes of the semester of graduation. Such hours in excess of the minimum required for the degree will be graded S. Enrollment is for the number of hours that accurately reflect demands of the student on University faculty and facilities.

Tool or Language Requirements

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

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

Transfer of Credit from Another University

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

1. (a) the credit-offering institution is accredited by the cognizant regional accrediting association to offer graduate degree programs appropriate to the level of credit to be transferred; (b) the credit is fully acceptable at the other institution in satisfaction of its advanced degree requirement; and (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 3.000 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). Programs may require lower limits on transfer credit and therefore students should consult individual program descriptions.

Doctoral, Master of Fine Arts (MFA), and other more lengthy programs have special transfer credit allowances, as indicated in their program descriptions.

3. Doctoral programs may include a maximum of
one-third of the coursework hours required, exclusive of acceptable hours in a master's degree.

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

5. 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 Graduate Plan of Study.

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 3.000 in all courses on the student's WSU Plan of Study (excluding transfer work) and for all graduate work taken at WSU. Grades below C may not be used to satisfy degree requirements, but such grades earned, beginning Fall 2001, may be repeated. 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 coursework (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), 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 officially reported to the Graduate School prior to the first day of classes of the semester of graduation. Such enrollment recognizes the use of university resources, including faculty and staff, as part of degree completion.

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

9. 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.

Exceptions to Regulations

Departures from the rules and regulations stated in the Graduate Catalog 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 and graduate program areas and may be downloaded from the Graduate School Web site. Unusual and/or substantial deviations from stated rules and regulations require action by the Graduate Council.
Financial Opportunities

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

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

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

Students must be admitted to a degree program in either full standing or conditional status. Students admitted on probation or placed on academic probation following admission are not eligible for assistantship awards. Undergraduate students admitted under the Senior Rule option are not normally considered for assistantship awards.

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

A graduate teaching assistantship may qualify the recipient for up to a 100 percent waiver of tuition. Graduate students must provide service from the 20th day of the semester through the remainder of the semester to be eligible for the non-resident tuition waiver. Only courses numbered 500 and above are eligible for full or partial waiver of in-state tuition for graduate teaching assistants. 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.

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

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 programs offering graduate assistantships, fellowships, and scholarships are referred to the graduate school Web site or the program area of their interest.

General Awards
The Graduate School oversees and distributes 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
Phone: (316) 978-3095
E-mail: gradinqu@wichita.edu

Dora Wallace Hodgson Outstanding Graduate Student Awards
Established through a donation to the WSU Foundation 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 Master's Non-Thesis Award. 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, and approval by the Graduate School awards committee and Associate Dean of the Graduate School.

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. Laffen L. and Verna Nye Camien Fellowship
The Dr. Laffen 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.

WSU Foundation 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 Foundation 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 3 hours but not more than 8 hours, and who qualify for financial assistance. Applications 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.

Research Fellowships
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 coursework related to the proposed course of study. Applications are due by the first Monday in October for fall; first Monday in February for spring.

The Robert and Darlene Anderson Fellowship
The Robert and Darlene Anderson Fellowship is awarded to a school nurse pursuing graduate study in any graduate program. The award is made without regard to financial need and may be renewable based on satisfactory academic progress.

Special Research Fellowships
Special Research Scholarships encourage research among graduate students and recognizes 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 for admission to Graduate School is received in the Graduate School by February 1 for the following fall semester. Graduate students admitted on probation or placed on academic probation following admission are not eligible for 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.

<table>
<thead>
<tr>
<th>Enrollment Period</th>
<th>Due Date</th>
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<tr>
<td>Spring</td>
<td>November 1</td>
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<tr>
<td>Summer</td>
<td>April 1</td>
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<td>Fall</td>
<td>March 15</td>
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Work Opportunities
The Kansas Career Work-Study Program is administered by Wichita State’s Office of Cooperative Education and Work-Based Learning 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 and Work-Based Learning 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.

Exceptions to Regulations
Departures from the rules and regulations stated in the Graduate Catalog 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 and graduate program areas and may be downloaded from the Graduate School Web site. Unusual and/or substantial deviations from stated rules and regulations require action from the Graduate Council.

Students in WSU’s art and design programs have the opportunity to exhibit their work in the Clayton Staples Gallery.
General University Policies

Human Relations

Notice of nondiscrimination.
1. It is the stated policy of Wichita State University to prohibit discrimination in employment and in educational programs and activities because of race, color, religion, gender, age, marital status, national origin, sexual orientation, political affiliation, disabled/Vietnam-era veteran status, or physical or mental disability.
2. In working to achieve and maintain a welcoming and discrimination-free environment, it is necessary and appropriate that employees and students be encouraged to make complaints and concerns about perceived discriminatory behaviors known to University supervisors and officials.
3. Any University employee or student who engages in retaliatory conduct against a University employee or student who has filed a complaint alleging discrimination or otherwise exercised their rights and privileges against illegal discrimination will be subject to disciplinary actions pursuant to established University procedures, up to and including termination of employment or student status.
4. This prohibition against retaliatory conduct applies regardless of the merits of the initial complaint of illegal discrimination.
The Vice President and General Counsel and the Office of Human Resources shall have primary responsibility for publication, dissemination, and implementation of this University policy.

Any person having inquiries concerning Wichita State University's compliance with the regulations implementing Title VI, Title IX, or Section 504 is directed to the Office of Equal Employment Opportunity, Wichita State University, 1845 Fairmount, Wichita, 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 the 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 Graduate Catalog 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
6. To answer promptly to 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) 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.

Student Code of Conduct

Wichita State University is a learning community comprised of students, faculty, and staff committed to the highest pursuit of intellectual inquiry and knowledge. As members of the WSU community, we:

1. Practice personal integrity and academic honesty.
2. Value the worth, dignity, and uniqueness of each person through words and actions
3. Demonstrate civic responsibilities by being involved members of the University and the greater Wichita community.
4. Respect University property, the surrounding environment, and the personal possessions of others.

The educational process is ideally conducted in an environment that encourages reasoned discourse, intellectual honesty, openness to constructive change, and respect for the rights and responsibilities of all individuals. The Student Code of Conduct is designed for the promotion and protection of such an environment. It provides guidelines for students' behavior as well as an overview of the discipline process.

A. Definitions

"Faculty member" means any person hired or appointed by the University to teach.
"Student" includes all persons taking credit and non-credit courses at WSU, both full-time and part-time; pursuing undergraduate, graduate, or professional studies.
"Policy" is defined as the written guidelines of the University as found in, but not limited to, The Housing and Residence Life Handbook, Graduate/Undergraduate Catalogs, Faculty Handbook, University Policy and Procedures Manual, and Board of Regents' policies. The most current version of the University Policy & Procedures Manual is located at www.wichita.edu under "Administration-More Administration."

In cases of conflicts, Board of Regents' policies shall be considered as controlling.

B. Academic Dishonesty

Students who compromise the integrity of the classroom are subject to disciplinary action on the part of the University. Further, it is the policy of the Kansas Board of Regents that student academic dishonesty should not be tolerated. 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 abusiveness toward faculty or fellow students.
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 personnel within the institution who have a legitimate educational interest, to persons or organizations providing students financial aid, to accrediting agencies carrying out their accreditation function, to persons in compliance with a judicial order, 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; A Social Security number and student status data may be provided to other state agencies for use in detection of fraudulent or illegal claims against state monies.

Public Notice 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 persons other than those providing treatment except that such records may be personally reviewed by a physician or other appropriate professional of the student's choice and with the student's written consent.
(3) Records of the WSU Police Department maintained solely for law enforcement purposes, which are maintained separately and which are not disclosed to individuals other than law enforcement officials sharing the same territorial jurisdiction.
(4) Records that contain only information relating to a person after that person was no longer a student at the University. An example would be information collected by the University or the WSU Alumni Association pertaining to the accomplishments of its alumni.
(5) Employment records of any person if maintained in the normal course of business and used only for purposes relating to the employment, unless the person is employed at the University only because of her/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.
F. Parent: includes a parent, a guardian, or an individual acting as a parent of a student in the absence of a parent or guardian.
G. Personally Identifiable Information: includes the name of the student; the student's parent 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.

1. 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 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 or expense; however, the charge to the student for any such records may not exceed $.25 per page. The University may not charge a fee to search for or retrieve a record. If any question arises as to the identity of the requesting student, the student shall be asked to provide his or her University 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 education records prior to January 1, 1975, if such letters were submitted with an understanding of confidentiality, and are used only for the purpose for which they were specifically intended;

(3) Confidential letters and statements of recommendation received after January 1, 1975, for which the student has signed a waiver of the right to access and which pertain to: (a) admission to this or any other educational institution or agency; (b) application for employment; (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 (unless judicial order of subpoena specifically prohibits such contact); 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 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) In the event the unit custodian disapproves the student's request to delete or modify the record in question, the student shall be notified by the unit custodian, in writing, of the decision and of the student's right to a formal hearing upon the request.
(a) All requests for formal hearings by the student shall be directed to the Vice President for Student Affairs, and shall contain a plain and concise written statement of the specific facts constituting the student's claim.
(b) The hearings shall be conducted by a University staff member (hearing officer) who does not have a direct interest in the outcome of the challenge and who shall be appointed by the Vice President for Student Affairs or designee. The hearing shall be held within a reasonable time of receipt of the student's request, and the student shall be notified reasonably in advance by the hearing officer of the date, place, and time of the hearing.
(c) At the hearing the student shall be afforded a full and fair opportunity to present evidence relevant to claim and may, at his or her expense, receive assistance or be represented by any individuals of choice.
(d) Based solely on the evidence presented at the hearing and within ten (10) working days of the hearing, the hearing officer shall make a written recommendation to the 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.
(1) 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 records and/or setting forth any reason for disagreeing with the decision. If the questioned document is released to a third person, the student's summary statement shall accompany the release of any such information. The summary information shall be maintained for as long as the contested record is maintained.
(2) 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.

11. 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.
(1) 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, 200 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 99.54 and following of the Privacy Act.

Offender Registry
Law enforcement agency information concerning registered sex offenders who are employed by or who are currently enrolled at Wichita State University may be obtained from the University Police Department. This information is made available to the campus community pursuant to the requirements of the Campus Sex Crimes Prevention Act. Further information on any registered offender can be obtained from the Kansas Bureau of Investigation or the sheriff's office in the registrant's county of registration.

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.

Safety
Campus safety is a priority at Wichita State, and based on FBI statistics reported by universities nationwide, WSU is one of the safest campuses of its kind in the state and nation. Our well-lighted campus and parking lots are regularly patrolled by WSU police officers and student cadets. Beginning at 5:30 p.m., the University provides shuttle bus service from residence halls to the academic buildings, and student cadets are available to escort students in the evenings. In case of emergencies, phones (designated by a blue light at the top of the pole) with direct access to the campus police station are strategically placed around the campus.

Campus crime statistics are reported in the Schedule of Courses and on the Web. Contact the University Police Department at (316) 978-3450.
W. Frank Barton School of Business

Offices: 100 Clinton Hall
John M. Beehler, dean
James Clark, associate dean
Diane Coleman, assistant dean, undergraduate student support
James Wolff, associate dean, graduate studies

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

The mission of the W. Frank Barton School of Business is to prepare individuals to be business leaders in the global entrepreneurial marketplace. In this effort, we will:

- provide quality undergraduate, graduate, and professional educational programs in business that encourage lifelong learning;
- engage in scholarly research to develop business and economic knowledge and enhance its applications; and
- practice good citizenship by serving our constituencies and the University community.

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 Barton School of Business faculty is committed to programs and activities that will help sustain the contribution that this urban center makes to the economic, professional, and cultural health of the state and nation.

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

**Students:** Students are the reason for the Barton School’s existence. It is the faculty’s responsibility to create programs and 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 and to increase quality and quantity of students.

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

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

Programs: The programs offered by the Barton School link it to its multiple constituencies. The rich diversity of these programs reflects the University’s unique metropolitan mission.

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

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

Graduate degree programs in the school lead to the Master of Business Administration (MBA), Master of Accountancy (MACC), and the Master of Arts (MA) in economics.

**Master of Accountancy**

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

The School of Accountancy recognizes students need differing technical requirements to enter a diverse work environment. Two specialized concentrations are offered to complement the traditional emphasis: Accounting Information Systems (AIS) and Taxation. The AIS concentration satisfies students’ need for increasing technical competence in the area of accounting systems analysis, development, and implementation. The taxation concentration focuses on advanced issues in taxation, including the area of research.

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 MACC degree.

**Admission Requirements**

Admission to the MacC 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 MACC 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 60 hours plus the GMAT score.

Students who meet all the requirements above, except for lacking more than 9 hours of preprofessional curriculum, may be admitted on a conditional basis. These 9 hours must be completed in the first semester following conditional admission or as soon thereafter as course scheduling permits.

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 grade point average on the last 60 hours plus the GMAT score or a total of 1,050 points based on the formula of 200 times the overall GPA plus the GMAT score). They will be expected to take courses covering any portion of the preprofessional curriculum for which they have not had an equivalency as soon as practicable.

All students are required to meet with the School of Accountancy's graduate advisor prior to beginning course work.

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 MACC program requirements and have the potential for a successful career in professional accounting.

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 shall total 30 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 MACC 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 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 431, Introduction to Federal Income Tax</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 560, Accounting Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 610, 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>B LAW 431, LEGAL Environment of Business or B LAW 435, Law of Commercial Transactions, and B LAW 436, Law of Business Associations</td>
<td>3-6</td>
</tr>
<tr>
<td>D S 350, Introduction to Production and Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>M S 495, Management Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201, Principles of Macro-Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202, Principles of Micro-Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 231, Introductory Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>FIN 340, Financial Management I</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 360, Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 361, International Business</td>
<td>3</td>
</tr>
<tr>
<td>MKT 300, Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MATH 111, College Algebra</td>
<td>3</td>
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<tr>
<td>MATH 144, Business Calculus</td>
<td>3</td>
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</tbody>
</table>

The following graduate-level course work must be completed:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs.</th>
</tr>
</thead>
<tbody>
<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 Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Graduate electives outside accounting</td>
<td>9</td>
</tr>
<tr>
<td>Other graduate electives (accounting or nonaccounting)</td>
<td>6</td>
</tr>
</tbody>
</table>

Students Not Possessing a Bachelor's Degree at Time of Admission
Preprofessional Curriculum
Students pursuing the Master of Accountancy (MACC) are required to meet specified 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 nonbusiness courses for 63 semester hours. Students planning to sit for the CPA exam are encouraged to take an upper-division economics course as part of the nonbusiness courses. The following courses are specifically required by the School of Accountancy and may be counted within this 63 hours:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>ECON 201Q, Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202Q, Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 231, Introductory Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 232, Statistical Software Applications</td>
<td>2</td>
</tr>
<tr>
<td>COMM 111, Basic Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 210, 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 24 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</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 220, Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 260, Introduction to Information Processing Systems</td>
<td>3</td>
</tr>
<tr>
<td>B LAW 431, LEGAL Environment of Business, or B LAW 435, Law of Commercial Transactions, and B LAW 436, Law of Business Associations</td>
<td>3-6</td>
</tr>
<tr>
<td>D S 350, Introduction to Production and Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>M S 495, Management Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201, Principles of Macro-Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202, Principles of Micro-Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 231, Introductory Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>FIN 340, Financial Management I</td>
<td>3</td>
</tr>
<tr>
<td>I B 333, International Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 360, Concepts of Administration</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>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 431, 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 MACC 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 MACC degree.
Professional Curriculum
Candidates in the professional curriculum who have completed the minimum preprofessional curriculum outlined above, must complete 54 credit hours in the following courses while maintaining an overall average grade of 3.00 or better.

Courses  Hrs.
ACCT 650, Accounting Information Systems ....................3
ACCT 660, Financial Accounting and Reporting: Special Entities and Complex Issues ....................3
ACCT 680, Accounting for Strategic Support and Performance Evaluation ....................3
ACCT 690, Taxation of Business Entities ....................3
ACCT 693, Principles of Auditing ....................3
Remaining Barton School of Business core requirements* .................................................................6-9
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 850, Advanced Accounting Information Systems ....................3
MGMT 885, Advanced Strategic Management ....................3

Graduate electives outside accounting ..........................9
Other graduate electives (accounting or nonaccounting)** ..........6

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 155 credit hours (undergraduate and graduate) is required.

* See list of courses under Preprofessional Curriculum. Core courses taken after admission to the MACC program must be graduate-level equivalent courses.
** Electives must be selected to conform to AASB standards for masters in accounting programs. See the graduate coordinator of the School of Accountancy for assistance in making selections.

Concentrations in Master of Accountancy Degree Program
Accounting Information Systems
Students electing a concentration in accounting information systems (AIS) must take the following courses:

Courses  Hrs.
Accounting core courses (615, 825, 835, 840, 860) ..........................15
ACCT 660, Tech, Risk Mgmt, Sec & Control ....................3
One 600- or 800-level MIB course selected with consent of graduate advisor ....................3
Graduate electives, including 6 hours outside of accounting ....................9

Taxation
Students electing a concentration in taxation must take the following courses:

Courses  Hrs.
Accounting core courses* (815, 825, 835, 840, 860) ..........................15
ACCT 830, Taxation of Business Entities—Advanced Topics ....................3
Graduate electives, all outside of accounting ....................9

* Students may substitute one tax class (either ACCT 630 or 692) for either ACCT 815, 825, 840, or 860, with consent of the School of Accountancy.

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 concentration are available for those students wishing to focus their elective course work in a specialized area. Concentration areas currently available are finance, marketing, entrepreneurship, operations management, international business, and health care administration. Others are under consideration and may be added in due course.

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 36 to 48.

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 sound scholarship, strong personal motivation, and the ability to develop skills necessary to assume positions of leadership.

Admissions decisions are based on the following:

• Graduate Management Admission Test (GMAT) scores - overall score and component (i.e., verbal, quantitative, and analytical writing) scores are evaluated.

• "Personal Goals" essay that clearly articulates the applicant's reasons for seeking admission (500 words maximum)

• Two reference forms completed by faculty, employer, or suitable referee.

• Current resume (career-based work experience is desirable but not required).

Final admission of qualified applicants may be based on space available in the MBA program.

International students also are required to have a minimum score of 570 (paper-based) or 230 (computer-based) 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 June 1 for consideration for fall admission and November 1 for spring admission. International applicants living outside the United States must submit their applications by April 1 for fall admission consideration and August 1 for spring admission consideration. Applicants who apply after these deadlines are considered in the order in which their completed application materials are received.

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 preparatory courses, depending on the depth of their undergraduate or previous graduate preparation. The MBA program may consist of as few as 36 hours for students who have no deficiencies in prerequisites and who receive equivalent credit for all of the background fundamentals.

Students Not Receiving Advanced Standing: Students with bachelor's degrees in nonbusiness fields usually will not have backgrounds warranting the granting of advanced standing through equivalency credit.

There are some exceptions. Some students, for example, may have had enough coursework in economics or statistics to be granted credit for these courses. Determination regarding equivalency credit will be made following admission to the program.

MBA Course Requirements

• Prerequisite
MATH 144, Business Calculus ....................................3

**Preparatory Courses
ECON 231, Introductory Business Statistics ....................3
MBA 800, MBA Basics: Financial Statement Analysis ....................3
MBA 801, MBA Basics: Management and Marketing ........................................... 3
ECON 800, Analysis of Economic Theory ......................................................... 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 the 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
D S 850, Operations Management .................................................................... 3
M I S 874, Management Information Systems .............................................. 3

Concentration Electives .................................................................................. 9

* 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.

Policies
1. All incoming MBA students must attend an orientation session, which includes an introduction to the philosophy of graduate business education, development of networking skills, discussions about the history of the Barton School and the MBA program, and an overview of success strategies for MBA students. Only after completion of the orientation is a student considered for full standing in the MBA program.
2. A candidate's individual Plan of Study must be approved by the director or associate director and submitted to the Graduate School for final approval. This plan must be filed within a month of the completion of 12 hours of graduate work.
3. All candidates must complete 30 hours of 800 level courses including: ACCT 801, D S 850, ECON 804, FIN 850, MGMT 803 or MKT 803, MGMT 862, MGMT 885, Mkt 801, M I S 874, and 3 hours of electives. The additional 6 hours of electives may be at either the 800 level or the 600 level.

Concentrations in Master of Business Administration Degree Program
The MBA degree program is a general management degree equipping students with an understanding of organizations as integrated systems. Within the program the curriculum provides knowledge across organizational functions. Students may continue this generalist approach by choosing courses across a broad spectrum of offerings to complete the elective component of the curriculum. Some students may wish to focus their elective course work in a specific area of study to enhance their general organizational knowledge base by selecting a concentration from the following options provided in the MBA program.

MBA—Technology and Operations Management
The Technology and Operations Management (TOM) concentration provides the opportunity to gain expertise in the area of managing manufacturing and service systems. This concentration focuses on various decision-making frameworks and models in environments where operations and technology are strategic advantages. It emphasizes the strategic and tactical management of a firm's supply chain, quality, manufacturing, and service processes; and perfect planning/control through the use of technology-intensive tools. The concentration prepares MBA students to meet challenging responsibilities as manufacturing and service managers, project managers, supply chain managers, and other rewarding positions in today's contemporary organization.

The TOM concentration requires 9 semester hours of coursework from a specified list of courses. DS 850, Operations Management, must be taken prior to or concurrent with courses comprising the concentration. Students may take no more than two 800- or 700-level courses.

Course requirements for the concentration follow:
Select a minimum of two courses from the following:
D S 851 Advanced Operations Management
D S 860 Enterprise Resource Planning
D S 865 or I EN 780N Supply Chain Management
D S 875 Management Science
D S 876 Advanced Management Science
D S 890 Seminar in Special Topics
If only two of the above are selected, one of the following may be taken to complete the concentration requirements:
I E N 740 Analysis of Decision Processes
I E N 780S Lean Manufacturing
MIS 650 Knowledge Management
MIS 884 Database Planning Management

MBA—Entrepreneurship
The MBA—Entrepreneurship concentration provides the foundation for developing one's own business, moving into a leadership role in a family business, or managing innovation and new business formation in a corporate setting. Building on the MBA curriculum, the entrepreneurship concentration enhances the ability to cope with the full range of issues in evaluating markets; developing business ideas, new product, and process innovation; and writing business plans. The specialized knowledge helps students understand the business startup process and related managerial issues.

The entrepreneurship concentration requires 9 semester hours of coursework from a specified list of courses. Students may take no more than two 800- or 700-level courses.

Course requirements for the concentration in entrepreneurship:

Required
ENTRE 888, New Venture Feasibility Seminar or equivalent
Elective

MBA—Finance
The MBA—Finance concentration prepares students for a career in corporate finance, the investment field, or with financial institutions. The specialized knowledge provides the necessary foundation for understanding organizational financial management issues. Our curriculum blends theory with applied business practice to prepare students for the varied activities involved in financial management. Students also gain experience with many different financial analysis tools that facilitate problem-solving. Most advanced courses involve cases or projects requiring computer modeling and analysis.

The finance concentration requires 9 semester hours of coursework from a specified list of courses. FIN 850, Managerial Finance, must be taken prior to or concurrent with courses that comprise the concentration. Students may take no more than two 800- or 700-level courses.

Course requirements for the concentration in finance:

Required
FIN 860, Cases in Financial Management and Investments
Elective
FIN 821, Investment Analysis and Portfolio Management
FIN 823/ECON 847, Risk Management with Options and Futures
FIN 625/ECON 674, International Finance
FIN 830, Financial Institutions and Markets
FIN 870, Financial Modeling

MBA—Health Care Administration
The MBA—Health Care Administration concentration offers the opportunity to study business administration at the graduate level with particular emphasis on health care management. Building on the MBA curriculum, this concentration provides understanding and knowledge of the issues facing organizations in the health services industry. The specialized knowledge will help students cope with managerial processes in the dynamic health care industry.

The health care administration concentration requires 9 semester hours of coursework from a specified list of courses.

Course requirements for the concentration in health care administration:

Required
ENTRE 608/MKT 608, Selling and Sales Force Management
ENTRE 620, Growing and Managing an Entrepreneurial Firm
ENTRE 869, Corporate Entrepreneurship
MKT 805, Consumer Decision Processes

Elective
PHS 812, Health Care Policy and Administration
PHS 814, Social and Behavioral Aspects of Public Health
PHS 7508, Geographic Information Systems in...
Community Epidemiology
PHS 826, Politics of Health Policy Making

PHS 831, Essentials of Health Insurance and Managed Care
PHS 833, Health Economics
PHS 834, Financing Health Care Services
PHS 835, Organization, Financing, and Delivery of Health Care
PHS 841, Leadership and Change Agency in Public Health
PHS 858, Long Term Care Systems

**MBA—International Business**
The MBA—International Business concentration allows students to benefit from specific international business course work while completing MBA degree requirements. This concentration was created for students who want to obtain a solid foundation of knowledge with respect to international business. All students electing this option will have grounding in the contemporary issues affecting global business and the organizational issues facing firms operating in the global arena. Our curriculum blends theory with applied business practice to prepare you for the varied activities involved in conducting business in a global marketplace.

The international business concentration requires 9 semester hours of course work from a specified list of courses. Students may take no more than two 600- or 700-level courses.

Course requirements for the concentration in international business (IB):

**Elective**
IB 600, International Management
IB 601, International Marketing
IB 625, International Financial Management
IB 836, International Business and Competitiveness
IB 891, Directed Study in International Business
IB 892, Internship in International Business
ECON 672, International Economics and Business
FIN 625/ECO 674, International Finance and Investment
POL S 835, Seminar in International Relations

**MBA—Marketing**
The MBA—Marketing concentration prepares students for a career in general marketing, marketing management, marketing research, and services marketing. Our curriculum focuses on the fundamental marketing concepts, current marketing practices, and emerging marketing techniques. The specialized knowledge provides the necessary foundation for a solid understanding of the marketing function for organizational success.

The marketing concentration requires 9 semester hours of course work from a specified list of courses. MKT 801, Marketing Management, must be taken prior to or concurrent with courses comprising the concentration. Students may take no more than two 600- or 700-level courses.

Course requirements for the concentration in marketing:

**Elective**
MKT 601/IB 601, International Marketing
MKT 607, Promotion Management
MKT 608/ENTR 608, Selling and Sales Force Management
MKT 690E, Principles of Online Marketing
MKT 805, Consumer Decision Processes
ENTR 869, Corporate Entrepreneurship
COMM 865, Organizational Communication
IB 601, International Marketing

**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 (paper-based) or 213 (computer-based) 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 special topics courses.

**EMBA Requirements**

<table>
<thead>
<tr>
<th>Courses</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>E MBA 800, Statistical Analysis and Quantitative Methods for Decision Making</td>
<td>3</td>
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<tr>
<td>E MBA 801, Human Behavior and the Management of Organizations</td>
<td>3</td>
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<tr>
<td>E MBA 802, Marketing for Executive Management</td>
<td>3</td>
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<td>E MBA 803, Economic Analysis for Managers</td>
<td>2</td>
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<td>E MBA 804, Operations Management</td>
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<tr>
<td>E MBA 805, Global Business and Competitiveness</td>
<td>2</td>
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<tr>
<td>E MBA 806, Using Accounting Information to Understand Financial Performance</td>
<td>2</td>
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<tr>
<td>E MBA 807, Corporate Finance</td>
<td>3</td>
</tr>
<tr>
<td>E MBA 808, Using Accounting Information to Improve Strategic and Operational Performance</td>
<td>3</td>
</tr>
<tr>
<td>E MBA 809, Information Technology</td>
<td>2</td>
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<tr>
<td>E MBA 810, Managerial Investment Strategies</td>
<td>2</td>
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<tr>
<td>E MBA 811, Managerial Strategy</td>
<td>3</td>
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<tr>
<td>Electives</td>
<td>5</td>
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**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 sub-specialty 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 2.750 for the last 60 hours of 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, all 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 com-
puter-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 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
ECON 740, Monetary Problems and Policy 3
Three additional courses in economics or finance and a 3-hour research project (12 credit hours) or two additional courses in economics or finance and 3 hours of thesis (9 credit hours).

International Economics Track
ECON 672, International Economics and Business 3
ECON 674, International Finance (cross-listed as FIN 625) 3
ECON 870, International Finance and Investment 3
Two additional economics/international related courses (such as 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).

Accounting (ACCT)
School of Accountancy

Courses for Graduate/Undergraduate Credit

ACCT 500, 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: junior standing, advanced 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; senior standing, advanced standing.

ACCT 620, Accounting for Strategic Support and Performance Evaluation (3). The use of accounting information to assist management in developing and identifying superior strategies to produce and sustain comparative and/or competitive advantages. Focuses on goal-congruent strategies and incentives. Prerequisites: junior standing, ACCT 320, advanced standing.

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, ACCT 430 or equivalent, advanced standing.

ACCT 631, 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 controls. Prerequisites: ACCT 410 and 560, senior standing, advanced standing.

ACCT 660, Technology, Risk Management, Security and Control (3). Studies issues in technology, risk management, security, and control. Accounting background not required. Prerequisites: junior standing, advanced standing.

ACCT 690, Seminar in Selected Topics (1-3). Repeatable for credit with School of Accountancy consent. Prerequisite: junior standing, advanced standing.

ACCT 777, Review for Professional Examinations (1-6). 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. Prerequisite: 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 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. Prerequisites: graduate standing and ACCT 800 or equivalent, or permission of the School of Accountancy. This course is not available for credit in the Master of Accountancy program.

ACCT 815, Financial Accounting and Reporting: Contemporary Issues (3). Uses the case method and financial accounting databases to examine and analyze the application of generally accepted accounting principles to problems of measurement, presentation, and disclosure in financial statements. Focuses on contemporary topics of interest in financial accounting and reporting. Prerequisites: graduate standing and ACCT 610 or equivalent, or permission of the School of Accountancy.

ACCT 825, Management Control Systems (3). Studies accounting in the context of management control systems. Focuses on how accounting interacts with management in achieving an organization's strategic and operational objectives. Emphasizes contemporary challenges in accounting related to broadening the types of information captured, measured, and reported. Prerequisites: graduate standing and ACCT 620 or 801 (or equivalent), or permission of the School of Accountancy.

ACCT 830, Taxation of Business Entities—Advanced Topics (3). Analyzes various advanced topics in the taxation of business systems. Focuses on the use of various entity forms to achieve optimal tax and business objectives. Also considers the tax consequences of conducting business internationally. Prerequisites: graduate standing and ACCT 630 or equivalent, or permission of the School of Accountancy.

ACCT 831, Taxation of Estates and Trusts (3). Studies the income taxation of trusts and estates, including the special cases of grantor and split-interest trusts. Examines the taxation of decedents, 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 introduction to state, multistate, and international taxation. Prerequisites: graduate standing and ACCT 630 (or equivalent), or permission of the School of Accountancy.

ACCT 840, Advanced Auditing (3). An advanced study of auditing emphasizing auditing computerized systems, state-
courses, taxation, and ethics. Prerequisites: graduate standing and ACCT 410 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 times, 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 880. Seminar in Special Topics (1-3). Repeatable with permission of the School of Accountancy.

ACCT 891. Directed Study in Accounting (1-3). Prerequisite: School of Accountancy consent.

ACCT 892. Internship in Accounting (3). Offered Cr/No Cr only. Prerequisites: 3.000 GPA in accounting, graduate standing, and School of Accountancy consent.

Business Law (B LAW)

Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit

B LAW 635. Law of Commercial Transactions (3). Law of contracts, bailments, sales, commercial paper, and secured transactions. Centers on the Uniform Commercial Code. Credit will not be granted for both B LAW 435 and 635. Prerequisite: junior standing, advanced standing.

B LAW 636. Law of Business Associations (3). Law of agency, partnerships, and corporations. Considers the organizational and relational aspects of both small, closely held businesses and large corporate enterprises. Prerequisite: junior standing, advanced standing.

B LAW 690. Seminar in Selected Topics (1-5). Repeatable with departmental consent. Prerequisite: junior standing, advanced standing.

Courses for Graduate Students Only

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

Decision Sciences (D S)

Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit

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

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

Courses for Graduate Students Only

DS 850. Operations Management (3). Develops an understanding of the operations function in a business and how it interfaces with other major functions in business. Students gain an appreciation of the strategic importance of operations and how a firm can gain competitive advantage through world-class performance by operations in delivering high-quality, cost-competitive products and services. Builds a knowledge base of the concepts, tools, and techniques related to designing, managing, and improving operations. Helps managers, regardless of functional specialization, gain an "operations perspective." Prerequisites: calculus and statistics.

DS 851. Advanced Operations Management (3). This is an advanced course in the conceptual and applied aspects of Operations Management in the manufacturing and non-manufacturing sectors, as well as on the Internet. The thrust of the course is on strategic issues, process analysis, and the role of technology in supporting Operations. Students will learn how software, like SAP if available, can perform Operations Management tasks. Case studies will be used. Prerequisite: DS 850 or equivalent.

DS 860. ERP-Enterprise Resource Planning (3). This course provides an overview of Enterprise Resource Planning (ERP) and related systems like CRM. E-Commerce systems are designed to assist an organization with the integration and management of its business processes. ERP systems can be expensive and time-consuming to implement. Topics covered include the ERP Life Cycle for Implementation and Change Management. Students will get hands-on exercises with ERP software, like SAP, if available. Prerequisite: DS 850 or equivalent.

DS 865. Supply Chain Management (3). This course introduces concepts, models, and solution approaches critical to management of a supply chain. The focus will be on understanding how supply chain design and operation impact the performance of the company and its competitive advantage. Topics covered include strategy development, profitability, demand forecasting, inventory management, facility location, warehousing, transportation, network design, and information sharing. Prerequisite: DS 850 or equivalent.

DS 875. Management Science (3). This course gives an overview of management science techniques that can be used to solve decision problems in different business functional areas (operations management, finance, marketing, and HR). Students gain analytical skills that make them better decision makers regardless of their area of specialization. The course is example-driven and spreadsheet-based. Prerequisite: DS 850 or equivalent.

DS 876. Advanced Management Science (3). This course is designed to provide an in-depth approach to selected management science techniques and apply them to a real-world business problem. Students will be responsible for the problem definition, data gathering, modeling building, and model testing. Students will also develop a decision support system that uses the model as its engine and easy-to-use interfaces for data input and output. Prerequisite: DS 875 or equivalent.

DS 880. Seminar in Special Topics (1-3). Repeatable with departmental consent.

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

Economics (ECON)

Department of Economics

Courses for Graduate/Undergraduate Credit

ECON 605. History of Economic Thought (3). A critical analysis of the development of economic thought, the factors that influence this thought and its impact upon the social and economic development of the modern world. Prerequisite: junior standing.

ECON 611. Economics of Sports (3). An inquiry into the economic aspects of professional and intercollegiate sports. Includes industrial organization of sports, public finance of sports, and the labor economics of sports, as well as the unique competitive nature of the sports enterprise. Not applicable toward the MA in economics. Prerequisite: junior standing.

ECON 614. Industrial Economics and Antitrust Policy (3). Examines the behavior of firms within industries emphasizing antitrust policy. Includes pricing behavior, distribution policies, entry deterrence, advertising, and mergers. Prerequisite: junior standing.

ECON 615. Economics of Transportation (3). A study of how businesses can effectively use transportation both nationally and internationally. Includes the physical and economic characteristics of transportation modes, basic concepts of logistics, and problems and policies related to transportation. Prerequisite: junior standing.

ECON 617. Economics of Regulation (3). A study of the theory and practice of regulation. Includes both the traditional regulation of public utilities and communications and the newer forms of regulation, such as safety and environmental regulations. Prerequisite: 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. Prerequisite: junior standing.

ECON 627. Economic History of the United States (3). Cross-
listed as HIST 315. 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. Prerequisite: 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. Prerequisite: 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. Prerequisite: 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 various wage theories. Prerequisite: junior standing.

ECON 663. Economic Insecurity (3). Cross-listed as GERON 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. Prerequisite: 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: junior standing.

ECON 672. International Economics and Business (3). Cross-listed as MGMT 561. A survey of the economic foundations of international trade, finance, and investment. Includes foreign exchange markets, regional integration, trade theories and instruments, U.S. trade policies and treaties, multinational companies, immigration, as well as differences in cultural, political, and economic systems. Includes current events. Prerequisites: 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 340, 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 macroeconomic and macroeconomic levels. Stresses the application of regional economic analysis in the study of urban areas as economic regions. Prerequisite: 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. Prerequisite: junior standing.

ECON 731. Applied Econometrics I (3). A study of regression techniques through business, finance, and economics examples. Reviews the fundamentals of statistics and covers practical model building, data collection, use of statistical software packages, interpretation of regression results, and various diagnostic tests. Prerequisite: 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 340, junior standing.

ECON 759. Workshop in Economics (1-3). 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: junior standing or instructor consent.

ECON 766. Public Sector Economics (3). Cross-listed as P. Adm. 765. An intensive analysis of contemporary public 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: economics instructor's consent.

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. Prerequisite: ECON 302 and 702.

ECON 803. Analysis of Business Conditions and Forecasting (3). An intensive study of research methodologies and forecasting for real life business decision-making. Covers formulation of research questions, specification of models, collection of time series and survey data, applications of forecasting techniques, and interpretation and communication of the results. 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; one course in statistics; one course in calculus.

ECON 831. Applied Econometrics II (3). Introduces the maximum likelihood estimation and the methods of inverse 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 202 and 340.

ECON 847. Speculative Markets (3). Cross-listed as FIN 847. 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 851. 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: Economics 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). Individual study of various aspects and problems of economics. Repeatable for credit with departmental consent. Prerequisites: graduate standing and departmental consent.

ECON 892. Group Studies in Economics (1-3). Repeatable for credit. Prerequisite: departmental consent.

ECON 896. Thesis (1-2).
Entrepreneurship (ENTRE)

Department of Marketing and Entrepreneurship

Courses for Graduate/Undergraduate Credit


ENTRE 608. Selling and Sales Force Management (3). Cross-listed as MKT 608. An introduction to Sales Management. Includes sales strategies and the problems and policies involved in managing a sales force. Prerequisites: MKT 300, junior standing, advanced standing.

ENTRE 610. Short-Term Financial Management (3). Cross-listed as FIN 610. An introduction to Short-Term Financial Management. Includes financial management and the problems and policies involved in managing a sales force. Prerequisites: MKT 300, junior standing, advanced standing.

ENTRE 620. Growing and Managing an Entrepreneurial Firm (3). Focuses on the organization, operation, marketing, and financial management of an entrepreneurial firm. Emphasizes the strategic management of growth associated with a rapidly changing business, as distinguished from "small business management," which can include small enterprise units that are static. Teaches the practical aspects of managing a growing business on a day-to-day basis. Prerequisite: ENTRE 310C, junior standing, or instructor's consent.

ENTRE 625. Developing a Successful Business Plan (3). Emphasizes the development of a comprehensive business plan for a new venture. Includes financial and organization planning, management strategies, and marketing plans. Prerequisites: ENTRE 620, senior standing, or instructor's consent.

ENTRE 690. Seminar in Special Topics (1-3). Repeatable with instructor consent.

Executive Master of Business Administration (E MBA)

Grades in Business

Courses for Graduate Students Only

E MBA 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, correlation, analysis of variance, and nonparametric methods. Prerequisite: admission to E MBA program.


E MBA 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 E MBA program.

E MBA 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 buyouts and principal-agent problems. Prerequisite: admission to E MBA program.

E MBA 804. Operations Management (3). 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 E MBA program.

E MBA 805. Global Business and Competitiveness (3). Focuses on 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 balances of payments, and trade policy issues. Prerequisite: admission to E MBA program.

E MBA 806. Using Accounting Information to Understand Financial Performance (3). Focuses on the nature and purpose of accounting, principal accounting instruments, and valuation problems. Prerequisite: admission to E MBA program.

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

E MBA 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 E MBA program.

E MBA 809. Information Technology (3). Focuses on information technology and data systems, the capabilities and limitations of information technology, and the organizational implications of technology, and how to successfully incorporate information technology into organizations to support management decision making and control. Prerequisite: admission to E MBA program.

E MBA 810. Managerial Investment Strategies (3). Focuses on investment management, asset pricing models, factor models, performance assessment, option pricing, and other
derivative securities. Prerequisite: admission to Executive MBA program.

E MBA 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.

Finance (FIN)

Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit

FIN 611. Real Estate Finance (3). Cross-listed as RE 611. Real estate financing instruments, institutions, traditional and creative financing techniques. Risk analysis, mortgage financing and underwriting, primary and secondary mortgage markets. Prerequisites: FIN 340, junior standing, advanced standing.

FIN 618. Real Estate Investment Analysis (3). Cross-listed as RE 618. Equity investor decision criteria, institutional and ownership entity investment constraints, financial leverage opportunities, cash flow analysis, and creative income tax strategies. Prerequisites: FIN 340, junior standing, advanced standing.


FIN 622. Futures and Options Markets (3). Presents an overview of the futures and options markets. Discusses basic theoretical concepts as well as the practical issues of hedging and speculating in these markets. Prerequisites: FIN 340, junior standing, advanced standing.

FIN 625. International Financial Management (3). Cross-listed as ECON 674 and IB 625. A study of the international financial and monetary systems, 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, junior standing, advanced 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, junior standing, advanced standing.

FIN 632. Bank and Financial Institution Management (3). Presents and analyzes asset and liability management by banks and financial institutions. Also covers financial institution structure, management, regulation, and operations. Covers risk management topics in detail. Prerequisites: FIN 340, junior standing, advanced 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, junior standing, advanced standing.

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, junior standing, advanced standing.

FIN 690. Seminar in Selected Topics (1-3). Repeatable with departmental consent. Prerequisites: FIN 340, junior standing, advanced 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 823. 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. Management of Financial Institutions (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 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 866. Public Financial Management (3). Deals with selected aspects of state and local government financial management. Introduces fund accounting, costing government services, capital budgeting, debt management, and asset management. Prerequisite: FIN 850 or instructor’s consent. Cross-listed as PADM 866.

FIN 870. Financial Modeling (3). Prepares students to model various financial transactions and decision-making analysis using computer analysis and spreadsheets. Students build models to analyze corporate finance problems, portfolio and investment problems, derivative securities pricing problems, including real option analysis and fixed-income security valuation and duration problems. Studies technical issues in financial modeling and uses Visual Basic for financial analysis. Students gain tools needed to participate fully, creatively, and with technical proficiency in the resolution of many financial issues facing the firm. Prerequisite: FIN 850.

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.

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: HRM 466, junior standing, advanced standing.

HRM 666. Human Resource Staffing (3). Analysis of all phases of the selection process as implemented in private and public sector organizations. Includes an analysis of the impact of federal and state anti-discrimination legislation on selection practices as well as human resource planning, recruiting, job analysis, and selection techniques, including testing and interviewing. Validation of selection techniques is covered. Prerequisites: HRM 466, junior standing, advanced standing.

HRM 668. Compensation (3). Approaches to compensation processes in organizations. Discusses job evaluation techniques, wage level and wage structure determination, individual performance analysis, individual wage rate decision, incentive plans, and benefits. Considers the legal constraints on compensation practices. Prerequisites: HRM 466, junior
human resource management concepts and practices applicable to business operations in an international setting. Examines a wide range of problems associated with business operations across national boundaries. Discusses cultural differences, language barriers, nationalism, protectionism, technology transfer, and trade policies. Prerequisites: MGMT 360 or concurrent enrollment, junior standing, advanced 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 their subordinates perform. Course develops positive, supportive management skills for helping individuals and groups achieve their potential. Covers the importance of identifying and hiring superior performers, orienting them to the group, coaching and developing subordinates to their fullest, maintaining motivation at high levels, and merging individuals into a cohesive group. Prerequisite: MGMT 360, junior standing, advanced standing.

MGMT 662. Managing Workforce Diversity (3). Modern organizations face the challenge of managing employees with diverse backgrounds and talents to provide products and services to diverse customers. Course examines work force diversity from the perspective of maximizing its benefits to group and organizational effectiveness, including developing skills to facilitate the constructive resolution of conflict, encouraging cooperation and teamwork and enhancing identification with the work unit. Prerequisite: MGMT 360, junior standing, advanced 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 work-related 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 manage the organization's culture, improve group performance, and increase collaboration among team members. Prerequisites: MGMT 360, junior standing, advanced standing.

MGMT 666. 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, junior standing, advanced standing.

MGMT 667. 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 330, FIN 340, MKT 300, MGMT 360, senior standing, advanced standing.

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

Management (MGMT)
Department of Management

Courses for Graduate/Undergraduate Credit

MGMT 660. Designing Effective Organizations (3). Studies how work and workers 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 responsiveness, innovation, and global competitiveness. Emphasizes skills necessary for managing change for maximum effectiveness of individuals, work groups, and the organization as a whole. Prerequisites: MGMT 360, junior standing, advanced standing.

IB 625. International Financial Management (3). Cross-listed as ECON 674 and FIN 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 201, 202, or 800; junior standing, advanced standing.

IB 690. Special Topics in International Business (3). Covers emerging topics within the field of international business. Prerequisites: completion of or concurrent enrollment in all required IB courses, junior standing, advanced standing.

Courses for Graduate Students Only

IB 836. International Business and Competitiveness (3). An introduction to international business administration with particular attention to the development of multinational business strategies in light of the diverse economic, political, social, and cultural dimensions of the environments that exist in both developed and developing areas of the world.

IB 897. Internship in IB (1-3). Repeatable with departmental consent.


IB 899. Internship in IB (1-3). Prerequisite: departmental consent.

International Business (IB)
Department of Management

Courses for Graduate/Undergraduate Credit

IB 561. International Economics and Business (3). Cross-listed as ECON 672. A survey of the economic foundations of international trade and investment. Studies international trade, theory, and policy (the international economy), and explores the operations of the multinational firm within that environment. Prerequisites: junior standing, advanced standing.

IB 560. 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 national boundaries. Discusses cultural differences, language barriers, nationalism, protectionism, technology transfer, and trade policies. Prerequisites: MGMT 360 or concurrent enrollment, junior standing, advanced standing.

IB 601. International Marketing (3). Cross-listed as MKT 601. Problems and procedures of marketing in foreign countries. Includes the effects of foreign cultures and marketing systems on the design of marketing programs. Prerequisites: MGT 300, junior standing, advanced standing.

IB 625. International Financial Management (3). Cross-listed as ECON 674 and FIN 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 201, 202, or 800; junior standing, advanced standing.

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International Business (IB)
Department of Management

Courses for Graduate/Undergraduate Credit

IB 561. International Economics and Business (3). Cross-listed as ECON 672. A survey of the economic foundations of international trade and investment. Studies international trade, theory, and policy (the international economy), and explores the operations of the multinational firm within that environment. Prerequisites: junior standing, advanced standing.

IB 560. 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 national boundaries. Discusses cultural differences, language barriers, nationalism, protectionism, technology transfer, and trade policies. Prerequisites: MGMT 360 or concurrent enrollment, junior standing, advanced standing.

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IB 625. International Financial Management (3). Cross-listed as ECON 674 and FIN 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 201, 202, or 800; junior standing, advanced standing.

IB 690. Special Topics in International Business (3). Covers emerging topics within the field of international business. Prerequisites: completion of or concurrent enrollment in all required IB courses, junior standing, advanced standing.

Courses for Graduate Students Only

IB 836. International Business and Competitiveness (3). An introduction to international business administration with particular attention to the development of multinational business strategies in light of the diverse economic, political, social, and cultural dimensions of the environments that exist in both developed and developing areas of the world.

IB 897. Internship in IB (1-3). Repeatable with departmental consent.


IB 899. Internship in IB (1-3). Prerequisite: departmental consent.
tioning. 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. A study 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 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 890. Seminar in Special Topics (1-3). Repeatable with departmental consent.

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

MGMT 893. 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. Prerequisites: MIS 310, junior standing, advanced standing.

MIS 610. Database and Web Programming (3). Uses ASP.NET as the programming tool to teach Web application development. Includes HTML forms and SQL-based data sources for developing interactive and dynamic Web applications within a server-based scripting environment. Covers advanced topics such as ADO and implementing Security in ASP. Prerequisites: MIS 325 and MIS 450, junior standing, advanced standing.

MIS 650. Knowledge Management (3). Introduces the design and implementation of systems for leveraging organizational knowledge and intellectual capital. Includes the role of expert systems, data warehousing and knowledge discovery tools, knowledge repositories, e-learning applications, and discussion and chat technologies for knowledge creation and sharing in support of decision making and problem solving in business. Prerequisites: MIS 450, junior standing, advanced standing.

MIS 690. Seminar in Selected Topics (1-3). Repeatable with departmental consent. Prerequisites: senior standing, departmental consent, advanced standing.

MIS 696. Management of the IS function (3). Addresses the issues of managing the information systems (IS) function. Includes the role of IS as a corporate entity, developing a strategic plan for IT investments, organizing the IS department, IS personnel management, IS project management, the role of IS as a user-support entity, auditing the IS function, and emerging issues in managing the IS department. Prerequisites: MIS 450 (or concurrent enrollment), junior standing, and advanced standing.

Courses for Graduate Students Only

MIS 674. Management Information Systems (3). Focuses on information as an organizational resource to be managed. Explores the links between business strategy and information technology, and addresses the organizational implications of investing in information systems. The goal is to prepare today's manager with the necessary know-how to successfully manage with information technology.

MIS 884. Database Planning and Management (3). Prepares students to deal with issues in planning and managing organization-wide integrated databases. Emphasizes logical database design and relational database implementation. Includes SQL, assuring database integrity, database conversion, database administration, and data management for computer integrated manufacturing. Prerequisites: MIS 674 or instructor's consent.

MIS 890. Seminar in Special Topics (1-3). Repeatable with departmental 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, junior standing, advanced standing.

MKT 604. Distribution Management (3). A study of all areas involved with the distribution of a firm's products or services. Focuses on issues such 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, junior standing, advanced standing.

MKT 606. New Product Marketing (3). Cross-listed as ENTRE 606. Addresses identifying, 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. Prerequisites: MKT 300, junior standing, advanced standing.

MKT 607. Promotion Management (3). An analysis of all issues involved with the promotion of an organization and its products or services. Students develop coordinated marketing strategies in the areas of advertising, personal sales, public relations, and special promotional activities such as direct marketing, interactive media, and sales promotions. Prerequisites: MKT 300, junior standing, advanced 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 policies and problems involved in managing a sales force. Prerequisites: MKT 300, advanced standing.

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, 6 additional hours of marketing, junior standing, advanced standing.

MKT 690. Seminar in Selected Topics (1-3). Repeatable with instructor consent. Prerequisites: junior standing, advanced standing.

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

Courses for Graduate Students Only

MKT 801. Marketing Management (3). Develops an understanding of the difference between a sales/marketing department and a marketing orientation. Emphasizes the integral role of a marketing orientation throughout the modern organization. Prerequisite: MKT 800 or equivalent.

MKT 803. Marketing Analysis (3). An application of the scientific method to the design and implementation of research procedures that support the need for management decision-making, planning, and strategy development in the marketplace. Prerequisite: MBA 801 or equivalent.

MKT 805. Consumer Decision Processes (3). An examination of different aspects of the behavior of consumers and of the factors that help explain their behavior. Includes an analysis of current concepts and models. Prerequisite: MBA 801 or instructor consent.
MKT 817. 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 803 or equivalent.

MKT 812. Introduction to Total Quality Management (3). Cross-listed as ENTRE 812 and MGMT 812. Introduces the principles 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 instructor consent.

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

Master of Business Administration (MBA)

Graduate Studies in Business

Courses for Graduate Students Only

MBA 800. Financial Statement Analysis (3). Studies financial statements and related footnote disclosures. Includes tools and procedures common to the interpretation and analysis of financial statements. Prerequisites: graduate standing and permission of a Barton School graduate studies advisor.

MBA 801. MBA Basics: Management and Marketing (3). Highlights foundation knowledge from the disciplines of management and marketing integrated with a strong component of communication skills. Primarily provides students with a knowledge base in management and marketing from which to build in their MBA course work. Secondly, builds oral and written communication skills necessary for success in the MBA curriculum and beyond. Prerequisites: graduate standing and permission of Barton School Graduate Studies in Business advisor.

Real Estate (RE)

Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit

RE 611. Real Estate Finance (3). Cross-listed as FIN 611. Real estate financing instruments, institutions, traditional and creative financing techniques. Risk analysis, mortgage financing and underwriting, primary and secondary mortgage markets. Prerequisites: FIN 340 or instructor consent; junior standing, advanced standing.

RE 614. Real Estate Appraisal (3). Analysis of factors that create real estate value. Cost, sales comparison and capitalized income approaches to market value. Highest and best use analysis. Prerequisites: RE 310 or instructor consent; junior standing, advanced standing.

RE 616. Real Estate Investment Analysis (3). Cross-listed as FIN 616. Equity investor decision criteria, institutional and ownership entity investment constraints, financial leverage opportunities, cash flow analysis, and creative income tax strategies. Prerequisites: FIN 340 or instructor consent; junior standing, advanced standing.

RE 619. 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. Prerequisites: RE 310, 611, 618, or instructor consent; junior standing, advanced standing.

RE 690. Seminar in Special Topics (1-3). Repeatable with departmental consent. Prerequisites: junior standing, advanced standing.

RE 750. Workshop in Real Estate (1-4). Prerequisite: junior standing.

Courses for Graduate Students Only

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

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

Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate Students Only

RE 611. Real Estate Finance (3). Cross-listed as FIN 611. Real estate financing instruments, institutions, traditional and creative financing techniques. Risk analysis, mortgage financing and underwriting, primary and secondary mortgage markets. Prerequisites: FIN 340 or instructor consent; junior standing, advanced standing.

RE 614. Real Estate Appraisal (3). Analysis of factors that create real estate value. Cost, sales comparison and capitalized income approaches to market value. Highest and best use analysis. Prerequisites: RE 310 or instructor consent; junior standing, advanced standing.

RE 616. Real Estate Investment Analysis (3). Cross-listed as FIN 616. Equity investor decision criteria, institutional and ownership entity investment constraints, financial leverage opportunities, cash flow analysis, and creative income tax strategies. Prerequisites: FIN 340 or instructor consent; junior standing, advanced standing.

RE 619. 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. Prerequisites: RE 310, 611, 618, or instructor consent; junior standing, advanced standing.

RE 690. Seminar in Special Topics (1-3). Repeatable with departmental consent. Prerequisites: junior standing, advanced standing.

RE 750. Workshop in Real Estate (1-4). Prerequisite: junior standing.

Courses for Graduate Students Only

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

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

Applications for admission to the MEd in counseling, 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 license. For those students whose career goals include school counseling in Kansas, in order to be recommended for a conditional license as a school counselor, a student must have a valid Professional-level teaching license. They must also have been admitted to and completed the MEd in counseling degree program at the 46-hour credit nonthesis level or at the 54-credit-hour thesis level, or have a qualifying master's degree and have been admitted to and completed the 50-credit-hour license only program.

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 educational 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.

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. This index of 5.5 could be achieved by a student who attained a combined verbal and quantitative score of 1,000 and a B average over the last 60 credit hours of undergraduate course work.

Specialist in Education Requirements

The Specialist in Education (EdS) in school psychology requires 39 credit hours of course work beyond the MEd. The degree is awarded upon completion of course work and practice. For full licensure in school psychology, students must apply for a conditional license, register for a 4-credit-hour post-specialist internship, and complete the full-time, one-year internship in a public school.

Applications for admission to the EdS in school psychology are reviewed when they become complete throughout the year. Candidates who apply are considered in the order in which their applications are completed until all openings are filled.

Admission Requirements

School Psychology

Students who have completed a master's degree in educational psychology, counseling, or a directly related area may apply for admission. Students must provide graduate degree transcripts; undergraduate grade point average for the last 60 credit hours; Graduate Record Examination scores (verbal and quantitative); Graduate Record Examination writing assessment score (unless applicant already completed a master's thesis); a resume; names, addresses, and phone numbers of three people to provide letters of reference; a statement of professional goals; and a statement of research interests. Undergraduate grade point average (GPA) and Graduate Record Examination (GRE) scores will be evaluated using the following index:

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

Ordinarily, applicant's scores on this index will equal or exceed 5.5. The GPA and GRE index of 5.5 could be achieved by a student who attained combined verbal and quantitative scores on the GRE of 1,000 and a B average (3.0) 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 subjects review, and final oral examination.

Endorsement Requirements

District Leadership License

Applicants must have a minimum 3.250 grade point average for the first 30 hours of graduate course work leading to a masters degree from an accredited institution. 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 masters degree conferred.
2. Minimum GPA of 3.25 for graduate coursework leading to the masters degree.
3. Submission of scores on The School Superintendent Assessment (SSA). The SSA is based on ISLLC standards regarding knowledge, performance, and dispositions necessary for a district-level leader. Scores from the SSA are advisory only and are used to help faculty monitor progress in the program.
4. Master's degree from an accredited institution.
5. Three years of accredited experience in a school district.
6. Statement of Purpose: A five-hundred word statement that discusses your leadership experience (formal/informal; professional/non-professional). The applicant must be specific as to leadership experience, detailing the goals and outcomes of his/her leadership experience. The statement of purpose will be analyzed for evidence of leadership ability and writing skill.
7. At least three letters of recommendation from people who have supervised the applicant in either an employment or community service capacity and who can comment on the applicant's intellectual ability, creativity, initiative, sensitivity to others, and leadership potential.
School Counseling
The school counseling endorsement program requires 32 credit hours of course work. For state licensure recommendation, students must have two years of full-time teaching experience. Applicants must have a minimum 3.000 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 in education at a regionally accredited institution.

Applicants must have a minimum grade point average of 3.500 on a 4.000 scale for all graduate-level hours and an acceptable score on the three general tests of the GRE taken within the past five years. 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. Completion of coursework leading to a district leadership license and three years of accredited experience in an educational organization. (NOTE: The licensure requirements are undergoing review and may change in the near future. Please contact the department for current information.)
3. At least three letters of recommendation from supervisors and/or professional peers that attest to the applicant's potential for success as an educational leader.
4. A current resume or curriculum vita of educational and professional experience.
5. A brief, one-page statement of professional goals related to the completion of the doctoral degree in educational administration.

Degree Requirements
Completion of requirements includes core courses, a minimum of 15 dissertation hours, final examinations, and an approved dissertation.
The five-member dissertation committee will include at least two university professors holding graduate faculty membership, one Visiting Practitioner, and an outside department graduate faculty member who will serve as the Graduate Dean's representative.

State Licensure 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:
- Building Leadership (requires completion of the MEd program)
- District Leadership
- School Counselor
- School Psychologist

Counseling, Educational, and School Psychology (CESP)

Courses for Graduate/Undergraduate Credit

CESP 701. Introduction to Educational Research (3). An introduction to research in education. Includes (1) a survey of current educational research, (2) the nature of research methodology, (3) the preparation of research reports, and (4) criticism of current research.

CESP 704. Introduction to Educational Statistics (3). 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). This course is cross-listed as PSY 968. 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 708. 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 research on systematically evaluate developmental theories in terms of their scientific worth 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 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). SU grade only. A laboratory approach to an examination of the counselor's role in the counseling process. Helps prospective counselors develop interviewing skills as a foundation for more advanced techniques used in the counseling process. Prerequisite: counseling major or departmental consent. Taken concurrently with CESP 804.

CESP 803. Counseling Theory (3). This course is cross-listed as PSY 969. A study of selected theories of counseling. Prerequisite: admission to counseling or school psychology program or instructor's consent.

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 or instructor's consent.

CESP 808. School Psychology Professional Issues (3). Examines roles and functions of school psychologists within the context of historical foundations of the profession. Uses lectures, 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, 803, and 804, or instructor's consent.


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 the life span, (2) sources and organization of information, (3) assessment designs and career intervention techniques, and (4) career decision-making planning processes. Includes hands-on experience with a variety of assessment methods and intervention techniques and theory-based career decision-making strategies for career interventions. Prerequisites: CESP 803 or 804, or instructor's consent.


CESP 902. Learning Theory and Instruction (3). Applications of some major learning theories and learning principles. Prerequisite: CESP 701 or departmental consent.

CESP 919. Multicultural Issues in Counseling (3). This course is cross-listed as PSY 971. Students acquire knowledge and skills that enable them to offer help to individuals in a multicultural environment. Foci include developing a sense of the student's own cultural identity, increasing sensitivity to cultural differences in help-seeking attitudes and
counseling process, including its theoretical background and practical application. Counseling is a dynamic process where behaviors, attitudes, and experiences are influenced by experiences and insights gained through the counseling process. Counseling is not just about providing information or advice but also about helping individuals develop coping strategies, improve self-awareness, and enhance their personal growth.

Counseling (3). The role of the individual and group in the counseling process, including the importance of self-awareness, communication, and interpersonal skills. Prerequisites: CESP 701, 704, 803, or instructor's consent.

Counseling (3). The role of the counselor in the counseling process, including the importance of ethical and professional standards. Prerequisites: CESP 701, 704, 803, or instructor's consent.

Counseling (3). The role of the counselor in the counseling process, including the importance of ethical and professional standards. Prerequisites: CESP 701, 704, 803, or instructor's consent.

Counseling (3). The role of the individual and group in the counseling process, including the importance of self-awareness, communication, and interpersonal skills. Prerequisites: CESP 701, 704, 803, or instructor's consent.

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Counseling (3). The role of the individual and group in the counseling process, including the importance of self-awareness, communication, and interpersonal skills. Prerequisites: CESP 701, 704, 803, or instructor's consent.
Engage in self-assessment and readiness for becoming a professional. 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. Introduction to Educational Leadership, Team-Based Collaboration, and Inquiry Process (3). Participants engage in self-assessment and readiness for becoming a school administrator. Includes discussing and learning issues and techniques for measurement in the cognitive, affective, and psychomotor domains. Also reviews the basics of educational research, the nature of research methodologies, and methods for the preparation of research reports. Prerequisite: admission to the MEd in educational 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 808. Special Studies in Educational Administration (1). Group studies in selected special areas. 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). Examines the theoretical concepts of building relationships through effective interpersonal skills. Includes development of interpersonal skills that lead to success in collaborating and supervising staff and development of community relations to enhance support of schools. Studies formative evaluation concepts focusing on performance issues related to actual teaching situations and the teacher’s guided analysis of these issues. Examines processes involved in the development of interpersonal skills. Engages 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. Diversity and Social Justice (3). This course examines the role of school leadership in an increasingly complex and diverse society. Students will investigate diversity in its various forms including race, ethnicity, language, gender, socio-economic status, disability, and religious beliefs. Students will analyze inequities within societal, institutional, and personal frameworks and engage in problem solving toward socially equitable educational practices and inclusive learning communities.

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 and educational law, interpretations of statutes and court decisions affecting education, and the legal responsibilities of school personnel and professional negotiations. 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 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 philosophy and developmental processes. Examine recent programs and proposals as well as curriculum developments in 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). 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 854. 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 855. Special Problems in Administration (1-4). Directed problems in research for master’s students primarily under supervision of a graduate instructor. Prerequisite: instructor’s consent.

EAS 947. Post Program District Level Internship (3). A two-semester course designed for individuals who have completed a conditional leadership certification license and a full time position in a district level program. The course focuses on the performance expectations of district-level administrators as identified in the ISLLC standards and KSDE certification guidelines. The student works under the guidance of a mentor who, together with the university clinical supervisor, assesses the intern’s performance level. Prerequisites: completion of district-level certification program, conditional leadership license from KSDE, and must be currently in a district level position.

EAS 956. District-Level Personnel Administration (3). This course is designed for those students preparing to become district level school administrators in general and school superintendents in particular. The course focuses on the selection, retention, development, and evaluation of the personnel of personnel that comprise a typical school district. Particular emphasis is placed on selecting staff, staff development, conflict resolution, and contract management. Prerequisite: Admission into the district-level certification program.

EAS 963. Politics and Power in Education (3). An examination of the interaction of society and the school as it relates to administrative processes. Studies systems of control, social class, power structure, human relations, and group dynamics. Prerequisite: instructor's consent.

EAS 969. Introduction to Educational Research and Academic Writing (3). The course will introduce students to ethical standards of educational research, the various research traditions and methodologies employed in the conduct of educational research. Students will learn to do a literature review using both library and online sources, to discriminate among the many types of published works available, to critically read research and related literature, and to develop an understanding of academic writing conventions and expectations, and develop faculty who are APA-styled style. Prerequisite: admission to the EdD program in EAS.

EAS 970. Advanced Administrative Theory Seminar (3). Examines the relationship between theory and practice in educational administration. Participants consider various theoretical frameworks for empirical studies, program design, and organizational implementation efforts, and take initial steps toward an integration of these frameworks. Class activities require the application of the constructed and propositions considered in an ongoing analysis of school-related problems and the conceptualization of action programs for addressing such problems. Prerequisite: admission to the 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 the EdD program; EAS 970 and 981, concurrent enrollment in EAS 982.

EAS 972. Administrative Leadership Seminar (3). Facilitates 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 the EdD program; EAS 970 and 981, 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 a field-based inquiry design, implementation, and reporting. Prerequisites: admission to the 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. Prerequisites: admission to the EdD program in EAS.

EAS 983. Applied Inquiry Seminar III (3). Continues EAS 981 and 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 the EdD program in EAS.

EAS 984. Field-Based Research I (3). This is the first in a sequence (Fall, Spring, Summer) that provides opportunities for field-based research in the EdD dissertation proposal, Prerequisites: admission to the EdD program; EAS 981, 982, 983, and concurrent enrollment in EAS 972.

EAS 985. Field-Based Research II (3). Follows EAS 984 and continues field-based research activities and development of dissertation proposals. Prerequisites: admission to EdD program; EAS 984.

EAS 986. Field-Based Research III (3). Follows EAS 985 and continues field-based research activities and development of dissertation proposals. Prerequisites: admission to EdD program; EAS 985.

EAS 987. Special Problems in Administration (1-4). Directed problems in research for specialist and doctoral degree students under supervision of a graduate instructor. Prerequisite: instructor's consent.

EAS 992. Dissertation Research I (1-6). Taken concurrently with EAS 986, 987, and 988 for 6 credits each semester during the last year of enrollment. Provides students with dissertation proposal and dissertation advisement and may be taken for 1-6 credits per term for a maximum of 24 credits. Up to 17 credits may be counted toward program completion. Prerequisite: admission to EdD program in EAS and required doctoral course work.

Communicative Disorders and Sciences (CDS)

Degree and Areas of Specialization

The Department of Communicative Disorders and Sciences offers courses of study leading to the Master of Arts (MA), the Doctor of Audiology (AUD), and the Doctor of Philosophy (PhD). Academic and clinical education are provided for students who wish to become professionally qualified to work with children and adults. Instructional areas include communication sciences, speech-language pathology, and clinical and rehabilitative audiology. A graduate program culminating in a master's degree is required for professional certification as a speech-language pathologist in the public schools and for work in hospitals, clinics, rehabilitation centers, or private practice. A doctoral degree is required to practice as an audiologist. With an undergraduate or graduate major, students typically can complete the master's program in two years. Upon completion, students are eligible for Kansas licensure and certification by the American Speech-Language-Hearing Association.

The Department of Communicative Disorders and Sciences operates under the Guiding Program Document for Communicative Disorders and Sciences, which represents a shared vision among all members of the department and serves as a guide for ongoing programmatic assessment. Please see www.wichita.edu/cds/gpd for more information.

Admission Requirements

Admission to the MA and AuD programs 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, with a minimum score on the analytical writing section of 3.0 for the MA and 3.5 for the AuD. Three letters of recommendation and a personal essay are required.

Consideration for admission to the PhD 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, with a minimum score of 3.5 on the analytical writing section. Three letters of recommendation and a professional resume are required.

The application deadline for all programs is February 1 for fall and October 1 for spring.

Master of Arts Requirements
The Master of Arts (MA) in communicative disorders and sciences may be earned with an emphasis in speech-language pathology (42-hour program). This program requires 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 the completion of one research credit/project, and the successful completion of the minimum credit hours required for the program emphasis. Comprehensive examinations are required 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.

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 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 Metropolitan Complex.

Doctor of Philosophy Requirements
The doctoral program in Communicative Disorders and Sciences requires a minimum of 65 hours on the Plan of Study (including a maximum of 18 hours of dissertation). In addition, 12 hours of tool courses are required. A doctoral student becomes a "Candidate for the Degree" after passing the Qualifying Examination, which typically is taken during the semester the Plan of Study requirements are completed (exclusive of dissertation hours). Doctoral Candidates enroll in at least 2 dissertation hours each term (including the term of graduation). The final requirements for the PhD are the completion of original research, the dissertation, and an oral defense.

General

Courses for Graduate/Undergraduate Credit

CDS 515. Deaf Culture (3). Examines various cultural aspects of the deaf community. Presents the interrelationship of language and culture along with a study of socialization, norms, and values.

CDS 520. Poetry, Mime, and Song (3). Nonverbal way of communication which forms an integral base for communication in American Sign Language. Course emphasizes the use and understanding of facial expression, gestures, pantomime, and body language. Role play and acting out are required.

CDS 522. Deaf Heritage (3). Considers the history, nature, and uses of language and its effect upon human thought and action. Also covers the ideas and ideals expressed by deaf people over many periods of time through drama, philosophy, painting, and related areas.

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 process includes procedures for therapy, writing behavior objectives and progress, and conducting parent/spouse/significant other conferences. Prerequisites: 25 clock hours of observation; grade of C or better in CDS 304, 306, 314, 416, 510 (may be concurrent), and 514; 2750 cumulative and 3,000 GPA in the major; departmental application required one semester prior to enrollment; medical clearance and insurance.

CDS 704. Graduate Issues in Ethics and Practice in Communicative Disorders and Sciences (3). Provides graduate students as future practitioners a forum to be acquainted with and to review professional ethical 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.
Course Title

Course Code

Course Description

CRH 104. Counseling Internship (1-3). Practical application of counseling principles. Emphasizes the use of counseling skills in a supervised clinical setting. Prerequisites: CSH 103 and department approval.

CDS 105. Selected Topics in Communication Disorders and Sciences (1-3). Group or individual study in specialized areas of communicative disorders and sciences. Repeatable.

CDS 110. Workshop in Communication Disorders and Sciences (1-4). Offered periodically on selected aspects of communicative disorders and sciences. Repeatable.

CDS 120. 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 communicative skills in educational settings.

CDS 781. Cooperative Education (1-3). A work-related placement that integrates theory with planned and supervised professional experience designed to complement and enhance the student's academic program. Prerequisite: 2.0 GPA. Repeatable for credit. Offered Co/NGC.

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 motivations, knowledge, and skills for conducting clinical and basic science research and for reading and critically evaluating the clinical research literature.

CDS 807. Hearing Science (3). Provides an understanding of hearing science that will form the base of knowledge necessary for an in-depth understanding of the parameters and mechanics of sound, the transmission of sound, and the mechanisms through which sound is generated, transmitted, manipulated, and perceived. Addresses various issues as they pertain to sound, its generation and perception, including the physics of sound, the measurement of sound, physical concepts related to sound, physiological acoustics, psychoacoustics, and some mathematics pertaining to sound and its transmission and measurement.

CDS 835. Early Practicum Experience in Audiology (1). Students will experience guided observations of a variety of audiological activities. In addition, they will serve as an aide in diagnostic evaluations. Students will observe preparations for administration of and follow-up to clinical evaluations. Limited hands-on experience will be included.

CDS 850. 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 891. Non-Thesis Research Project (1). A directed research project which may include literature searches, data collection or interpretation of data. Topic of project to be determined by instructor. Repeatable, but total credit hours must not exceed 3. Prerequisite: CDS 800 and department consent prior to enrollment.

CDS 892. Presentation of Research (1-3). A directed research project. Repeatable, but total credit hours must not exceed 3. Prerequisites: CDS 800 and instructor's consent prior to enrollment.

CDS 895. Thesis Research (1-2). Repeatable, but total credit hours counted toward degree requirements must not exceed 2. Prerequisite: instructor's consent.

CDS 899. Thesis (1-2). Repeatable, but total credit hours counted toward degree requirements shall not exceed 2. Prerequisite: instructor's consent.

CDS 905. Advanced Practicum in Communication Disorders and Sciences (1-4). Supervised internships in one or more of the following areas: 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 Communication 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 Seminar (1). A weekly seminar on research methodology and 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.

CDS 996. University Teaching (1). A weekly seminar on university teaching. The pedagogy, theories, and research of teaching will be discussed through preparation of presentations, observation of teaching, and teaching experiences. The goal is to provide doctoral students with information and experience in university teaching. Repeatable. Prerequisite: doctoral student standing.

CDS 999. Doctoral Dissertation (1-6). Repeatable.

Speech-Language Pathology

Courses for Graduate/Undergraduate Credit

CDS 801. Speech and Hearing Science (3). Examines elements in the chain of events that lead to human communication. Studies speech production and perception of physiological and acoustical levels, emphasizing acoustics. Prerequisite: CDS 110Q.

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 519. Genetic and Organic Syndromes (3). Introduces human genetics and the impact of chromosomal and structural anomalies of communication disorders. Assessment and remediation of cleft palate speech. Prerequisite: CDS 300.

CDS 605. Neuroscience 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 of century of research from the National Institutes of Child Health and Development (NICHD) centers that demonstrate the significant relationship 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 rela-
CDS 781. 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.

Courses for Graduate Students Only

CDS 801. Advanced Speech and Hearing Science (3). Advanced study of speech and hearing processes, primarily 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 809. Neurology of Speech and Language I: 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 the 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 II: 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 (2). Provides the principles underlying a transdisciplinary teaming approach, emphasizing differential diagnosis and treatment of complex disorders found in medical settings. Discussed 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 life span (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 disabilities. Practical application of language assessment procedures, individualized planning, and language intervention strategies. Emphasis on 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 or 516 or departmental consent.


CDS 818. Fluency Disorders (3). Reviews current theories on the etiology and development of the disorder. Considers behavioral 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 Life Span (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 or instructor's consent.

CDS 820. Graduate Methods and Practicum in Speech and Language Evaluation (2). Discusses clinical methods for evaluation and diagnosis of children and adults presenting with speech and 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 provides support for the present clinical experience. Prerequisites: CDS 625, medical clearance, and insurance.

CDS 823. Graduate Methods and Practicum in Medical Settings (4 or 6). Class discussions cover various topics pertinent to hospital and adult care practitioners. 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 externship 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 conducting 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. Focuses on children with social language disorders. Practicum issues relate to current client needs. Prerequisites: CDS 516, 518 (can be concurrent), instructor's consent, medical clearance, and insurance.

CDS 826. Graduate Methods, Practicum, and Diagnostics in Language and Literacy (2 or 4). Techniques and methods for development of clinical skills in a supervised practicum setting. Focuses on children with social language disorders. Practicum issues relate to current client needs. Prerequisites: CDS 516, 518 (can be concurrent), instructor's consent, 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. Focuses on clients with voice disorders. Development of a philosophy of clinical processes includes procedures for therapy, writing behavior objectives and progress, and conducting of client conferences. Prerequisites: department consent one semester prior to enrollment, medical clearance, and insurance.

CDS 828. Graduate Methods, Practicum, and Diagnostics in Voice (2-4). Techniques and methods for development of clinical skills in a supervised practicum setting. Focuses on clients with voice disorders. Development of a philosophy of clinical processes includes procedures for therapy, writing behavior objectives and progress, and conducting of client conferences. Prerequisites: department consent one semester prior to enrollment, medical clearance, and insurance.
for auditory assessment. Prerequisites: CDS 251 and 381.

CDS 805. Clinical Audiology II (3). Discusses diagnostic and rehabilitation procedures in the audiology clinic. Includes application of theoretical clinical principles toward the administration and interpretation of speech-in-noise 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 audiologist and medical professionals. 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 859. Electrophysiologic Audiology (4). Techniques and procedures for administration and interpretation of electrophysiologic tests of the auditory system, including otoacoustic emissions (OAEs), electroocloegraphy (EOG), auditory brainstem response (ABR, AEP), and somatosensory evoked response testing (SER). Addresses interoperative monitoring and imaging techniques. Techniques and procedures for clinical evaluation of the functional status of the peripheral and central nervous systems 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. Encompasses 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 research in development in research in relation to 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). Continuation of CDS 860. Describes and discusses the performance of digital, analog, and hybrid amplification systems and provides a detailed evaluation of requirements for dispensing such devices. Discusses counseling and techniques related to hearing aid fitting. Prerequisite: CDS 860.


CDS 866. Graduate Methods and Practicum in Aural Rehabilitation (2). Provides students with experiences in the provision of aural habilitation/rehabilitation on behalf of hearing impaired children and adults. Prerequisite: CDS 864 (can be concurrent).

CDS 885. Advanced Methods in Auditory Assessment (1-5). Methods in audiologic evaluation for audiology 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 aid evaluation and fitting, counseling, and others as appropriate. Prerequisites: audiology faculty's consent, medical clearance, and insurance.

CDS 886. Advanced Practicum in Auditory Assessment (1-5). Practicum experiences encompassing diagnostic evaluations covering a full range of auditory disorders and types of evaluations in infants, children, and adults, including standard audiological 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 887. Internship in Audiology (1-9). Placement in variable credit off-campus practicum experiences in audiology. Placement is contingent upon completion of didactic graduate program in audiology and three semesters of CDS 885 and 886. Prerequisites: application one semester prior to enrollment, medical clearance, and insurance.

Curriculum and Instruction (CI)

Graduate Faculty

Professors: Jeri A. Carroll (chairperson and graduate coordinator), Jon M. Engelhardt (Dean), Tonya Huber, Michael A. James, Dennis J. Keal

Associate Professors: Peggy J. Anderson, Frances L. Clark, Constance Haack, Tonya Huber (graduate coordinator, curriculum and instruction), Twyla G. Sherman, Johnnie Thompson, Catherine G. Yeotis

Assistant Professors: Peggy Andersen, Frances Clark (graduate coordinator, special education), Linda M. Mitchell, Twyla Sherman, Johnnie Thompson, Cathy Yeotis

Assistant Professors: Mara Alagic, Robin Cook, Kay Gibson, Anh Tran

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 mild exceptionalities). For those already holding a teaching certificate or license level, C&I offers endorsements in Early Childhood, Reading, ESL/L, Library Media, and some special education areas (adaptive and gifted, with functional under development).

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 3.00 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:

   \[
   \text{GPA} + \frac{\text{GRE scores (any two subtests)}}{400}
   \]

   or a score of 40 or more on the Miller Analogies Test.

2. Current Kansas teaching certificate

   Notes: Students with a BA from a related area must also have minimum scores on the Pre-Professional Skills Test (PST) of 72 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. A site-based delivery model includes 24 hours of instruction at a site off campus, offered one night a week, two semesters each for 2 years. Students also complete a 12-hour area of specialization, specified to their needs and interests. In the campus-based delivery model, 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 of 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 coursework and a written comprehensive examination. The thesis option requires 37 credit hours of course work, 6 hours of theses work, and an oral examination on the thesis.

Graduate Certificate in Educational Technology
This program introduces computer technology training to educators who wish to advance their knowledge of computers in education, integrate technology into classroom instruction, and use technology for communication. While providing documentation that educators have achieved some expertise in the technology area, it can assist those seeking such positions as technology coordinator in a school. The 15 hours of courses or workshops cover basic skills, integrating computer skills, and specific topics to address the changing needs of educators.

Courses for Graduate/Undergraduate Credit

CI 501. Professional Writing for Educators (1-3). Helps students learn the writing skills, techniques, and typical procedures required for developing manuscripts for possible publication in the field of education. Addresses manuscripts for a variety of publication outlets.

CI 503. Science, Technology, and Society (1). Will investigate the relationships between science and technology and the effects of both on our past and present society/culture.

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 the two technological achievements that make possible a desktop publishing revolution. Stresses type design, harmony, legibility, copy fitting, and layout fundamentals.

CI 542. Desktop Publishing II (3). An intermediate-level course which enhances, enriches, and develops further skills and techniques used in desktop publishing. Students select software packages in which they need additional depth toward master-level. Prerequisite: CI 541.

CI 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. Prerequisites: acceptance into teacher education. Currently 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 needs. Students examine many curricular and instructional alternatives for middle grades education and learn to manage changes.

CI 654. Middle Level Strategies: Social Studies (3), English (3), Mathematics (3), Science (3). Acquaints teachers with teaching techniques and assessment tools specifically tailored to the needs of students in the middle grades 5-8. It is intended for individuals holding elementary or secondary certification or licensure who are teaching or intend to teach in the middle grades. Prerequisite: teaching certificate or license.

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 701-702.

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
CI 711. Multicultural Education (3). Emphasizes students understanding multiple perspectives in a global society and developing multiple modalities, culturally aware curriculum experiences. Provides disciplined inquiry and critical experience "to become more responsive to the human condition, cultural integrity, and cultural pluralism in society" (NCATE, 1982, p. 14). Emphasizes diversity issues in education and the development of a knowledge base to support culturally responsible pedagogy. Prerequisite: graduate standing or departmental consent.

CI 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, and 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 715. Improvement of Instruction in Science (3). Assists teachers in improving the way they teach science and the way their students learn science. Includes instructional strategies, curriculum, research, and technology. Prerequisite: CI 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 those 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 716.

CI 724. Adult Education (3). Provides basic information and examples on ways to effectively manage a library. Covers budgeting, grants, policies, procedures, and collection selection/disselection. Prerequisite: CI 716, 726, 728.

CI 723. Analysis and Management of Behavior (3). Covers behavior management strategies specifically needed by classroom teachers to affect academic and social outcomes. Addresses technical, theoretical, and practical aspects of applied behavior analysis. Prerequisites: CI 520 or 702 and CI 430 or 711 or equivalent.

CI 726. 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 the basics of local area network design. Presents methods of using technology with students including CD-ROM, laser disc, 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. Prerequisite: CI 726.

CI 727. Information Technologies in the School Library III (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 the basics of local area network design. Presents methods of using technology with students including CD-ROM, laser disc, 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. Prerequisite: 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 practitioner; (b) educational issues in curriculum, instruction, and change theory; and (c) principles and application of teacher-based action research. Prerequisite: admission to MED in curriculum and instruction.

CI 732. Library Management and Design (3). Provides information and examples on ways to effectively manage a library. Covers budgeting, grants, policies, procedures, and collection selection/disselection. Prerequisite: CI 716, 726, 728.

CI 733. Literature-Based Reading Programs (3). Students examine specific methods for developing a literature program with children (preschool-elementary years), emphasizing extending literature and media through the reading environment, language arts, the arts, and creative expression. Prerequisites: CI 705 and graduate standing.

CI 734. Early Childhood Special Education: Preschool (3). Students are introduced to the historical and socio-educational perspectives germane to gifted education. Explores issues related to the field of gifted education such as theories of intelligence, identification, delivery modes, characteristics and learning needs, special populations, curriculum differentiation, and underachievement. Prerequisite: graduate standing.

CI 736. Organizing a Reading Program (3). Helps students communicate information about reading to various groups, develop literacy curricula, participate in or lead professional development programs, participate in or conduct research, collaborate or supervise other literacy practitioners, communicate assessment results, and engage in professional activities.

CI 736. Organizing a Reading Program (3). Helps students communicate information about reading to various groups, develop literacy curricula, participate in or lead professional development programs, participate in or conduct research, collaborate or supervise other literacy practitioners, communicate assessment results, and engage in professional activities.

CI 740. Introduction to Early Childhood Special Education (3). Students are provided a basic introduction to the emerging field of early intervention for children with disabilities and their families. Prerequisites: ESP 728 and CI 761.

CI 741. Early Childhood Special Education Methods: Preschool (3). Provides specific techniques needed to teach children with exceptionalities in preschool settings. Includes competencies within early childhood special education for (a) legal foundations (IDEA, Part B); (b) characteristics of learners; (c) assessment, diagnosis, and evaluation; (d) report and Individualized Education Plan (IEP) development; (e) instructional content and management strategies; (f) instruc-
tional content and practice; (g) planning and managing the teaching and learning environment; (h) managing student behavior and social interaction skills; (i) collaborating and forming partnerships with family members and other professionals; (j) professional and ethical practices; and (k) strategies for working with students with exceptional learning needs in general and special education preschool settings. Prerequisites: CI 320 or 702, CI 740, admission to the Teacher Education Program or to the special ed graduate program as a non-degree student, or instructor's consent.

CI 743. 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 744. Alternative Certification Internship II (3). Continuation of CI 743. Prerequisite: employment by a school district and completion of course work for provisional teacher certification.

CI 745. Alternative Certification Internship III and IV (1). Continuation of CI 743 and 744. Prerequisite: employment by a school district, CI 743 and 744, and admission to MEd in CI.

CI 747L Practicum: ESL/Bilingual Education (K-12) or adult (9). Provides full-time participation in an ESL class supervised by a master teacher and a University professor. Focuses on the application of teaching methods for ESL/bilingual learners, the appropriate use of formal and informal assessment procedures, the development of cross-cultural teaching strategies, and the integration of language with content-area instruction. Prerequisites: CI 430 or 711, CI 755U, CDS 676.

CI 748. Alternative Certification Internship III (3). Prerequisite: employment by a school district and completion of course work for provisional teacher certification.

CI 749. Alternative Certification Internship IV (3). Prerequisite: employment by a school district and completion of course work for provisional teacher certification.

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 750. 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 observate 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.

CI 765. How Computers Work (1). 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 771. Technology in the Classroom (2). Introduces classroom teachers to new technologies and their use in the classroom. Uses field trips and speakers to expose teachers to leaders in specific technologies. Includes telecommunications, multimedia applications, integrated media, and new hardware and operating systems. Prerequisite: CI 770M or CI 770P or instructor's consent.

CI 772. Integrating Technology into the Curriculum (3). Covers skills and strategies needed for classroom teachers to use computers and computer-related technology to meet curricular goals and professional standards. Includes professional standards, classroom management, choosing appropriate software, assessment, teaching strategies and activities, and professional resources. A project-based course; educators develop materials and strategies to assist in integrating available technology into the curriculum.

CI 774. Teaching English as a Second Language (3). Examines current objectives for teaching English as a second language and a variety of methods and specialized techniques for obtaining these objectives. Students will develop knowledge of criteria for evaluating curricula, teaching materials and professional literature related to teaching English as a second language and Bilingual Education. Students will examine methods of selecting and adapting curricular ways to enhance the curriculum through developing activation plans for involving parent and community resources in the ESOL/BE curriculum. This course is designed to meet the standards required for ESL/BE endorsement or certification in TESOL.

CI 775. Applied Linguistics: ESL/Bilingual Teacher (3). Examines a broad picture of human language: what it is, what it is used for, and how it works. Enables students to recognize uninformulated statements about language, to examine personal beliefs and attitudes about language, and to learn to use basic tools to analyze language in particular as it relates to teaching English as a second language. Provides an introduction to most of the subfields of linguistics (e.g., phonetics, morphology, semantics, syntax, etc.).

CI 776. Second Language Acquisition (3). This course will survey nativist, environmentalist, and interactionist theories of second-language acquisition. This course will cover a broad introduction to the scope of second-language acquisition and bilingualism by reviewing substantive research findings as well as case studies of second-language learners. This course will include discussions over readings, collaborative activities, and presentations involving application of theory to teaching practice.

CI 777. ESL Assessment (3). Examines legal, theoretical, and practical considerations in the ESL/BE student. Explores a variety of established principles of language assessment, procedures for identification of language-majority students, and applications for these procedures and techniques. Covers level placement, monitoring of language development, and exit criteria for language programs. Introduces the desirable qualities of tests: validity, reliability, practicality, and beneficial washback.

CI 780C. 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.

CI 780L. Computers in Language Arts (3). Enables classroom teachers to utilize computers and related technology in the language arts curriculum. Appropriate software is evaluated and used in planning for instruction.

CI 780M. Computers in Mathematics Classroom (3). 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 IIe and Macintosh systems.

CI 780S. Computers in Science (2). 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.

CI 781. Cooperative Education (1-4). Provides the student a work-related placement that integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic program.

CI 782. Internet in the Classroom (3). This project-based course requires students to identify Internet resources that best meet classroom curricular goals and plan instruction using those resources. This course assumes all enrolled students have basic computing skills prior to enrolling in this class and access to a computer connected to the Internet.

CI 783. Special Projects in Internet (1). Explore and expand your knowledge of Internet. Complete a special project designed to utilize knowledge and experiences developed in CI 782. Students and instructor establish goals and activities appropriate for graduate-level study and applicable in an educational setting. Prerequisite: CI 782 or instructor's consent.

CI 786. Beginning Algorithms and Problem Solving (2). Introduce basic algorithms and principles of computer programming.
CI 790. Special Problems in Education (1-4). Directed reading, activity, or research under supervision of a graduate instructor. Prerequisite: departmental consent.

CI 791. Practicum: Methods of Computer-Related Instruction (2). Investigate teaching and learning strategies related to the use of computers in the classroom. Includes the design 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 772 or departmental consent.

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

Courses for Graduate Students Only

CI 802. Seminar on Current Issues in Special Education (3). Analyze and critique research, integrate understandings, evaluate current issues in light of historical events, and draw conclusions relating theory to practice. Students make oral and written presentations. Prerequisite: within 6 hours of graduation, CESP 701.

CI 813. Classroom Research in Curriculum and Instruction (3). 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 804. Classroom Research in Curriculum and Instruction (4). 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. Explains 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 210 or 702, CI 450 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 children and youth with exceptionalities. Prerequisites: full admission to the graduate program, CI 723, 724, 809, and 887, and instructor's consent for majors in other master's degree programs.

CI 811. Family and Professional Collaboration (3). Assists the special educator in developing the skills to collaborate and consult with parents, siblings, regular educators, support personnel, and community agencies to facilitate the needs of children with exceptionalities. Prerequisites: full admission to the graduate program, CI 723, 724, 809, and 887, and instructor's consent for majors in other master's degree programs.

CI 812. Transition Across the Life Span (1 or 3). Presents transition strategies and considerations for students with exceptional learning needs and various ages (early childhood through post-secondary).

CI 821. Classroom Reading Practicum (2). Students participate in a practicum experience, delivering developmental and corrective reading instruction in a classroom setting. Prerequisite: CI 703.

CI 823. Reading Internship I (2). The first of a two-semester internship required by the state of Kansas to qualify for endorsement as a professional licensed reading specialist. The intern will have a university supervisor and an employing school district-appointed mentor who is a licensed reading specialist. A minimum of two visits from both the university supervisor and mentor as well as additional communications will occur. Will provide the candidate with experience as a reading specialist. Candidates will be expected to provide evidence of meeting all licensure standards. Prerequisites: Kansas conditional endorsement as a reading specialist.

CI 825. Reading Internship II (2). The second of a two-semester internship required by the state of Kansas to qualify for endorsement as a professional licensed reading specialist. The intern will have a university supervisor and an employing school district-appointed mentor who is a licensed reading specialist. A minimum of two visits from both the university supervisor and mentor as well as additional communications will occur. Will provide the candidate with experience as a reading specialist. Candidates will be expected to provide evidence of meeting all licensure standards. Prerequisites: CI 823.

CI 835. Instructional Models and Practices (3). For teachers (1) to explore the theories behind, the development of, and the syntaxes for viable instructional practices; (2) to apply instructional models to the analysis and evaluation of various learning environments; and (3) to develop a commitment as a reflective practitioner to more effective instruction through an expanded and integrated repertoire of teaching strategies. Prerequisites: admission to MEd in curriculum and instruction program, CESP 701.

CI 836. Collaborating and Refining Problem-Solving Skills (6). This integrated class guides students in implementing school and classroom improvement practices that have documented success. Emphasizes collaboration skills in the identification, selection, and development of approved school and professional development projects.

CI 842. Early Childhood Special Education Methods: Infants/Toddlers and Families (3). Provides specific techniques needed to provide services, supports, and accommodations for infants/toddlers and their families who face challenges of developmental disabilities. Includes competencies within early childhood special education for (a) legal foundations (IDEA Part C); (b) collaborating and forming partnerships with family members and other professionals (c) typical and atypical developmental patterns; (d) child assessment, diagnosis, and evaluation; (e) family assessment and evaluation; (f) family service coordination; (g) development of Individual Family Service Plans (IFSP); (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 ethical practices. Prerequisites: CI 330 or 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 professional leadership in curriculum and instruction and/or school improvement. Sustained exploration of topics from CI 751, 804, and 837 expected. Prerequisite: CI 837.

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 frameworks in today's classrooms and schools. Prerequisites: 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 (40A), children adolescents with learning disabilities (40F), educable mental retardation (40T), and behavior disorders (40K) supervised by a University professor, emphasizing applied teaching methods for students with mild exceptionalities, including formal-informal psycho-educational assessment devices, curriculum strategies, behavior management, and prescriptive remediation for academic deficits. Prerequisites: full admission to MEd program in special education and completion of all core courses needed for provisional endorsement in specialty areas.

CI 847B. Practicum: School Libraries (3). Students pursue a professional experience in a school library media center under the cooperative supervision of an experienced practitioner in the field. A University supervisor. Prerequisite: CI 732.

CI 847C. Practicum: Cataloging (2-4). Students pursue a professional experience in a school library media center or central services office under the cooperative supervision of an experienced cataloger in the field and a University supervisor. Prerequisites: CI 728 and 847B.

CI 847M. Practicum: Gifted (3-6). Stresses applied teaching approaches. Provides opportunities to apply various theoretical, structural, and technological methodologies related to the education of the gifted learner. Prerequisites: CI 735 and 883.
CI 847R. Practicum: Regular Early Childhood (3). Provides opportunities in a traditional setting for the student to develop competencies with young children by working in a classroom setting with a trained professional. Prerequisites: CI 761 and 762.

CI 853. Improvement of Instruction in Language Arts (3). Students examine recent developments in the teaching of language arts in elementary and/or middle school grades: problems, concerns, methods, materials, and research related to listening and to oral, written, and visual communication including "school" writing and creative writing. Students select particular concepts and related skills for special attention.

CI 854. Improvement of Instruction in Social Studies (3). Students examine recent changes in social studies curriculum and instruction to investigate strengths and limitations of various approaches. Stresses competency in teaching for concept development, dealing with value-laden issues, and teaching for inquiry. An inquiry-centered learning environment emphasizes personalizing the social studies curriculum for children. Reviews and practices alternative teaching strategies and complementary evaluative techniques.

CI 855. Models and Practices of Curriculum and Instruction (6). Examines theories behind, the development of, current practices and trends in, and evaluation and assessment procedures pertaining to curriculum and instruction. Emphasizes multiple conceptual frameworks for thinking about curriculum and instruction, and reflective inquiry into the implications of those frameworks in today's classrooms. Prerequisite: CI 766.

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

CI 860. Seminar on Research Problems (1-3). Helps MEID students formulate either an acceptable agenda for the development of a professional portfolio or an acceptable proposal for a master's thesis to satisfy the applications requirement for the MEID in curriculum and instruction.

CI 861. Seminar in Special Education Research (3). Development and presentation of research proposal. Prerequisites: admission to MEID 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 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 committee, and orally defend the professional portfolio proposed in CI 860. Prerequisites: CI 860 and 862 (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 committee. Also required is the completion and oral defense of the student's thesis. Students work closely with their advisor and committee. Students needing an additional semester to satisfy these requirements should enroll in CI 876. Students receive credit for courses 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 735.

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 MEID 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 MEID special education specialties. For mild exceptionalities: CI 723, 724, 809, 847E, I, or K Practicum; 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, 847R, 887, and 892 or instructor's consent. Repeatable for credit.

Kinesiology and Sport Studies (KSS)

Graduate Faculty
Professors: Lori K. Miller (associate dean, Education), Susan K. Kovar (dean, Graduate School)
Associate Professor: Pamela J. Haynes Beehler (Chairperson), Michael Rogers, Clay Stoldt
Assistant Professors: Vicki Worrell

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 (4.00 system) in the last 60 credit hours of 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.

Permission for students who have completed an earned undergraduate degree from a regionally accredited institution with a grade point average of at least 2.750 (4.00 system) for the last 60 hours of course work, in accordance with WSU graduate policy. Candidate evaluations are based on one of two options: (a) GPA for the last 60 hours of course work and faculty evaluation based on letter of application, resume, and letters of recommendation or (b) GPA for the last 60 hours of course work, cumulative score for the verbal and quantitative sections of the Graduate Record Exam, and faculty evaluation based on letter of application, resume, and letters of recommendation. The program limits admissions to 30 students per year with a minimum score of 60 (out of 100 possible) based on the above admission criteria options.

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 nondegree, category A status. All Graduate School policies relative to admissions apply. Students must maintain a grade point average of 3.00 or better.

Graduate Certificate in Functional Aging. This certificate provides knowledge and training for those work-
ing 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 coursework:

- KSS 780, Physical Dimensions of Aging or GERON 715, Adult Development and Aging (3)
- PSY 308, Readings in Functional Aging or KSS 895, Applied Research (3)
- PSY 947, Seminar in Perception or CDS 812, Normal Aging, Aphasia, and Dementia (3)
- PSY 820, Seminar in Human Factors Psychology or GERON 798, Multidisciplinary Perspectives in Aging (3)
- PSY 911, Seminar in Aging (1)

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 coursework:

- Courses
  - KSS 544, Organization and Administration of Physical Education Programs (3)
  - KSS 750, Sport Safety Training (1)
  - KSS 770, Psychology of Sport (3)
  - KSS 795, Physiology of Athletic Performance (3)
  - KSS 796, Motor Integration (3)
  - KSS 835, Legal Issues in the Profession (3)

Courses for Graduate/Undergraduate Credit

- KSS 500, Health Education K-12 (3). Provides practical applications of theoretical models of change for the health field. Discusses health problems, strategies for affecting change, and outcome assessment. Selects instructional materials. Field trip to preschooled local health agencies. Additional projects required for graduate students. Prerequisite: Block I of teacher education program.
- KSS 515, Rhythmic Activities in K-12 (3). Teaches methodology and curricular content of rhythmic activities appropriate for elementary and middle school children. Prerequisite: Block I of teacher education program.
- KSS 520, Sport Tournament and Event Management (3). A detailed account of the structural design, mathematical calculations, scheduling principles, procedures, and thought processes involved in organizing and conducting sport tournaments and events. 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 statistics, and crisis management. Prerequisite: KSS 112.
- 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 112.
- KSS 530, Physiology of Exercise I (3). Provides a working knowledge of human physiology as it relates to exercise. Prerequisite: KSS 229 or equivalent.
- KSS 540, Seminar in Sport Administration (3). Integrates the knowledge base of sport and business as it applies in the practical setting. Prerequisites: 2.00 GPA, admission to College of Education, 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 in administering and organizing facilities such as corporate-sponsored wellness programs, sports medicine clinics, exercise laboratories, athletic training departments, physical therapy centers, professional sports organizations.
- 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 (3). Provides the equivalent of full-time employment in an appropriate agency for a minimum of at least 520 hours. Prerequisites: 2.00 GPA, admission to College of Education, and senior standing.
- KSS 547B, Internship in Sport Administration (3). Second internship experience for students in sport administration. Takes place in a different setting than KSS 547A. Prerequisites: 2.00 GPA, admission to College of Education, and senior standing.
- KSS 557, Internship in Exercise Science (3). Provides the equivalent of full-time employment in an appropriate agency for a minimum of at least 520 hours. Prerequisites: completion of 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 professions. Emphasizes liability-related issues as they impact sport administrators, exercise professionals, and teachers/coaches of physical activity. Prerequisite: KSS 112.
- 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: KSS 112.
- KSS 590, Independent Study (1-3). Prerequisite: departmental consent.
- KSS 711, Structuring and Scheduling Sports Tournaments (3). Involves the structural and scheduling processes, and mathematics of sports tournaments, elimination, placement, and round robin formats.
- 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 ECGs (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 (1-3).
- KSS 752, Special Studies in Kinesiology and Sport Studies (1-3). Group study in a selected 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 762, Tests and Measurement in Human Performance (3). Introduces testing, measurement, and evaluation techniques used in human performance and related fields. Students learn to conduct valid, reliable, and objective laboratory/field testing, measurement, and evaluation procedures commonly used in human performance settings. Prerequi-

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 (1-4). 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/NC 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; training and performance of the adolescent athlete and of the elderly; and the differences in performance and training between genders. Prerequisite: KSS 530 or 630.

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 796. Motor Integration (3). Examines the principles of motor skill acquisition, human motor performance, and motor control. Emphasizes the use of transfer, memory practice, scheduling, motivation, knowledge of results, neurofeedback, and differences in motor abilities that are involved in motor skill performance. Prerequisite: graduate standing at WSU. Prerequisite: KSS 460.

Courses for Graduate Students Only

KSS 800. Recent Literature in the Profession (3). Survey and critical analysis of research and other pertinent materials in the field.

KSS 801. Leadership and Management in Sport (3). Initial introduction into the administration of sports in public schools, institutions of higher education, and commercial and professional sports organizations. Learn about the various components of sports administration by reading appropriate materials and entering into dialogue with practicing administrators.

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 814. Analysis of Teaching (3). An in-depth examination of teacher effectiveness. Includes analyzing 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 550 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 826. Trends and Issues in Physical Education (3). For the physical education specialist. Directed reading and special investigation of selected current trends, controversial issues, and challenging problems related to physical education. Identification, analysis, and discussion of on-the-job problems will occur.

KSS 829. Assessment in Physical Education (3). For the physical education specialist. Upon course completion, students will demonstrate skills and knowledge to design and utilize assessment that are aligned with content standards for PreK-12 physical education students.

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 (1-12). Internship in selected areas of specialization in sport 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 minor 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 agenda. 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 2. 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 following abbreviations are used in the course descriptions: L stands for lecture and 1 for laboratory. For example, 46, 21 means 46 hours of lecture and 21 hours of lab.
College of Engineering

Offices: 100 Wallace Hall
Walter J. Horn, interim dean

Departments
Aerospace, (316) 978-3410—L. Scott Miller, interim chairperson; Kamran Rokhsaz, master's graduate coordinator; Klaus Hoffmann, doctoral graduate coordinator

Electrical and Computer, (316) 978-3415—M. Ed Savan, chairperson and graduate coordinator

Industrial and Manufacturing, (316) 978-3425—Abu Masud, chairperson and graduate coordinator

Mechanical, (316) 978-3402—Jharna Chaudhuri, chairperson; Behnam Bahr, graduate coordinator

The College of Engineering offers graduate programs leading to a Master of Science (MS) and a Doctor of Philosophy (PhD) in aerospace engineering, electrical engineering, industrial engineering, and mechanical engineering. Areas of specialization can be found in the individual departmental sections. A Master of 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 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 3.00/4.00 for admission to full standing, 2.75/4.00 for admission on probation, and 2.50/4.00 for admission to non-degree, category B. 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.
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 may be obtained from the department graduate coordinator.

Doctor of Philosophy

PhD programs are offered by the four departments of engineering at WSU. A grade point average of at least 3.25 in the last 60 hours or nearest two years is required for admission. Typical fields of specialization can be found in the individual departmental sections. These fields will be used in determining testing areas for the comprehensive examination in the major and minor fields.

Admission Requirements
Admission to any PhD program in engineering requires that the student has completed (or nearly completed) a master's degree in engineering or physical science. Scores for the general test of the Graduate Record Examination (GRE) must be submitted. Some students may find it necessary to take prerequisite courses in order 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 PhD dissertation. Any essential change in the project requires committee approval.

After passing the DAE, the student is known as a candidate for the PhD degree. 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 24 hours of enrollment for PhD Dissertation will be required. The dissertation may be performed in absentia with the approval of the advisory committee.

Final Dissertation Examination

The student must defend the dissertation before the advisory committee. At least five months must elapse between the DAE and the final examination. The final examination will be open to the public. Invited guests or external examiners may be invited if the committee desires.

Aerospace Engineering (AE)

Graduate Faculty

Professors: Klaus A. Hoffmann (doctoral graduate coordinator), Walter J. Horn (interim dean), L. Scott Miller (interim chair), Michael Papadakis, Kamran Rokhsaz (master's graduate coordinator), Bert L. Smith

Associate Professors: James E. Locke, Roy Y. Myose, M. Gawad Nagati, James E. Steck, John S. Tomblin

The Department of Aerospace Engineering offers programs leading to Master of Science (MS) and Doctor of Philosophy (PhD) degrees. Faculty research provides valuable educational opportunities for graduate students. Current research topics include acoustics, aeroelasticity, aerothermodynamics, aircraft dynamic loads, aircraft flight dynamics, aircraft icing, airfoil design and rotor aerodynamics, artificial neural networks, composite materials, computational fluid dynamics, computational solid mechanics, continuum damage and fracture mechanics, damage tolerance, design, experimental aerodynamics, finite element analysis, flight dynamics and control, flight mechanics, hypersonics, intelligent control, laser velocimetry, solid mechanics, structural dynamics, and theoretical and applied aerodynamics.

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

The department's programs are enhanced by Wichita's aviation heritage and the presence of major aerospace companies in the city, including Airbus, Boeing, Cesna, Bombardier-Leairjet, and Raytheon.

Graduate course work is scheduled so that engineers employed in the local industry may conveniently pursue graduate degrees.

Master of Science

Courses of study leading to the MS degree are available with specialization in any of the following four fields: (1) aerodynamics and fluid mechanics; (2) structures and solid mechanics; (3) flight dynamics and control; and (4) multidisciplinary analysis and design. Details of the MS program requirements 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 the same fields as listed above for the MS degree. Details of the PhD program requirements can be found under the College of Engineering heading.

Graduate Courses

All graduate courses must be approved in advance of enrollment by a student's graduate advisor.

Courses for Graduate/Undergraduate Credit


AE 508. Systems Dynamics (3). Linearized parameter modeling; classical, numerical, transform, and state model methods of solution; introduction to systems with feedback; analogies of various physical systems. Prerequisites: AE 373 and MATH 355.


**AE 703. Rotor Aerodynamics (3).** Aerodynamics of rotors, including propellers, wind turbines, and helicopters; momentum, blade element, and potential flow analysis methods; helicopter dynamics, control, and performance. Prerequisite: AE 424.

**AE 707. Modern Flight Control System Design I (3).** Modern multi-loop design methods for stability and control augmentation and guidance systems, specifically for aerospace vehicles. State variable model. Optimal state feedback gains and Riccati's equation, tracking systems, sensors and actuators, discretization of continuous dynamic systems, optimal design for digital control, and effect of non-linearities and trim conditions on design considerations. Prerequisite: AE 514 or AE 714, and AE 607 or ECE 684 or ME 659.

**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. Prerequisites: AE 424 or ME 521.

**AE 712. Advanced Aerodynamics Laboratory (3).** Advanced topics in wind tunnel testing including analysis and sensitivity, modeling techniques, freestream 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 Aerosol Dynamics (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, buffet, dynamic response to rapidly applied periodic forces, aerodynamic 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 perspectives 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 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, scale representation of the Navier-Stokes equations, incompressible Navier-Stokes equations. Prerequisite: AE 424 or ME 521.

**AE 722. Finite Element Analysis of Structures I (3).** Advanced treatment of the theoretical concepts and principles necessary for the application of the finite element method in the solution of differential equations in engineering. Prerequisite: AE 625 or equivalent or instructor's consent.

**AE 731. Theory of Elasticity (3).** Develops the equations of the theory of elasticity and uses them to determine stress and displacement fields in linear elastic isotropic bodies; uses Airy stress functions to obtain solutions; and introduces energy principles and variational methods. Prerequisite: instructor's consent.


**AE 737. Mechanics of Damage Tolerance (3).** An introduction to the mechanics of damage tolerance emphasizing stress analysis-oriented fracture mechanics. Includes stress intensity, fracture toughness, residual strength, fatigue crack growth rate, fatigue crack propagation, and damage tolerance concepts. Prerequisite: AE 525 or instructor's consent.

**AE 759. Neural Networks for System Modelling 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 355, AE 373 and 333.

Courses for Graduate Students Only

**AE 801. Structural Dynamics (9).** A study of the dynamic response of multiple degree of freedom systems and continuous systems subjected to external dynamic forcing functions; classical, numerical, and energy solutions. Prerequisite: AE 777.

**AE 807. Modern Flight Control Systems Design II (3).** Continuation of AE 707, emphasizing the effects of atmospheric turbulence and corrupted measurements; state estimation using the Kalman filter; output feedback design methods for flight controls; robustness requirements in the design, and extension to digital systems. Prerequisites: AE 707 and 714.

**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 analysis 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 Ares Rule: nozzle throat design; detached shock wave computations; computational methods. Prerequisites: AE 424 or equivalent; and AE 711 or 716.

**AE 818. Hypersonic Aerodynamics (3).** Classical hypersonic theory and approximations; Newtonian flow; flight corridors and trajectories; hot gas effects; experimental difficulties; short time test facilities; computational techniques; propulsion methods; airframe-engine integration; SCRAM jets. Prerequisites: AE 711 and 716 or equivalent.

**AE 822. Finite Element Analysis of Structures II (3).** Formulation of the finite element equations by variational methods; the use of isoparametric and higher order elements for analyzing two- and three-dimensional problems in solid mechanics; introduction to solutions of nonlinear problems. Prerequisites: AE 722 and 731.

**AE 831. Continuum Mechanics (3).** Introductory treatment of the fundamental, unifying concepts of the mechanics of continua with applications to classical solid and fluid mechanics. Prerequisite: consent of the instructor.

**AE 832. Theory of Plates and Shells (3).** Small deflections of thin elastic plates; classical solutions for rectangular and circular plates; approximate solutions for plates of various shapes; introduction to the analysis of thin shells. Prerequisite: AE 731.

**AE 833. Theory of Elastic Stability (3).** Buckling of columns,
frames, beams, plates, and shells. Prerequisite: AE 731.


AE 860. Selected Topics (1-3). Prerequisite: instructor’s consent.

AE 876. MS Thesis (1-6). Graded S/U only.

AE 878. MS Directed Project (1-3). A project conducted under the supervision of an academic advisor for the directed project option. Requires a written report and an oral presentation on the project. Graded S/U 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 computation methods; application of computer programs for practical airfoil design problems including high lift and control devices. Prerequisites: AE 711, MATH 797.

AE 913. Aerodynamics of AEROSPACE FLIGHT (1). 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 lifting 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, parallelized Navier-Stokes equations, and Navier-Stokes equations. Explore the fundamentals of unstructured grids and finite volume schemes. Prerequisite: AE 719 or ME 658.

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 940. 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, Hyuck M. Kwon, Glyn Rimmington, M. Ed Sawan (chairperson and graduate coordinator)
Associate Professors: John S. O'Loughlin, Larry D. Paiermann, Ravindra Pande, Steven R. Skinner, Asrat Teshome, John M. Watkins
Assistant Professors: Coskun Cetinkaya, Sudharman Jayawerara, Fred J. Meyer, Kameswara R. Namuduri

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 577. Special Topics in Electrical and Computer Engineering (1-4). New or special courses presented on sufficient demand. Repeatable for credit. Prerequisite: department consent.

ECE 585. Electrical Design Project I (2). 3L. A project 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). 3L. 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 IENG 254.

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

ECE 594. Microprocessor Based System Design (4). 3L. 1L. Presents development of microprocessor-based systems. Studies interfacing the address bus, data bus, and control bus to the processor chip. 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. Lab provides hands-on experience. Prerequisites: ECE 394, or 238 and 294.

ECE 595. Electrical Design Project II (2). 3L. A continuation of ECE 595. Prerequisite: ECE 585. Will not count toward 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 616. Introduction to Wireless Communications (3). Introduces students to the basic principles and issues related to wireless communications. We will consider not only the basic technical aspects of the wireless communications but also the market issues, social and cultural impact of the wireless communications, deregulation issues as well as political issues relating to the development and wide popularity of wireless communications. The level of the course will be applicable to junior or senior undergraduates as well as beginning graduate students. Prerequisites: ECE 393, IT 254.

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 signalling. Prerequisite: ECE 586 or departmental consent.

ECE 644. Advanced Digital Lab (2). 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
ECE 666. Computer Forensics (3). Computer crimes include security violations and unauthorized access and theft of sensitive information. In this course, we discuss procedures for the identification, preservation, and extraction of electronic evidence that can be legally used when a computer crime is committed. From the network perspective, we discuss auditing and investigation of network and host infrastructures. Forensic tools and resources for system administrators and information system security officers will also be covered. Legal issues related to computer and network forensics will be discussed. There will be about eight program-related laboratory exercises in this class. This course is intended for senior undergraduate students and graduate students majoring in ECE and computer science.

Prerequisites: ECE 229 and CS 540. In addition, good programming skills in one of the languages (C, C++, or Java), familiarity with the operating systems (UNIX/WINDOWS) are required.

ECE 684. Introductory Control System Concepts (3). An introduction to system modeling and simulation, dynamic response, feedback theory, stability criteria, and compensation design. Prerequisite: ECE 383.

ECE 685. Power Electronics (4). 3R; 3L; 3D. 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 requirements 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 BJTs and MOS analog and digital integrated circuits. Includes BJTs, BIPMOS, and MOS fabrication; application specific semi-custom VLSI arrays; device performance and characteristics; and integrated circuit design and applications. Prerequisites: ECE 194 and 493 or department consent.

ECE 699. 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, FSK, MSK, and other techniques appropriate for communicating digital information in both base-band and band-pass systems; intersymbol interference; effects of noise on system performance; optimum systems; and general M-ary digital systems in signal-space. Prerequisites: ECE 586 and 794.

ECE 729. Data Communication Networks (3). Presents a quantitative performance evaluation of telecommunication networks and systems. Includes fundamental digital communications system review; packet communications queuing theory; OSI, x.25, and X.121 layered architectures; stop-and-wait protocol, go-back-N protocol, and high-level data link layer; network layer flow and congestion control; routing; polling and random access; local area networks (LAN); integrated services digital networks (ISDN); and broadband networks. Prerequisites: ECE 383 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 394 or equivalent.

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. Prerequisites: ECE 229 and 394.

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 ENE 254.

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

ECE 765. Routing and Switching II (4). 3R; 3L. Discusses different bridging techniques, including SBB, BSSB, and DLSW. Also includes 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 766. Information Assurance and Security (3). Presents basic concepts in information assurance and security including encryption, digital certificates, security in networks, operating systems, and databases. Topics in intrusion detection, legal and ethical issues in security administration will also be discussed. Prerequisites: 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 approximation, covers sensitivity and noise analyses. Prerequisite: ECE 383 and 492.

ECE 782. Digital Signal Processing (3). Presents the fundamental concepts and techniques of digital signal processing. Time domain operations and techniques include difference equations and convolution summation. Covers Z-transform methods, frequency-domain analyses of discrete-time signals and systems, discrete Fourier transform, and fast Fourier transform. Emphasizes the frequency response of discrete-time systems and the relationship to analog systems. Prerequisite: ECE 383 or departmental consent.

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 informs 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. Prerequisite: ECE 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 stabil...
Courses for Graduate Students Only

E CE 810. Optical Networks (3). A comprehensive study of fiber optic communication systems, components, and networks. Subjects include modulation, wavelength division multiplexing, dispersion, single mode and multimode fibers, fiber optic components, optical cross-connects, and SONET rings. Prerequisite: E CE 510.

E CE 817. Theory of Detection and Estimation (3). Introduces students to the fundamental ideas of detection and estimation theory. Some of the topics covered will include binary hypothesis testing, optimal signal detection, performance analysis of optimum detectors, elements of parameter estimation and signal estimation. These ideas are basic to statistical signal processing and communications transceiver design. Prerequisite: E CE 754.

E CE 826. Digital Communication Systems II (3). Studies modern digital communication systems. Discusses topics such as channel and symbol synchronization techniques; fading multipath channels; frequency-hopped spread spectrum systems; smart antenna array systems; space time codes (STC); space-time block codes (STBC); multi-input multi-output (MIMO); orthogonal frequency division multiplexing (OFDM) systems; and multi carrier code division multiple access (MC-CDMA) communications. Prerequisite: E CE 726.

E CE 836. Computer Performance Analysis (3). Teaches the basic concepts in stochastic modeling of systems for analysis and for simulation. Analytic modeling techniques include discrete- and continuous-time Markov chains, queuing theory, and queuing networks, as well as approximate methods based on these techniques. Operational analysis presents a non-stochastic, measurement-based perspective to the analysis of computer systems. Also emphasizes discrete-event simulation, a widely-used technique in many areas of performance evaluation. Performance metrics taken from stochastic simulations are random variables, and are subject to the same types of statistical analysis as data obtained from real systems. Prerequisites: E CE 754.


E CE 845. 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 prior statistical characteristics of the signal or 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 (LGL) filters. All are adaptive and self-designed. Includes concepts of convergence, tracking ability, and robustness. Prerequisite: E CE 754.

E CE 884. Multi-Service Over IP (4), 3R; 1L. Advanced networking course; deals with challenges and solutions associated with sending voice, video, and data (multi-service) over IP. Includes Telephony signaling, call routing and dial plans, measuring voice quality, video digitization and coding, quality of service issues, and current research. Hands-on lab allows students to design, troubleshoot, and test different VoIP scenarios. Prerequisites: E CE 764 and graduate standing in E CE.

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

E CE 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.

E CE 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.

E CE 882. Speech Digital Signal Processing (3). An introductory study in speech signal generation and digital speech signal processing. Includes speech generation and perception, acoustic-phonetic models, 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. Prerequisite: E CE 754.

E CE 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: E CE 782 or departmental consent.

E CE 886. Error Control Coding (3). Introduces error control codes, including Golomb-Rudin codes, linear block codes, cyclic codes, Hadamard codes, Galois codes, BCH codes, Reed-Solomon codes, convolutional codes, Viterbi decoding algorithm, Turbo codes, and ARQ protocols. Applies to digital and cellular and satellite communications systems. Prerequisite: E CE 726.

E CE 893. Optimal Control (3). Reviews mathematics relevant to optimization, including calculus of variations, dynamic programming, and other norm-based techniques. Formulates various optimization problems and numerically solves them with MATLAB. Prerequisites: E CE 792.

E CE 894. Advanced Computer Architecture II (3). Vector processors, memory-hierarchy design, input, and output. Prerequisite: E CE 884.

E CE 897. Operation and Control of Power Systems (3). Acquires 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: E CE 598.

E CE 901. Advanced Selected Topics in Electrical Engineering (1-3). Presents new or specialized advanced topics in engineering. Repeatable for credit. Prerequisite: instructor's consent.


E CE 982. Speech Recognition (3). Reviews topics of speech digital signal processing and analysis as necessary for a study of speech recognition such as speech signal production and perception; acoustic-phonetic characterization of speech signals; representing speech signals in time and frequency, and linear prediction of speech signals. Studies topics such as vector quantization, pattern comparison and template matching methods, dynamic time alignment and warping, stochastic methods such as hidden Markov models, linear prediction or phonetics as two methods of segmenting speech signals, language or context-dependent models, and small or large vocabulary models. Prerequisite: E CE 882 or departmental consent.

E CE 986. Wireless Spread Spectrum Communications (3). Explains what spread-spectrum communications is and why direct-sequence code-division multiple access (DS-CDMA) spread-spectrum is used for wireless communications. Studies the block diagrams of the IS-54 forward and reverse wireless communication links under multi-path mobile fading environment using analysis techniques and simulation. Analyzes pseudo-noise (PN) signal generation, the band-limited waveform shaping filter, convolutional coding, and Walsh code orthogonal modulation. Takes a general view of coherent communication and non-coherent Walsh orthogonal sub-optimal demodulation—other simultaneously supportable subscribers, and third generation CDMA. Prerequisite: E CE 726.

E CE 990. Advanced Independent Study (1-3). Arranges individual, independent study in specialized content areas in engineering under the supervision of a faculty advisor. Repeatable toward the PhD degree. Prerequisites: advance standing and departmental consent.

E CE 993. Large Scale Control Systems (3). Sensitivity analysis of deterministic and stochastic systems; sources of uncertainty in control systems, e.g., plant parameter variation, delays, sensor and actuator nonlinearities, noise, and model reduction; quantitative study of the effects of uncertainties on system performance; low-sensitivity design strategies, and output feedback design sensitivity function approximation, singular perturbation, and model education techniques; adaptive systems; and near-optimal control. Prerequisite: E CE 893.
Industrial (I EN) and Manufacturing Engineering (MFEN)

Graduate Faculty

Professors: Don Malzahn, Abu Masud (chairperson and graduate coordinator)

Associate Professors: S. Hossein Cheraghi, Krishna Krishnan, Viswanathan Madhavan, Janet M. Twooden

Assistant Professors: Michael Jorgensen, Jamal Sheikh-Ahmad, Gamal Weheba, Lawrence Whitman, Bayram Yildirim

The industrial and manufacturing engineering (MEM) department at WSU is committed to instruction and research in design, analysis, and operation of manufacturing and related 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 MEM department offers Master of Engineering Management, Master of Science, and Doctor of Philosophy degree programs in industrial engineering (MSIE and PhDIE, respectively). Fields of specialization for the MSIE and PhDIE programs include engineering systems, ergonomics/human factors, and manufacturing systems engineering. The department also offers graduate certificate programs in five topical areas: computer-aided design and manufacturing, industrial ergonomics and safety, systems engineering and management, production systems, and quality engineering management.

Facilities

The following facilities are available for graduate students.

1. The Graphics Lab has 25 NT stations with ProEngineer, ARENA, and NeuralWare software.
2. The Manufacturing Metrology Lab has a Mitutoyo CMM, an optical comparator, and a host of metrology tools.
3. The CIM Lab has a CNC vertical machining center, a CNC lathe and a CNC Router.
4. The Cessna Manufacturing Processes Lab has a 600 horse power engine, drill presses, and facilities for spray/hot gas welding, casting, and forming.
5. The Non-Traditional Machining Lab currently has an EDM machine.
6. The Automation and Controls Lab has four workstations (PLC, I/O devices, and appropriate software) and data collection and control devices.
7. The Virtual Reality Development Lab has head-mounted displays, a motion tracking system, computers, and a variety of software.
8. The Ergonomics/Human Factors Lab has a 3-D motion analysis system, EKG system, treadmill, bicycle ergometer, metabolic cart, load cells, audiometric chamber, and other measurement devices.
9. The Graduate Computing Lab, available only to IE/MEM students, has a number of PCs, all on engineering LAN.
10. The Open Computing Lab has 43 PCs, several laser printers, and a wide-flat scanner, all on engineering LAN.
11. Several SUN and SGI workstations are available for use in research.

Curriculum and Research Concentrations

The industrial and manufacturing engineering teaching and research concentrations are clustered around the following three areas.

- **Engineering Systems**: Emphasis includes optimization; multi-criteria decision making; modeling and analysis of manufacturing/service systems; management of engineering enterprises; decision analysis; total quality management; application of intelligent systems and simulation in manufacturing; and activity-based costing.
- **Ergonomics/Human Factors**: Emphasis includes industrial ergonomics: bio-mechanics; human machine systems; occupational safety and health; and the industrial hygiene issues; and ergonomics and human factors issues in aviation and space systems. Another area of continued research involvement is rehabilitation engineering, especially dealing with persons with severe physiological disabilities.
- **Manufacturing Systems Engineering**: Emphasis includes planning, design, and control of manufacturing systems; CAD/CAM/CIM systems; measurement and inspection; GD&T; supply chain management; manufacturing processes; forming, composites manufacturing; and free-form surfaces manufacturing.

Master of Science in Industrial Engineering

The Master of Science in Industrial Engineering (MSIE) degree program offers concentrations 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 work.

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 successfully completed: MATH 344, Calculus III, I EN 255, Engineering Economy; 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 3.00, on a 4.00 scale, in the last 60 hours of undergraduate courses and in all graduate courses (students with lower GPA may be considered only for probationary or nondegree admission); and
5. indicate one of the following as a concentration 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 213 on the computer-based or 580 on the paper-based TOEFL; students requesting additional assurance 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

2. CESP 750D, 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 3.00 GPA the minimum required graduate credit hours:
   - Thesis Option—a minimum of 24 hours of course work plus 6 hours of thesis,
   - Directed Project Option—a minimum of 30 hours of course work plus 3 hours of directed project,
   - All Course Work Option—a minimum of 33 hours of course work plus a written core competency exam; and
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 I EN 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 213 on the computer-based or 550 on the paper-based 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:
   Directed Project Option—a minimum of 30 hours of course work plus 3 hours of directed project.
   All Course Work Option—a minimum of 33 hours of course work plus a written core competency exam.
   The graduate course work consists of 25 hours of core courses plus 5-8 hours of engineering electives.
3. Electives: Two related engineering courses, one industrial and manufacturing engineering or business course (from a selected list);
4. An approved Plan of Study. 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.

Certificate Programs
The IMfgE department offers graduate certificate programs in the topical areas described below. Students seeking any of these certificates must be admitted to the Graduate School (1) in one of the degree programs offered by the department or (2) in a non-degree A status. All Graduate School policies relative to admissions apply. International students will not be issued an I-20 for pursuing a certificate program only. They may obtain a certificate only while concurrently pursuing a graduate degree. Students may apply certificate course work toward a degree program. A cumulative graduate grade point average of at least 3.000 must be maintained for all courses comprising the certificate program with no grades below C.

Computer-Aided Design and Manufacturing
This certificate provides advanced knowledge and methodology of computer-aided design and manufacturing for practitioners in industry who are responsible for product design, development, and manufacturing.

The curriculum focuses on the essential knowledge, analytical techniques, and contemporary issues of computer-aided design and manufacturing for product design, development, and manufacturing. Program prerequisite: MATH 243, Calculus II, and others based on course selected. This program requires satisfactory completion of any four of the following courses (a total of 12 credit-hours):
- MFGE 622, Computer-Aided Design and Manufacturing
- I EN 775, Computer Integrated Manufacturing
- I EN 780K, Computer-Aided Analysis of Manufacturing Processes
- I EN 785, Tolerancing in Design and Manufacturing
- I EN 880S, Free Form Surfaces

Industrial Ergonomics and Safety
This program provides advanced knowledge and methodology of ergonomics and safety engineering for practitioners in industry who are responsible for the design and evaluation of work systems (tasks, materials, tools, equipment, workstations, and environments) for better usability, health, safety, and performance of workers in the workplace.

The curriculum focuses on the essential knowledge, analytical techniques, guidelines, regulations, and contemporary issues of ergonomics and safety engineering for the design and evaluation of various work systems in industry. Program prerequisite: MATH 243, Calculus II. This program requires satisfactory completion of the following four courses (a total of 12 credit-hours):
- I EN 549, Industrial Ergonomics
- I EN 557, Safety Engineering
- I EN 724, Statistical Methods for Engineers
- I EN 760, Ergonomics Topics

Systems Engineering and Management
Students completing this program will be able to apply systems concepts and techniques to the understanding, description, design, and management of large-scale systems requiring the integration of information and human activity.

The curriculum focuses on the essential knowledge, analytical techniques, and contemporary issues in complex systems definition, design, and decision-making. Program prerequisite: MATH 243, Calculus II. This program requires satisfactory completion of the following four courses (a total of 12 credit-hours):
- I EN 664, Engineering Management
- I EN 724, Statistical Methods for Engineers
- I EN 740, Analysis of Decision Processes
- I EN 764, Systems Engineering and Analysis

Production Systems
This program provides advanced knowledge and methodology of production systems design, evaluation, and operation for practitioners in industry who are responsible for the development and management of production systems in the workplace.

The curriculum focuses on the essential knowledge, analytical techniques, guidelines, and contemporary issues in the design, evaluation, and management of production systems in industry. Program prerequisite: I EN 550, Operations Research. This program requires satisfactory completion of the following four courses (a total of 12 credit-hours):
- I EN 553, Production Systems
- I EN 724, Statistical Methods for Engineers
- I EN 780N, Supply Chain Management
- I EN 780S, Lean Manufacturing

Quality Engineering and Management
This certificate program is primarily intended for persons with industrial affiliation who may be interested in enhancing their skills in Quality Engineering Management. The program includes most of the American Society for Quality's (ASQ) certification requirements, with detailed coverage of applied statistics and management techniques.

The curriculum focuses on the essential knowledge, analytical techniques, guidelines, and contemporary issues in the design and evaluation of quality engineering and management systems. Program prerequisite: MATH 243, Calculus II. This program requires satisfactory completion of four courses (a total of 12 credit-hours), three of which are required and one is elective:
- Required Courses (9 hours): I EN 554, Statistical Quality Control
- I EN 724, Statistical Methods for Engineers
- I EN 854, Quality Engineering
- Electives (one course, 3 hours): I EN 754, Reliability and Maintainability Engineering

Industrial Engineering (I EN)

Courses for Graduate/Undergraduate Credit
- I EN 524, Engineering Probability and Statistics II (3). A study of hypothesis testing, regression analysis, analysis of variance, correlation analysis, and design of experiments emphasizing applications to engineering. Prerequisite: I EN 254 or STAT 471.
- I EN 559, Industrial Ergonomics (3). A systematic approach to the optimization of the human-task-environment system. Includes work space design, manual materials handling, cumulative trauma disorders, and environmental factors. Emphasizes applications in industry. Prerequisite: I EN 452. Corequisite: I EN 524 or department consent.


EN 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: EN 554.

EN 556. Information Systems (3). Provides a basic understanding of information systems in a modern enterprise, including database design, information technology, and ethics using hands-on activities and directed classroom discussion. Prerequisite: EN 452 and CE 229.

EN 557. Safety Engineering (3). Environmental aspects of accident prevention, industrial compensation, and safety legislation. Fundamental concepts of occupational health and hygiene. Prerequisite: EN 254 or STAT 471.

EN 563. Facilities Planning and Design (2). Quantitative and qualitative approaches to problems in facilities planning and design, emphasizing activity relationships, space requirements, materials handling and storage, and plant layout. Prerequisites: EN 550 and MGEF 258. Corequisite: EN 452.


EN 564. 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. Prerequisites: EN 254 and 255.

EN 724. Statistical Methods for Engineers (3). For graduate students majoring in engineering. Students study and model real-life engineering problems and draw reliable conclusions through applications of probability theory and statistical techniques. Cannot be used to fulfill degree requirements for the 85 degree in industrial and manufacturing engineering. Prerequisite: MATH 243.


EN 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: EN 254 and 255.

EN 749. Advanced Ergonomics (3). A continuation of EN 549. Includes principles and application of human factors to the design of the workplace, displays, control systems, hand tools, and video display terminals. Prerequisite: EN 549.

EN 750. Industrial Engineering Workshops (1-4). Various topics in industrial engineering. Prerequisite: departmental consent.

EN 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: EN 524.

EN 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: EN 524 or instructor's consent.


EN 760. Ergonomics Topics (3). New or special courses on topics in ergonomics and human factors engineering. May be repeated for different topics. Prerequisite: departmental consent.

EN 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: EN 254 and 255.

EN 767. Lean Manufacturing (3). Introduces lean concepts as applied to the manufacturing environment. The course deals with the concepts of value, value stream, flow, pull, and perfection. Includes waste identification, value stream mapping, visual controls, and lean metrics. Prerequisite: IE 553.

EN 770. Industrial Automation (3). 2K, 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 system. Prerequisite: IE 524 or knowledge of a programming language.

EN 779. Computer Integrated Manufacturing (3). A study of the concepts, components, and technologies of CIM systems; enterprise modeling for CIM; local area networks; CAD/CAM interfaces; information flow for CIM; shop floor control, and justification of CIM systems. Prerequisite: IE 529 or knowledge of a programming language, MGEF 558.

EN 780. Topics in Industrial Engineering (3). New or special courses are presented under this listing. Repeatable for credit when subject matter warrants.

EN 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 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.

EN 783. Supply Chain Management (3). Quantitative and qualitative techniques used in the design and management of the supply chain. Includes distribution management, multi-plant coordination, optimal design of the logistics network, adequate safety stock levels and the risk pooling concept, and integrating decision support systems (DSS) in the management of the supply chain. Prerequisite: IE 553.

EN 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

EN 825. Enterprise Engineering (3). How to design and improve all elements associated with the total enterprise through the use of engineering and analysis methods and tools to more effectively achieve its goals and objectives. The course deals with the design, analysis, implementation and operation of all elements associated with an enterprise. Includes business process re-engineering, graphical enterprise modeling tools and architectures, and enterprise transformation. Prerequisite: IE 553.

EN 835. Applied Forecasting Methods (3). A study of the forecasting methods, including smoothing techniques, time series analysis, and Box-Jenkins models. Prerequisite: EN 524.

EN 842. Advanced Simulation (3). A study of advanced techniques and methods for statistically selecting input distributions for and analyzing output from simulation models. Also studies variance reduction and model validation tech-
niques. Prerequisites: I EN 563 and 524.

I EN 884. Quality Engineering (3). A broad view of quality tools and their integration into a comprehensive quality management and improvement system. Covers the theory and approaches of the major quality leaders such as Deming, Juran, and Crosby. Explores off-line and on-line quality engineering techniques, including cost of quality, the seven "old" and seven "new" tools, Quality Function Deployment, and statistical process control methods. Explores design of engineering experiments, including Taguchi's methods. Prerequisite: I EN 524.

I EN 887. Environmental Hygiene Engineering (3). Evaluation and control of mechanical, physical, and environmental factors considered include heat, cold, noise, vibration, light, pressure, acceleration, radiation, and air contaminants. Prerequisite: I EN 549.

I EN 876. Thesis (1-6). Graded S/U only. Repeatable for credit. Prerequisite: consent of advisor.

I EN 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 interpretable 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 modeling, economic analysis models, diagnostic models, combinatorial optimization, and machine vision.

I EN 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.

I EN 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.

I EN 890. Independent Study in Industrial Engineering (3). Analysis, research, and solution of a selected problem. Prerequisite: instructor's consent.

I EN 930. Multiple Criteria Decision-Making (3). An extensive treatment of techniques for decision-making where the multiple criteria nature of the problem must be recognized explicitly. Prerequisite: I EN 550.

I EN 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: I EN 549.

I EN 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: I EN 549 and AE 223.

I EN 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: E CE 229 or AE 227 or departmental consent.

I EN 960. Advanced Selected Topics (1-3). New or special courses on advanced topics presented under this listing on sufficient demand. Prerequisite: instructor's consent.

I EN 976. PhD Dissertation (1-6). Graded S/U only. Repeatable for credit. Prerequisite: admission to doctoral aspirant status.

I EN 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 principles of measurement, data acquisition, data analysis, dimensional measurement, basic understanding and evaluation of CMM, force, temperature, 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 flat, and automatic data collection. Prerequisites: I EN 254 and MFGE 258.

MFGE 545. Manufacturing Systems (3). Cross-listed as I EN 553. 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 558.

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 fixtures and jigs. Includes an introduction to design of inspection tools, machining and processing design tools, and modular fixtureing. Application of theories to labs and design problems. Prerequisite: MFGE 258. Corequisite: AE 223.

MFGE 588. Manufacturing Methods and Materials II (4). 3R, 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 MFGE 260.

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: I EN 222 and E CE 229 or equivalent.

MFGE 654. Nontraditional Machining Processes (3). A study of the role and economics of nontraditional processes: use of laser and electron beams in inspection and measurement, heat treatment, material removal, material joining, and cutting. 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: Behnam Bahr (graduate coordinator), Jharna Chaudhuri (chairperson), Hamid M. Lankarani, Dennis Signer, Jorge E. Talia

Associate Professors: David N. Koert, T.S. Ravigururajan, C. Charles Yang

Assistant Professors: Ikramuddin Ahmed, Kurt Sostinseke

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; multidisciplinary impact dynamics; mechanical engineering design and manufacturing; thermofluid sciences and computational fluid dynamics and heat transfer; 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 computational fluid dynamics laboratory (CFD lab) with a Linux-based network, a scanning electron microscope (SEM) located in the materials laboratory, the crash dynamics laboratory, and other specialized laboratories and test stands.
the shock and vibration laboratory, the propulsion laboratory, the computer integrated manufacturing laboratory, and the mechatronics 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.wichita.edu/me/grad/grad.htm

Doctor of Philosophy

Areas of research specialization for the Doctor of Philosophy (PhD) program are within those stated previously for the MS degree. Exact specialities 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.wichita.edu/me/grad/grad.htm

Courses for Graduate/Undergraduate Credit

The courses numbered 302 through 760 are not automatically applicable toward an advanced degree in engineering. They must be approved by the student's advisor, the graduate coordinator, and the chairperson of the department. Courses required for the BS degree normally are not permitted for use toward the graduate degree in mechanical engineering.

ME 502. Thermodynamics II (3). Continuation of ME 398, emphasizing cycle analysis, thermodynamic property relationships, and psychrometrics, with an introduction to combustion processes and chemical thermodynamics. Prerequisite: ME 398 with a grade of C or better.

ME 521. Fluid Mechanics (3). Fluid statics. Basic equations of fluid mechanics. Study of flow in closed conduits and over immersed bodies. Includes compressible flow, turbomachinery, and measurements in fluid mechanics. Prerequisites: ME 396 with C or better and MATH 555 and AE 373.


ME 533. Mechanical Engineering Laboratory (3). Introduces the basics of engineering measurements. Discusses related theory, followed by applications in such areas as strain, sound, temperature, and pressure measurements.

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 matter 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 attainment 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 bead heat exchangers, radiators, recuperators, and regenerators. Prerequisites: ME 521 and 522, or equivalent.

ME 633. Mechanical Engineering Systems Laboratory (3). Applications of Finite Element Methods in Mechanical Engineering (3). Introduction to the finite element method (FEM) as a powerful and general tool for solving differential equations, arising from modeling practical engineering problems. Finite element solutions to one- and two-dimensional mechanical engineering problems in fluid mechanics, heat transfer, solid mechanics, and vibrations. Includes Galerkin's and variational finite element models. Introduces commercial finite element computer tools such as ALCOR 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 opened 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 matter warrants. Prerequisite: departmental consent.

ME 653. Internal Combustion Engines (3). A broad coverage of the basics of internal combustion engines emphasizing 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 Systems (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: either a) ME 533, ECE 262, and MATH 555 or b) ECE 262.

ME 662. Mechanical Engineering Practice (3). An exercise in the practice of mechanical engineering; students engage in a comprehensive design project requiring the integration of knowledge gained in prerequisite engineering science and design courses. Team effort and both oral and written presentations are a part of the experience. Prerequisite: mechanical engineering students in their last semester of study.

ME 664. Introduction to Fatigue and Fracture (3). Deals with the primary analytical methods used to quantify fatigue damage. These are the stress life approach, strain life approach, and the fracture mechanics approach. Prerequisites: ME 250.

ME 665. Selection of Materials for Design and Manufacturing (3). Focuses on the selection of engineering materials to meet product and manufacturing requirements. Solution to various product and manufacturing problems by appropriate selection of materials is illustrated through the use of numerous examples and case studies. Prerequisites: ME
ME 666. Materials in Manufacturing Processes (3). Deals with fundamental principles of materials and their applications to manufacturing processes. Prerequisite: ME 250.

ME 667. Mechanical Properties of Materials I (3). Major focus on deformation mechanisms and on crystal defects that significantly affect mechanical properties. Also covers plasticity theory, yield criteria for multi-axial states of stress, fracture mechanics, and fracture toughness. Includes some review of basic mechanics of materials and elasticity as needed. Prerequisite: ME 250 or departmental consent.

ME 669. Acoustics (3). Fundamentals of acoustics including the study of simple harmonic systems, acoustic waves, transmission phenomena, and environmental and architectural acoustics. Prerequisites: MATH 555, AE 373.

ME 678. Studies in Mechanical Engineering (1-3).* Arranged individual, independent study in specialized content areas in mechanical engineering, under the supervision of a faculty member. Requires written report or other suitable documentation of work for departmental records. Three (3) hours maximum technical elective credit. Not for graduate credit. Prerequisite: departmental consent.

ME 719. Basic Combustion Theory (3). Introduction to the fundamental principles of combustion processes. Examines the chemistry and physics of combustion phenomena, that is, detonation and flames, explosion and ignition processes. Prerequisites: CHEM 111Q 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 manipulator, and simulation, along with an introduction to artificial intelligence and computer vision. Prerequisite: ME 659 or equivalent.

ME 739. Advanced Machine Design (3). A broad coverage of principles of mechanical analysis and design of machine elements. Emphasizes dynamic system modeling, prediction of natural frequencies and forced response, effect of support flexibility, failure theories used in design, and fatigue life prediction. Typical mechanical systems studied are gears, bearings, shafts, rotating machinery, and many types of spring-mass systems. Uses fundamentals learned in mechanics, strength of materials, and thermal sciences to understand mechanical system modeling, analysis, and design. Prerequisite: ME 541 or instructor's consent.

ME 747. Microcomputer-Based Mechanical Systems (3). 2R, 3L. Microcomputer-based real-time control of mechanical systems. Familiarizes students with design and methodology of software for real-time control. Includes an introduction to the C programming language which is most relevant to interfacing and implementation of control theory in computer-based systems. Laboratory sessions involve interfacing microcomputers to mechanical systems and software development for control methods such as PID. Prerequisite: ME 659 or instructor's consent.

ME 750. Special Topics in Mechanical Engineering (1-3). New or special topics are presented on sufficient demand. Repeatable for credit when subject material warrants. Prerequisite: departmental consent.

ME 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. Fracture Mechanics (3). Covers fracture mechanics in metals, ceramics, polymers and composites. Suitable for graduate and undergraduate study in metallurgy and materials, mechanical engineering, civil engineering, and aerospace engineering where a combined materials-fracture mechanics approach is stressed. Prerequisite: ME 250 or departmental consent.

ME 762. Polymeric Composite Materials (3). A basic understanding and knowledge about the structure and mechanical properties of polymeric composite materials in detail. Discusses both short fiber and continuum 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—not upon the use of thermodynamics 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). Introduces 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 which can include determination of the crystal structure of materials, chemical analysis, stress and strain measurements, study of phase equilibrium, 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/No 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, laminar 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 biodynamics. Prerequisite: ME 729 or instructor's consent.

ME 832. Failure Analysis Applications in Mechanical Design (3). Application of engineering fundamentals 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 459 or departmental consent.

ME 847. Applied Automation and Control Systems (3). 2R, 3L. Control theory condensed to engineering practice with the analysis, design, and construction of operating control systems. Experiments with pneumatic, hydraulic, and electromechanical servo-systems. Implementation of feedback and feed forward control schemes for various industrial systems.
and machine tools. The experiments are project-oriented and intended to be representative of the current state-of-the-art in classical and modern control practice. Prerequisite: ME 659 or equivalent.

ME 850. Special Topics in Mechanical Engineering (3). New or special topics are presented on sufficient demand. Repeatable for credit when subject material warrants. Prerequisite: departmental consent.

ME 551. 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 553. Principles and Applications of Radiative Heat Transfer (3). Radiative properties of real surfaces, configuration factor analysis, radiative transfer in participating media, exchange factor analysis, Monte Carlo methods. Prerequisite: ME 522 or departmental consent.

ME 854. Two-Phase Flow Heat Transfer (3). Thermo-dynamic 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 858. Computational Fluid Dynamics and Heat Transfer I (3). Basic finite difference/finite volume methods; finite difference/volume representation of partial differential equations; stability analysis; finite difference/volume methods for solution of heat and fluid flow equations; grid generation and use of modern computer codes/software for analysis and visualization. Prerequisites: ME 521 and 522 or equivalent.

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 heat treatment. Students are expected to have backgrounds in chemistry, physics, math, thermodynamics, mechanics of solids, and introduction to materials in undergraduate engineering courses.

ME 864. Physical Metallurgy (3). Covers a range of basic concepts in physical metallurgy essential for further study in materials engineering. Topics include structure and diffraction, dislocations, defects and thermal processes, solid solution and hardening, diffusion, and phase diagrams and transformations. Prerequisites: ME 250 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; and various hardening and strengthening mechanisms. Concludes with discussion of physical properties and testing methods to measure these properties. Prerequisite: ME 667 or departmental consent.

ME 876. Thesis (1-6). Graded S/U only. Repeatable for credit. Prerequisite: admission to doctoral aspirant status.

ME 880. 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 I for laboratory. For example, 4R, 2L, 1I means 4 hours of lecture and 2 hours of lab.
College of Fine Arts

Offices: 415 Jardine Hall
Elaine Bernstorff, interim dean
Wendy Hanes, acting associate dean
John Boyd, coordinator for graduate studies in art
Tom Fowler, coordinator for graduate studies in music

School of Art and Design,
(316) 978-3555—Donald R. Byrum, chairperson
Art Education, (316) 978-7718—Mary Sue Foster, program director
Art History, (316) 978-7715—Frederick Hemans, program director
Graphic Design, (316) 978-7709—Jim Hellman, program director
Studio Art, (316) 978-3518—David Hilmer, program director

School of Music, (316) 978-3500—Jackie Dillon, director
Music Education Studies, (316) 978-3103—Larry Blocher, director
Musicology-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—Steven J. Peters, chairperson
Dance, (316) 978-3645—C. Nicholas Johnson, director
Theatre, (316) 978-3368—Drew Tombrillo, 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. Involve 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 the Master of Fine Arts degree. Students seeking the Master of Fine Arts degree select a major in ceramics, painting, printmaking, or sculpture. The specific requirements are described under the appropriate program listing, below.

Art Education (ART E)
Graduate Faculty
Professor: Mary Sue Foster

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

Courses for Graduate/Undergraduate Credit

ART E 510Q. Stimulating Creative Behavior (3). Includes theories of creativity; strategies for problem-finding and problem-solving; identifying various internal and external 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). Focuses on contemporary trends in aesthetics relative to the visual arts. Students write critical observations and interpretations in response to art work. Prerequisite: upper-division art major.

ART E 515. Developing Visual Materials for Art Education (3). A production laboratory that emphasizes the integration and selection of appropriate visual media for art instruction. Prerequisite: ART E 310 or equivalent.

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 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 these 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 theories through critical and reflective writing as well as curricular planning. Students consider aesthetic development and construct lessons to integrate 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. Major application of this technology to problems of design, art history, and art criticism. Develops curriculum materials for art instruction employing computer graphics and instruction. The graduate student prepares a research paper on a selected topic related to computer graphics and art learning.

ART E 758. Art Workshop (1-3). Repeatable for credit. Area to be covered is determined at the time the 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 History (ART H)
Graduate Faculty
Assistant Professors: 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 of selected areas of art history. Course content varies but individual areas are not repeatable for credit.

>ART H 521. Italian Renaissance (3). General education further study course. Painting, sculpture, and architecture in Italy from the 13th to the 16th centuries. Prerequisite: ART H 122 or
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 122 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 the early 18th-century Rococo art through Impressionism in the late 19th century. Prerequisite: ART H 124 or instructor's consent.

ART H 524. 18th Century American Art (3). General education further study course. Survey of American art from the colonial period through the 19th century, emphasizing its European roots. Prerequisite: ART H 124 or instructor's consent.

ART H 525. 20th Century Art Before 1945 (3). General education further study course. A history of American and European art from Post-Impressionism to Surrealism. Prerequisite: ART H 124 or instructor's consent.

ART H 526. Art Since 1945 (3). General education further study course. Art in the United States from 1945 to the present, stressing the relationship between contemporary trends in criticism, theory, and artistic practice. Prerequisite: ART H 124 or instructor's consent.

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 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 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 122 or instructor's consent.

ART H 536. Independent Study in Art History (1-3). Work in a 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 532. 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 Hellman, Kirsten S. Johnson
Assistant Professors: Heather Boyce-Brodie, Jeff Pulaski

Although there is no graduate degree in graphic design, the following courses are available for graduate study.

Courses for Graduate/Undergraduate Credit


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 (coordinator, graduate studies), Donald Byrum (chairperson, art/design), Ronald Christ
Associate Professor: Barry Badgett
Assistant Professors: Paul Flippin, David Hiltner

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, and 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.

Students holding degrees from institutions where requirements differ from those at Wichita State may be required to take undergraduate courses to make up deficiencies as determined by the major professor and the graduate art coordinator. Applicants should address all correspondence to the graduate art coordinator.

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 800 or above.

<table>
<thead>
<tr>
<th>Studio courses in the major area</th>
<th>Hrs.</th>
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<tbody>
<tr>
<td>..............................</td>
<td>25</td>
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</table>

* Studio courses in a minor option area ......................... 12

** 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 .............. 12

ART S 895. Professional Practices in Studio Art: Graduate ................................ 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 make observations and recommendations regarding
the quality of the students' works 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 department advisor and graduate coordinator and must meet the transfer of credit conditions of the graduate school. 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 program 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 exhibition for the University Collection.

Ceramics

Courses for Graduate/Undergraduate Credit

ART S 570. Advanced Ceramics Studio I (4). Builds on ART S 573. 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 572. Advanced Handbuilding Ceramics Studio I (4). First 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 573. Advanced Handbuilding Ceramics Studio II (4). 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. 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.

ART S 579. Terminal Project—Ceramics (1-5; 1-5).

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 840. 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 552 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
Courses for Graduate Students Only

ART S 580. Special Problems in Painting (1-5). 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 588-589. Terminal Project—Painting (1-5; 1-5).

Printmaking

Courses for Graduate/Undergraduate Credit

ART S 550. Advanced Intaglio Print I (4). Fourth in a series of five classes for the printmaking major. Students may specialize in any of the various intaglio, relief, collagraph, papercasting techniques while emphasizing personal aesthetic development. Prerequisites: ART F 145, ART S 260, 360, and 60.

ART S 561. Advanced Litho Print I (4). Third in a series of four printmaking courses for the printmaking student wishing to specialize in lithography. Students may specialize in any of the various lithography techniques while developing a personal aesthetic direction. Prerequisites: ART F 145, ART S 260, 360, 361, and 363.

ART S 562. Advanced Intaglio Print II (4). Fifth in a series of five classes for the printmaking major. Stresses a professional emphasis on technical and aesthetic research. Prerequisites: ART F 145, ART S 260, 360, 362, and 560 or departmental consent.

ART S 563. Advanced Litho Print II (4). Fourth in a series of four printmaking courses for the printmaking student wishing to specialize in lithography. Stresses a professional emphasis on technical and aesthetic research in stone lithography. Prerequisites: ART F 145, ART S 260, 360, 361, and 561 or departmental consent.

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 560. Special Problems in Printmaking—Intaglio (1-5). Advanced printmaking on an individual basis. Gives encouragement to investigation, combined with a craftsman-like approach. Techniques include all intaglio, relief, and combined methods, black and white and color. Repeatable for credit.

ART S 562 & ART S 563. 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 568-569. 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 580.

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 580. Special Problems in Sculpture (1-5). Advanced sculpture emphasizing experimentation and high quality work on an individual basis. Stresses special projects in casting, architectural sculpture, mixed media, or new materials and techniques. Repeatable for credit.

ART S 880-889. Terminal Project—Sculpture (1-5; 1-5).

School of Music

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; 833, 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.

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 Blocher (director, music education), Harold A. Popp
Associate Professors: Elaine Bernstorf, Thomas Fowler, Thomas Wine

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
Courses for Graduate/Undergraduate Credit

MUS E 686. 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 (2). Open to upper-division or graduate students and intended for the potential practicing music teacher, classroom teacher, or special education teacher. Includes identification of dysfunctioning children and their problems and current theory and practices in special music education. Satisfies the requirement, effective September 1, 1981, that applicants for initial certification or renewal of secondary and/or elementary certification shall present a survey course, or equivalent content from other courses, in the subject area of exceptional children. This provision applies to initial certification and recertification of music teachers only, grades K-12.

MUS E 688. 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 751. Cooperative Education (1-8). 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 791 may follow one of two scheduling patterns: parallel, enrolling concurrently in a minimum of 6 hours of course work in 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 On/Off only.

MUS E 785. Instrumental Music Organization and Administration (2). Problems of developing school instrumental music programs.

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 821. Administering Elementary Music (3). Investigates research and strategies in music education relating to communication, classroom management, current trends, and teaching and learning styles. Includes teacher assessments and evaluation issues.

MUS E 822. Advanced Techniques in Special Music Education (3). For special music education MME candidates only. Studies research literature and trends in special music education. Includes an evaluation of materials and techniques and special projects exploring the development of musical understanding in the dysfunctioning child. Course satisfies the requirement, effective September 1, 1981, that applicants for initial certification or renewal of secondary and/or elementary certification shall present a survey course, or equivalent content from other courses, in the subject area of exceptional children. This provision applies to initial certification and recertification of music teachers only. Prerequisite: MUS E 403 or 404.

MUS E 823. Special Music Education Practicum (3). For special music education MME candidates only. Supervised 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 awareness 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). Individualized supervised study or research emphasizing the student's personal needs. Repeatable for credit. Prerequisite: instructor's consent.

MUS E 842. Special Project in Music (1-3). Individualized supervised study or research emphasizing the student's personal needs. Repeatable for credit. Prerequisite: instructor's consent.

MUS E 844. Terminal Conducting Project (2). Individualized 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 851. Psychology of Music (2). An overview of music behaviors from a psychological perspective. Relates recent literature concerning human psychoacoustics; melodic, rhythmic, and harmonic perception; and major learning theories to current trends in music education.

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 582.

MUS E 871. History and Philosophy of Music Education (2). A study of historical trends and contemporary philosophies relevant to music education. Prerequisite: MUS E 651.


MUS E 876. Thesis (2).

Music Performance (MUS P) Graduate Faculty

Professors: Julie Bees, Joseph C. Combs, Dorothy Crum (director, voice/choral), James W. Jones, Walter J. Myers (dean), Harold A. Popp, Frances K. Shelly, Nicholas Smith

Associate Professors: Sylvia Coats, Catherine Conniglio, Robert Glaamsen, Marie King, Jean Lanning, Nancy Lutrell, Victor A. Markovich (director, winds/percussion and bands), Paul E. Reed (director, keyboard), Rebert Town, Andrew Trechak, Vernon L. Yenne

Assistant Professors: Deborah E. Baxter, John Harrison, Andrew Kolb, Nicolasa Kuster, Russell D. Widerer

Master of Music (MM) Degree Programs

MM—Performance Admission to the Master of Music (MM) program 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
The degree requires opera. Specific requirements include (1) strong vocal potential; (2) good academic background with a minimum of 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 a concentration in opera performance requires the completion of a minimum of 33 graduate hours, including two accompanied full-hour degree recitals (one vocal and one instrumental recital in either order). Students must complete a satisfactory audition early in the program—in no event later than the close of the first semester of enrollment. Permission to pursue the degree is tentative pending approval of the audition. Deficiencies, if noted, must be satisfied before admission to candidacy for the degree.

Admission Requirements
Students must have completed a Bachelor of Music in piano performance or its equivalent. All candidates must complete a satisfactory audition early in the program—in no event later than the close of the first semester of enrollment. Permission to pursue the degree is tentative pending approval of the audition. Deficiencies, if noted, must be satisfied before admission to candidacy for the degree.

Degree Requirements
The Master of Music (MM) degree with a concentration in piano performance requires the completion of a minimum of 33 graduate hours, including two accompanied full-hour degree recitals (one vocal and one instrumental recital in either order). Students must complete a satisfactory audition early in the program—in no event later than the close of the first semester of enrollment. Permission to pursue the degree is tentative pending approval of the audition. Deficiencies, if noted, must be satisfied before admission to candidacy for the degree.

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MUS A 717W. Violin Class for Adult Beginners (2). Beginning violin class: violin fundamentals, emphasizing tone and intonation development; basic techniques for reading (notes and rhythm). May not be applied to music major requirements. Repeatable for credit.

MUS A 717V. Popular Vocal Styles (2). Class voice instruction for adults emphasizing basic vocal technique and how it can be applied for use in popular styles of singing, including vocal jazz, pop, music theatre, etc. Gives students an opportunity to explore techniques for developing their own voices and to practice singing in a supportive environment. Includes information via lecture, demonstration, and listening to recordings related to stylistic differences in the popular idiom. Intended for nonmusic majors not applicable to music degree requirements. Repeatable.

General Performance (MUS P)

Courses for Graduate/Undergraduate Credit

MUS P 330, Musical Theatre Workshop (2). An interdisciplinary practicum course with opportunities for student performers to refine techniques by performing scenes from a variety of musical theatre genres, including operetta, book musicals, and rock musicals. Advanced students gain experience in directing and choreographing under faculty guidance and supervision. Jr. or Sr. Musical Theatre, Dance, and Voice majors only; and/or permission of the instructors.

MUS P 355, Senior Project (1). Cross-listed as THEA 555. An interdisciplinary course to showcase the talents of graduating seniors to professional producers, agents, and casting directors. Students develop and produce a variety show demonstrating their talents in singing, dancing, acting, directing, and choreography. For majors only. Prerequisite: Instructor's consent.

MUS P 580, Piano Pedagogy (2). Primarily the art and science of teaching. Includes observations of master teachers in the University and community.

MUS P 581, Piano Teaching Materials (2). A survey of teaching methods and materials from beginning through early advanced levels.

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 660, 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 707, Piano Repertoire (1). Gives performing and listening experience to piano performance majors. Repeatable for credit.

MUS P 710-711-712-713-714. Ensembles I except 710B, 711A, 712F [A Cappella Choir], 713B, 713F [Concert Choirs], 2A. (A) Orchestra; (B) Symphonic Wind Ensemble; (C) Gospel Ensemble; (D) A Cappella Choir; University Singers, Concert Choir; (E) Band/ensemble; (F) Piano Accompaniment; (G) Madrigal Singers; Chamber Singers; (H) Woodwind Ensemble; (I) Saxophone Quartet; (J) Brass Chamber Ensemble; (K) Percussion Ensemble; (L) Beginning String Ensemble and String Chamber Ensemble; (M) Jazz Arts Ensembles I and II; (N) Guitar Ensemble; (O) International Choir; (P) New Music Ensemble. Prerequisite: audition required. Repeatable for credit.

MUS P 711E. Opera Lab (1). See MUS P 211E.

MUS P 712K. Opera Theatre (1). See MUS P 212K.

MUS P 714K, Opera Project (4). See MUS P 214K.

MUS P 723. Applied Piano Accompanying (4). Individual private study of standard accompaniment literature with preparation of a terminal project recital (either vocal or instrumental). Prerequisite: successful completion of two semesters of graduate piano study.

MUS P 724. Applied Piano Accompanying (4). Individual private study of standard accompaniment literature with preparation of a terminal project recital (either vocal or instrumental). Prerequisite: successful completion of two semesters of graduate piano study.

MUS P 750, Music Performance Workshop (1-4). Repeatable for credit.

MUS P 760, Group Piano Practicum (2). Supervised group piano teaching for graduate students. Prerequisites: MUS P 580 and 581.

MUS P 761, Studio Piano Practicum (2). Supervised studio teaching for graduate students. Prerequisites: MUS P 580 and 581.

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 the external and internal techniques of acting for the singer, emphasizing characterization and development of a role, to ensure that students have the necessary understanding and skills to integrate the acting process while singing. Prerequisite: instructor's consent.

MUS P 790, Special Topics in Music (1-4). For individual or group instruction. Repeatable with departmental consent.

MUS P 790E. Musical Theatre and Opera Audition (3). Cross-listed as THEA 630. A practicum course which develops techniques and audition repertoire 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...
MM—Theory-Composition Concentration

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 of the Graduate Catalog.

MUS C 510. Interrelated Arts (3). Presents an aesthetic analysis of the fine arts: music, visual arts, drama, literature, and dance. Emphasizes style and commodity 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). Counterpoint devices of the 18th century as found in the works of J.S. Bach. Prerequisite: MUS C 228.

MUS C 565. 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 112Q is strongly recommended before taking the course. Students 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 641. Orchestration (2). The study of instrumentation, emphasizing idiomatic scoring for various instrumental combinations with an approach to the problems of full orchestra and band scores. Prerequisite: MUS C 227.

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 661. 16th Century Counterpoint (2). Analysis and application of the contrapuntal composition techniques of the 16th century. Prerequisite: MUS C 228.

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 685. String Literature and Materials (2). A survey and stylistic analysis of music for solo strings and chamber combinations, beginning with the early Baroque period.

MUS C 726. Voice Literature (3). A comprehensive survey of early Italian arias, French chansons, German lied, contemporary English songs, and Russian and Spanish literature.

MUS C 753. Choral Literature I (2). A historical and stylistic survey of choral literature of the Renaissance and Baroque eras.

MUS C 754. Choral Literature II (2). A historical and stylistic survey of choral literature of the Classical, Romantic, and Contemporary eras.
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.

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. Special Project in Music (1-3). Individually supervised study or research emphasizing the professional needs of the student. Repeatable for credit. Prerequisite: instructor's consent.

MUS C 852. Introduction to Bibliography and Research (3). Techniques of research and development of bibliographic skills 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 699-760. Prerequisite: MUS C 660 or equivalent.

MUS C 875. Thesis Research (2).

MUS C 876. Thesis (2).

MUS C 893. Music of Antiquity Through the Renaissance (3).

MUS C 894. Music of the Baroque Era (3).

MUS C 895. Music of the 18th Century (3).

MUS C 896. Music of the 19th Century (3).

MUS C 897. Music of the 20th Century (3).

School of Performing Arts
Steven J. Peters, 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). Advanced level. Continuation of DANCE 401. 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 exploration 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 580. Senior Project (1). Focuses on the process of choreographing and producing a dance concert for the completion of the dance major. Under the supervision of a Dance faculty mentor. A written paper and an oral review with the Dance faculty support the concert. May be taken concurrently with DANCE 505 with instructor's consent. Prerequisites: Concurrent enrollment in appropriate level technique class, senior standing.

DANCE 605. Choreography for the Musical Theatre (3). Introduces the process of choreographing for the musical theatre from casting the chorus in a musical to staging a solo to choreographing an ensemble of 30 dancers/singers. 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 620. Special Topics in Dance (1-6). For individual or group instruction. Repeatable for credit with departmental consent.

Theatre (THEA)

Graduate Faculty
Associate Professors: Judith Babich, Joyce Cavarozzi, Betty Monroe
Assistant Professors: Daniel Williams

While a formal major in theatre at the graduate level is not offered, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit

THEA 510. Design Project (1). Advanced work in the problems of stage lighting design, costume design, or scenic design. With the permission and supervision of the appropriate faculty member, the student designs for specific productions for either 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 ENG 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 530. Musical Theatre Scene Study (2). An interdisciplinary permutum course with opportunities for student performers to refine interdisciplinary techniques by performing scenes from a variety of musical theatre genres, including operetta, book musicals and rock musicals. Advanced students may explore opportunities to gain experience in directing and choreographing under faculty guidance and supervision. Jr. or Sr. Musical Theatre, Dance or Voice majors only and/or permission of the instructor.

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 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 of projects 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 590. Theatre: Special Topics (2-3). Designed to expand and strengthen the experience of the student academically and professionally. Study of developments in theatre that go beyond, or are related to, courses already offered. Students must make a richer preparation for their field of study. Topics include new technology, new materials, contemporary explorations in performance, and in-depth study of production methods.

THEA 590E. Musical Theatre Performance (3). Cross-listed as DANCE 320 and MUS P 711U. See THEA 180E.

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.
Hea 622. Academic Theatre Practicum (2). The investigation and exploration of the theatrical act in the classroom situation within the University community. Reinforces researching, writing, directing, and performing skills enrolled students functioning as a company, produce and perform for various disciplines on campus. Repeatable once for credit.

Hea 624Q. Development of the Theatre II (3). General education further study course. The history of theatrical activity as a social institution and an art form from its beginnings in the 17th century includes representative plays, methods of staging, and theatrical architecture of various periods.

Hea 624Q. 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.

Hea 630. Musical Theatre & Opera Audition (3). Crosslisted as Mus P 290E. A practicum course which develops techniques and audition repertoire 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 insights and contacts. Prerequisite: instructor's consent.

Hea 634. 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: Hea 243Q, 342, and Junior standing.

Hea 647. Scene Design II (3). Continuation of Hea 344 with more advanced work in designing settings for the stage and including studies in scenicographic 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: Hea 244 and 344.

Hea 649. Stage Lighting II and Theatre Sound (3). Continues the study and application of the theories and techniques of Hea 345, emphasizing advanced concepts of design, and provides an introduction to theatre sound production. Prerequisite: Hea 345.

Hea 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: Hea 643 and Junior standing.

Hea 653. History of Costume (3). R: I, art. 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: Hea 253 or departmental consent.

Hea 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, Hea 253.

Hea 675. Directed Study (2-4). Cross-listed as Comm 675. Individual study or projects. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

Hea 723. 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: Hea 624Q, 624Q or departmental consent.

Hea 728. Play Script Analysis (3). Develops students' abilities to analyze play scripts 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: Hea 624Q or 624Q.

Hea 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

Hea 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.

Hea 823. History of Dramatic Criticism (3). A survey and analysis of major critical theories from Aristotle to the present.

Hea 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
Juanita S. Tate, associate dean
Charles R. Fox, associate dean, Academic Affairs and Research
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 Dudte, director
Medical Technology, (316) 978-3146—Mary Conrad, chairperson
Physical Therapy, (316) 978-3604—Camilla Wilson, chairperson
Physician Assistant, (316) 978-3011—Richard Muma, chairperson
Public Health Sciences, (316) 978-3060—Camilla Wilson, 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, Master of Physical Therapy, and Master of Physician Assistant. Admission to these programs requires a bachelor’s degree and the fulfillment of requirements listed for each program elsewhere in the Graduate Catalog.

School of Health Sciences

The School of Health Sciences offers graduate programs leading to the Master of Public Health, Master of Science in Nursing, Master of Physical Therapy, and Master of Physician Assistant. 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 Bodily 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 631. 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 as 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, parental 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 710. Applied Clinical Pharmacology. (3). Discusses clinical applications of selected drug classes commonly prescribed in the primary care setting as well as the follow-up management of common chronic diseases. Discusses pharmacological management 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. Prerequisite: PHS 301, admission to graduate health professional or PA professional program, or instructor’s consent. ...

HS 711. Pharmacological Management of Acute and Chronic Diseases. (3). Discusses the clinical application of specific categories of drugs used in the treatment of several common acute and chronic diseases. Presents pharmacokinetics, mechanisms of action, dosages, side effects, and monitoring parameters of medications as they are used in these diseases and in various patient populations. Facilitates clinical application of this knowledge through case studies, class discussions, and reviews of the latest medical literature. Prerequisites: admission to graduate nursing program and department consent or completion of PHS 710 and admission to PA professional program.

HS 720. Neuroscience. (3) 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.

Medical Technology (MED T)

Course for Graduate Students Only

MED T 800. Seminar in Laboratory Sciences (1-3). Discusses recent issues and advances in the field of clinical laboratory science, including the areas of microbiology, chemistry, hematology, immunology, and immunohematology. Students are responsible for assigned topics, using current journal articles as a resource material. Prerequisite: departmental consent.

Physician Assistant (PA)

Graduate Faculty

Associate Professors: Charles Fox, Richard Muma (chair person)
Assistant Professors: David Day, John Dudte, Sue Enns, LaDonna Hale, Audrey Griffin, Timothy Quigley
Instructor: Patricia Bunton

Master of Physician Assistant

The graduate program in physician assistant studies, located in the Department of Physician Assistant at Wichita State University, is the only one of its kind in Kansas. The program prepares one to practice medicine with the supervision of a licensed physician. The functions of a physician assistant include performing diagnostic, therapeutic, preventative and health maintenance services in any setting in which the physician renders care, in order to allow more effective and focused application of the physician's particular knowledge and skills.

The WSU Department of Physician Assistant, accredited by the Accreditation Review Commission on the Education of Physician Assistants (ARC-PA), offers a 26-month (full-time, lock-step) graduate course of study which leads to a professional Master Degree of Physician Assistant. The course of study is divided into two parts: a 43-quarter-hour didactic phase and a 37-quarter-hour clinical/research phase. One class is admitted each summer.

Professional Curriculum

The professional curriculum is divided into two phases: a didactic phase and a clinical/research phase. Each phase lasts 12-14 months. The didactic year includes graduate coursework in the basic sciences (anatomy, pharmacology, pathophysiology, clinical medicine, research methods and statistics, epidemiology, behavioral medicine, ethics, preventive medicine and community health, social and legal issues, and clinical skills.)

The clinical/research year is a series of clinical rotations in a variety of medical settings primarily in
Kansas and directed studies in research leading to the completion of a final research project. Students are required to complete rotations in family practice, general internal medicine, pediatric, prenatal care and gynecology, general surgery, emergency medicine, psychiatry and behavioral medicine, and genetics. Students complete nine rotations of 4-8 weeks each (approximately 50 total weeks). All students are required to complete a minimum of three rotations outside the city of Wichita with at least three rotations in a rural or urban underserved community. Students are expected to pay for transportation to clinical sites and, in some situations, room and board.

Admission
Minimal Requirements for Application to the PA program:
A. A bachelor degree from a regionally accredited U.S. college or university will be required prior to matriculation with additional prerequisite coursework below if not included in the bachelor degree. Coursework more than 10 years old will be subject to departmental review and in some cases applicants may be required to repeat certain courses. Acceptance of foreign bachelor degrees will be decided on an individual basis and after evaluation by a transcript evaluation service.

1. CHEM 111Q (5 hrs.) General Chemistry
2. CHEM 112Q (5 hrs.) General & Inorganic Chemistry
3. BIOL 210 (4 hrs.) General Biology (or zoology, botany, or cellular)
4. BIOL 220 (4 hrs.) Microbiology with Lab
5. BIOL 225 (5 hrs.) Anatomy/Physiology with Lab
6. STAT 370 (3 hrs.) Elementary Statistics (or equivalent or higher-level statistics)
7. PA 390 (3 hrs.) Clinical Physiology (or upper-division pathophysiology, mammalian physiology, human physiology).

B. Preferably candidates should have a bachelor degree and all prerequisite coursework completed at the time of application. Those that do not can apply if outstanding coursework is within two semesters of completion (outstanding coursework can ONLY include FOUR prerequisite science courses). The bachelor degree and prerequisite coursework in progress must be completed before starting the program. Successful completion of degree and coursework must be verified if accepted and before acceptance is finalized.

C. GPA requirements (on a 4.0 scale) apply to both the degree and prerequisite coursework: 3.00.

D. Demonstrated commitment to diversity, leadership, and service.

E. Completion of an on-site interview with program faculty, which will include (but not be limited to) an assessment of academic potential, motivation and commitment to the PA profession, and interpersonal and communication skills. Not all applicants will be offered an interview.

F. Health care experience (direct patient care) is strongly preferred, but not required.

G. To be considered for the PA program the following 3 steps must be completed:
1. Primary CASPA (National) Application (deadline Oct. 1)
2. University Graduate School Application (deadline Oct. 1)
3. Secondary applications—if determined by the Program to meet minimal requirements after review of the CASPA and Graduate School Application (deadline 2 wks. after receipt)

Special Requirements
Students will be required to purchase uniforms and other clinical apparel, professional liability insurance, and health insurance coverage. Each year while enrolled in the program students are required to have an annual health history and physical examination (with documentation of appropriate immunizations and screening tests). Students must also be certified in cardiaucoronyary resuscitation (CPR) prior to entering the program.

Students are expected to provide their own transportation to and from the health care facilities used for clinical experiences (located throughout the states of Kansas and Oklahoma). During clinical assignments outside Wichita, students may be required to pay all living expenses.

Students are referred to the Department of Physician Assistant student handbooks for more details on special departmental policies and procedures.

Financial Assistance
Many of the MPA students seek the assistance of WSU’s Office of Financial Aid in applying for loans and grants available for graduate students. In addition, the College of Health Professions awards several fellowships each academic year, and the Department of Physician Assistant has three fellowships available to MPA students once enrolled in the program. Furthermore, there are several national scholarship programs supported by the federal government and national PA associations that are available. Information about such programs is distributed to students during interviews.

Degree Requirements/Professional Coursework
Minim requirements for completion of the Physician Assistant Program include maintaining a GPA of 3.00 as required by the Graduate School, maintaining acceptable academic performance as outlined in the PA student handbooks, passing all didactic/clinical courses/rotations with satisfactory grades, and autonomously demonstrating competence in all program and course objectives.

First/Didactic Year
Summer Semester
PA 789 Clinical Anatomy (5)
PA 725 Primary Care I (5)
PA 806 Directed Study in Research I (2)
PA 814 Advanced Clinical Management I (3)
PA 820 Advanced Clinical Management II (3)
PA 897 Clinical Preceptorship (6)
PA 733 Pathophysiological Assessment I (5)
PA 736 Applied Clinical Practice (3)
PA 715 Seminar in Physician Assistant Practice (3)
PA 700 Physician Assistant Theory I (3)
PA 725 Physician Assistant Theory II (3)
PA 720 Pathophysiological Assessment II (5)
PA 710 Applied Clinical Pharmacology (3)
Spring Semester
PA 733 Pathophysiological Assessment III (5)
PA 737 Population Pharmacokinetics (3)
PA 736 Applied Clinical Practice (3)
PA 711 Pharmacologic Management of Acute & Chronic Diseases (3)
PA 899 Directed Study in Research II (2)
Second/Clinical/Research Year
Fall Semester
PA 810 Advanced Clinical Management Rotation I (3)
PA 812 Advanced Clinical Management Rotation II (3)
PA 814 Advanced Clinical Management Rotation III (3)
PA 816 Advanced Clinical Management Rotation IV (3)
PA 898 Directed Study in Research II (2)
PA 819 Advanced Clinical Management Rotation V (3)
PA 822 Advanced Clinical Management Rotation VI (3)
PA 825 Advanced Clinical Management Rotation VII (3)
PA 826 Advanced Clinical Management Rotation Elective (3)
PA 832 Clinical Assessment Seminar (3)
PA 898 Directed Study in Research III (2)
Summer Semester
PA 899 Clinical Preceptorship (6)

Course for Graduate/Undergraduate Credit
PA 525. Special Topics I-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. Open to non-majors; requires department consent.

PA 700. Physician Assistant Theory I (3). Provides advanced theoretical knowledge and skills necessary to obtain an appropriate medical history and physical examination. Includes additional emphasis on the identification of normal and abnormal physical findings. Practice of methods and techniques learned takes place in a faculty.
Pathophysiology Assessment (5). An advanced pathophysiological and clinical assessment/management course of the cardiovascular and gastrointestinal systems that builds on prerequisite coursework. This course covers normal physiology, major disease pathophysiology, diagnosis, treatment, prognosis, and disease prevention as it relates to cardiovascular and gastrointestinal medicine. Evidence-based medicine is integrated throughout the course. Evaluation of diagnostic studies is addressed as applicable to the primary care setting. Skills emphasized include x-ray, ECG, and laboratory study interpretation, pulmonary function testing, ACLS, blood gas analysis, airway management, and performing endoscopic procedures. Prerequisite: admission to PA professional program.

PA 720. Pathophysiology Assessment (5). An advanced pathophysiological and clinical assessment/management course of the cardiovascular and gastrointestinal systems that builds on prerequisite coursework. This course covers normal physiology, major disease pathophysiology, diagnosis, treatment, prognosis, and disease prevention as it relates to cardiovascular and gastrointestinal medicine. Evidence-based medicine is integrated throughout the course. Evaluation of diagnostic studies is addressed as applicable to the primary care setting. Skills emphasized include x-ray, ECG, and laboratory study interpretation, pulmonary function testing, ACLS, blood gas analysis, airway management, and performing endoscopic procedures. Prerequisite: admission to PA professional program.

PA 723. Pathophysiology Assessment II (5). An advanced pathophysiological and clinical assessment/management course of the reproductive, gynecological, and endocrine systems that builds on prerequisite coursework. This course covers normal physiology, major disease pathophysiology, diagnosis, treatment, prognosis, and disease prevention as it relates to reproductive, gynecological, and endocrine medicine. Evidence-based medicine is integrated throughout the course. Evaluation of diagnostic studies including x-rays and laboratory studies is addressed as applicable to the primary care setting. Skills emphasized include breast, pelvic, testicular, and rectal examination and urinaiy catheterization. Prerequisite: admission to PA professional program. Corequisite: PA 720 and 723.

PA 725. Physician Assistant Theory II (3). Introduces emerging theories in the behavioral sciences, preventive medicine, public health, health promotion, and epidemiology. The goal is the development and integration of knowledge-based skills that incorporate all theories. Areas of emphasis include growth and development, patient counseling, patient education, evaluation and management of psychosocial diseases in the primary care and emergency settings, risk factors for major causes of death and disability, behavioral techniques used in making health behavior change, health-risk appraisal instruments, health screening, disease and accident prevention, and further study of the distribution and determinants of disease frequency in human populations. Prerequisite admission to PA professional program. Corequisite: PA 700.

PA 726. Physician Assistant Research Methods (3). An introductory course concerning the basic concepts of research methodology as appropriate to the physician assistant professional. Focuses on research questions, and research methods (both qualitative and quantitative), including x-ray, ECG, and laboratory study interpretation, pulmonary function testing, ACLS, blood gas analysis, airway management, and performing endoscopic procedures. Prerequisite: admission to PA professional program.

PA 729. Clinical Anatomy (5). A graduate-level comprehensive clinical anatomy course that builds on prerequisite anatomy coursework and emphasizes an advanced understanding and integration of human anatomy of the head, upper extremity, lower extremity, head, neck, thorax, and gastrointestinal and genitourinary systems. Cadaver prosection is demonstrated in a laboratory setting. Prerequisite: admission to PA professional program.

Courses for Graduate Students Only

PA 810. Advanced Clinical Management Rotation I (3). A four- to six-week advanced clinical experience that builds on pathophysiological assessment coursework in which students are supervised by physicians and expected to function as student clinicians in a variety of medical settings. Emphasis is on obtaining and documenting appropriate medical histories and physical examinations, integrating and interpreting patient data, forming medical diagnoses, developing and implementing management plans including therapeutic regimens, and performing medical and surgical procedures. Rotation assignments include one or more of the following: family medicine, general internal medicine, pediatrics, gynecology, emergency medicine, psychiatry/behavioral medicine, and geriatrics. Prerequisite: admission to PA professional program.

PA 812. Advanced Clinical Management Rotation II (3). A four- to six-week advanced clinical experience which is a continuation of PA 810. Prerequisite: admission to PA professional program.

PA 814. Advanced Clinical Management Rotation III (3). A four- to six-week advanced clinical experience which is a continuation of PA 812. Prerequisite: admission to PA professional program.

PA 815. Advanced Clinical Management Rotation IV (3). A four- to six-week advanced clinical experience which is a continuation of PA 814. Prerequisite: admission to PA professional program.

PA 819. Advanced Clinical Management Rotation V (3). A four- to six-week advanced clinical experience which is a continuation of PA 818. Prerequisite: admission to PA professional program.

PA 822. Advanced Clinical Management Rotation VI (3). A four- to six-week advanced clinical experience which is a continuation of PA 819. Prerequisite: admission to PA professional program.

PA 825. Advanced Clinical Management Rotation VII (3). A four- to six-week advanced clinical experience which is a continuation of PA 822. Prerequisite: admission to PA professional program.

PA 826. Advanced Clinical Management Elective Rotation (3). A four- to six-week advanced clinical experience which is a continuation of PA 825. Prerequisite: admission to PA professional program.

PA 832. Clinical Assessment Seminar (3). An advanced assessment seminar course geared toward the second-year physician assistant student. Primary focus is to assess cognitive and clinical skills as required by certifying body. Emphasis includes further assessment of knowledge and skills through standardization tests, discussion of professional practice and malpractice issues, and review sessions for national certification exams.

PA 896. Directed Study in Research I (2). First in a series of three courses following PA 726 in which students work with an assigned PA faculty advisor to continue their research project or paper. Emphasis is placed on developing a research question, conducting a literature review, and formulating a methodology for a research project or paper. Prerequisites: PA 726 and admission to PA professional program.
Course: PT 715, Professional Issues and Ethics

PT 715, Professional Issues and Ethics
2 hrs.

PT 715, Professional Issues and Ethics

Students are referred to the Department of Physical Therapy Student Handbook for more details on
special departmental policies and procedures.

Courses for Graduate Students Only

PT 701. Research Methods and Statistics (2). Discussion and application of scientific and statistical knowledge, and the development of a research proposal and major literature review. Prerequisite: departmental consent.

PT 705. Clinical Medicine I (2). Presents the causes, diagnoses, effects, treatment, and prognoses for general medical conditions seen by physical therapists. Coordinated by the department faculty and organized around the medical model. Prerequisite: departmental consent.

PT 707. Introduction to Patient Management Skills (2). Introduces the student to basic patient care and medical terminology. Through clinical observation sessions, students become familiar with various types of physical therapy settings. Prerequisite: departmental consent.

PT 709. Foundations of Therapeutic Exercise (3). Introduces the scientific principles of therapeutic exercise foundations and techniques for physical therapists. Follows the standards of physical therapist practice. Laboratory sessions include skill development for safe, effective use of basic therapeutic exercise equipment. Prerequisite: departmental consent.

PT 710. Foundations for Evaluation and Treatment of Musculoskeletal Conditions (3). Introduces the basic scientific foundation and clinical rationales used during evaluation and treatment of musculoskeletal conditions. Includes in-depth studies of the art of palpation and surface anatomy, performance of manual muscle testing (M1/T), and goniometric measurements. Emphasizes review of clinical and scientific literature pertaining to evaluation and treatment of musculoskeletal conditions. Prerequisite: departmental consent.

PT 711. Clinical Biomechanics (3). Presents a biomechanical foundation of all joints so students have the ability to differentiate causes of musculoskeletal problems. Prerequisite: departmental consent.

PT 715. Professional Issues and Ethics (3). Introduces the profession of physical therapy. Addresses the profession, settings for delivery of services, professional ethics, regulations of the profession, levels of personnel, and other issues directly related to the practice of the profession. Introduces specific issues and challenges the profession is addressing as the larger system for health and medical services changes. Prerequisite: departmental consent.

PT 726. Clinical Medicine II (2). Presents the causes, diagnoses, effects, treatment, and prognoses for orthopedic conditions seen by physical therapists. Coordinated by department faculty and organized around the medical model. Prerequisite: departmental consent.

PT 730. Neurological Approaches to Patient Care (2). Gives basic skills for assisting movement in patients with neurological impairments. Prerequisite: departmental consent.

PT 733. Physical Agents in Physical Therapy (4). Presents utilization of physical modalities related to sound, light, electricity, water, paraffin, traction, and massage to achieve physiological and mechanical results. Incorporates evaluation and treatment methods for the above modalities along with analysis of relevant scientific literature. Prerequisite: departmental consent.

PT 734. Clinical Medicine III (2). Presents the causes, diagnoses, effects, treatment, and prognoses for neurological, pulmonary, and cardiac conditions seen by physical therapists. Coordinated by department faculty and organized around the medical model. Prerequisite: departmental consent.

PT 747. Assessment and Intervention in Acute Conditions (4). Addresses the management of acute physical conditions, including medical knowledge intervention, lower extremity amputation management, and upper extremity orthotic devices. Also includes the management of intensive care patients in the hospital and at home. Prerequisite: departmental consent.

PT 780. Clinical Education I (6). Introduction to clinical education in varied settings requiring communication and interpersonal relations skills; application of basic physical therapy procedures; beginning professional socialization; beginning development of a generalist in physical therapy. Prerequisite: departmental consent.

PT 789. Experimental Courses (1-4). One-time course offerings. Prerequisite: departmental consent.

PT 800. Clinical Education II (6). Comprehensive clinical experience with physical therapy care in a variety of clinical settings including basic skills in physical therapy as applied to patients with specific conditions. Prerequisite: departmental consent.

PT 802. Cardiopulmonary Assessment and Intervention (2). Continuation of PT 745. Adds concepts and material to allow students to assess and treat patients with cardiopulmonary conditions. Prerequisite: departmental consent.

PT 809. Orthopedic Assessment and Intervention I (3). Introduces the basic scientific foundation and clinical rationale used during evaluation, assessment, and treatment of musculoskeletal conditions. Builds on first year PT courses. In-depth study of different injuries and lesions, specific evaluation techniques, and treatments of 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, lumbar spine, 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 information on static planning, organizational design, human resource management, fiscal considerations, and leadership and management styles. Prerequisite: departmental consent.

PT 818. Orthopedic Assessment and Intervention III (2). Studies evaluation of musculoskeletal conditions, orthopedic trauma, and management of orthopedic conditions. Includes peer review, audit, documentation, legal and ethical aspects, fiscal considerations, 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 development 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 neurological 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 I-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 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 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 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 Q2. 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 gerontology. Emphasizes prevention. Prerequisite: departmental consent.

PT 870. Clinical Education IV* (6). Continuation of PT 860. Prerequisite: program consent.

PT 890. Thesis (1-6). Repealable 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.

Public Health Sciences (PHS)

Graduate Faculty
Peter Cohen, Dean
Professors: Michael Long, Ph.D., James H. Swan, Ph.D.
Associate Professors: Mary Lescoe-Long, Ph.D.
Assiociate Professors: Stephen C. Gladhart, Ph.D., Rust B. (Toni) Pickard, Ph.D.

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)

Developing Leadership Capacity to Promote a Healthy Society

The Master of Public Health (MPH) Program prepares its graduates to undertake leadership positions across the health care system. This 39-credit-hour degree program is appropriate for individuals interested in acquiring the multi-dimensional and multi-disciplinary knowledge and skill base necessary to 1) build and strengthen the organizations and agencies that deliver health care and public health services to our nation's communities and 2) partner effectively with community residents and representatives to develop healthy communities and enhance well being at the population level.

The MPH program emphasizes six dimensions of public health leadership in its generalist curriculum: community building, system and organizational administration, essential services, assessment/policy development/assurance, political and social realities, and leadership and change agency.

The program grounds students in the five core disciplines of public health through required course work in health care policy and administration, social and behavioral concepts and theories as applied in public health, epidemiology concepts and methods, descriptive and analytic statistics and their application to health care, and environmental health and its application to protecting the health and safety of the population. These disciplines form the foundation of the Essential Services dimension.

The program also educates students in the three core functions of public health:

1) Assessment (population-based health care needs in the community and in health service organization catchment areas, social and clinical determinants of population health);
2) Policy Development (advocating for health, planning, program development and grantsmanship, priority setting, constituency building); and
3) Assurance (deploying and managing resources and programs, developing and sustaining organizational structure, evaluation, quality assurance, and health services research and community action research).

In addition, the WSU MPH offers students the opportunity to pursue a specialized area of interest in either of the two contextual dimensions of public health leadership, Systems and Organizational Administration and Community Building. Students who are keenly interested in health systems and organizational administration should choose the Health Administration emphasis. This emphasis stresses the financial, organizational, and service delivery aspects of the U.S. health care system and prepares the student to assess, evaluate, and manage the distribution of health care resources and the quality of care delivered, promote and facilitate change, and to navigate the changing health care environment.

Students whose primary interests lie in community building should choose the Community Planning and Development emphasis. This emphasis stresses an integrated cycle of community needs assessment, community asset identification, constituency building, planning and resource development, and evaluation directed toward promoting health lifestyles and developing strong communities. Students selecting this concentration learn additional skills in practicing culturally competent health care to improve interventions among minority populations, through experiential learning and field projects.

The fifth dimension of public health leadership, Political and Social Realities, is woven throughout the curriculum. These realities form the milieu in which program graduates must operate.

Leadership and Change Agency is addressed through specific courses dedicated to the study of leadership practices and successful organizational transformation, and through the integration of the student's entire course of study. This dimension is concerned with systems thinking, knowledge synthesis, knowledge integration, critical evaluation, organizational and community problem solving, values clarification, and ethical health care decision making.

This integrative experience culminates in program's practicum capstone. Faculty advisors work with students to establish plans of study in which elective course work adequately prepares the students for their capstone of choice.

Who Should Apply?
The WSU MPH is the appropriate professional enhancement program for anyone with a medical, business, or social science (sociology, psychology, anthropology, political science etc) background who is interested in extending their expertise and directing it toward a career dedicated to enhancing the health of the population through leadership and stewardship in either a health care organization or community-based setting.

Career Opportunities
There is currently a nationwide shortage of public health professionals. The MPH is the professional degree of choice for entering the field.

Admission Requirements
Admission to the MPH degree program requires that:

1) Applicant possesses a bachelor's degree (or its equivalent), and a grade point average of 3.0 (cumulative and last 60 hours) awarded by a regionally accredited institution of higher learning or a foreign university with requirements equivalent to an American four-year bachelor's degree.

2) Applicant has provided an official report of the Graduate Record Examination (GRE) or has successfully completed a post-baccalaureate degree program. Scores from other nationally recognized tests of aptitude, as approved by the Admission Committee, for post-baccalaureate study may be substituted for the GRE with prior program approval.

3) Applicant whose native language is not English must submit an official report of the Test of English as a Foreign Language (TOEFL) with a composite score of 570 or better (230 or better for the computerized TOEFL). 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, an applicant must submit the following:

1) Official transcript(s) from all institutions of
The total number of credit hours required for the certificate in public health is 15, with a cumulative grade point average of 3.0 or above and no grades below C. Students must complete the following courses:

PHS 804, Principles of Statistics in Health Sciences (3)
PHS 808, Principles of Epidemiology (3)
PHS 812, Health Care Policy and Administration (3)
PHS 814, Social & Behavioral Aspects of Pub. Health (3)
PHS 816, Environmental Health (3)

The deadline for application to the public health certificate program is June 1 for the fall semester, and November 1 for the spring semester.

Courses for Graduate/Undergraduate Credit

PHS 643 - Geographic Information Systems (3). This course provides hands-on learning of ArcView, the Geographic Information System (GIS) that uses computer mapping to identify and illustrate the presence and distribution of community assets and needs. Taught in the Computing lab in our College of Health Professions, each student is assisted in mastering this powerful analytical tool. Public health data captured in the low-income, multiethnic neighborhood of Planeview, our community learning partnership site, provide exciting real-world problems for students to explore and analyze through various mapping techniques. Students learn the utility of mapping for linking theory and research with program planning and policy development.

PHS 680, AIT Long-Term Care Practicum (3, 6 or 9). Needs for health services will increase dramatically in the future because of the rising increase in the elderly population. A broad range of services, including long-term care, is required to address the health care needs of the older population. The Administrator-in-Training (AIT) Practicum is an academic long-term care administrator-training program. The purpose of the AIT is the development of a professional competency and personal code of ethics for the field of long-term care administration. The course prepares students for the state nursing home administrator licensure examination. The 480 hour practicum is completed in a licensed long-term care facility, under the guidance of an approved preceptor. Prerequisites: Undergraduates must have senior standing. All students must have course work in gerontology/long-term care, leadership, and financing/accounting; may take one course concurrent with the AIT practicum.

PHS 683. Community Action Research (3). This course is one of a series of community epidemiology courses that focus on community assessment and development. Community action research is an applied, interdisciplinary field in which hands-on learning occurs while inviting participation of the target population. Action research has three basic components: 1) it deals with social practices (e.g., help seeking behaviors) that are potentially mutable (able to be improved); 2) it spirals through cycles of planning, acting (initiating and intervention), observing (collecting and analyzing data) and reflecting; and 3) it involves collaboration between the researchers, those who engage in the social practices of interest and those who are affected by them.
The class learns to develop case studies and collects data through face-to-face surveys of neighbors in Planeview, our community learning partnership site.

Courses for Graduate Students Only

PHS 804. Principles of Statistics in the Health Services (3) This course is intended as an introductory in statistics for graduate students in the social and health sciences with little or no background in statistics. Its purpose is to provide first year (or equivalent) MPH students with a basic understanding of certain statistical techniques, the appropriate application of these techniques, and use of the software package SPSS.

PHS 808. Principles of Epidemiology (3). An introductory graduate level course concerning epidemiological principles and how these form the scientific basis for public health.

PHS 812. Health Care Policy and Administration (3). An in-depth look at policy and management issues in the health system from a public health perspective. Topics include health policy, trends in the health care system, and administrative issues. Topics are critiqued with regard to public health goals, the interests of consumers and providers, and ethics.

PHS 814. Social and Behavioral Aspects of Public Health (3). Examines the characteristics, behaviors and beliefs 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 816. Environmental Health (3). A survey course in environmental health designed to provide an understanding of the fundamental theory and methods for the control of disease. Includes environmental law, disease systems, water supplies, plumbing, water waste treatment, food sanitation, vector control, recreation sanitation, solid waste disposal, housing sanitation, and air pollution.

PHS 818. Fundamental Research Methods in Public Health (3). Stresses mastery of basic concepts and techniques of research methodology used in the health professions. Focuses on acquisition of the generic tools of research design and their application to the real-world problems confronting those who deliver health care, those who facilitate and/or manage the delivery of care, those who conduct clinical and health services studies, and those who make policy affecting the delivery arrangements. Prerequisites: PHS 804 and 808.

PHS 821. Community Assessment & Development (3) This community epidemiology course introduces public health theories and methods used to conduct community assessments and to apply the results to positive social change. We first examine the meaning of the key terms "community", "community-building" and "community development" within historical and contemporary perspectives. We learn the importance of starting with such questions as " whose community?", " whose health?", " whose assessment?" and " for whose benefit?" We review strategies for community mapping, issue selection, community organizing, and coalition building. We then study several approaches for identifying community needs including the organizing, and coalition building. We then study several approaches for identifying community needs, including the use of secondary data sources, interview methods, focus groups and surveys. Finally, we apply our work to the design (or revision) of a study of the assets and needs of a local target community in regard to a health-related issue.

PHS 824. Cultural Competency In Health Care (3). This course uses a community epidemiology approach to examine the changing demographics in 21st century United States, and to analyze the effects of those changes on our health care system. We explore differences in the distribution of disease among various cultural groups, taking into account the social, biological and political causes behind those differences. We look at gaps between ethnic groups in service availability and access, in therapy options, and in treatment outcomes. Then, we show how culture affects lifestyle choices, attitudes toward health and illness, help-seeking behaviors, and service utilization.

PHS 826. Politics of Health Policy Making (3). This course covers the basic principles of public policy making in health care and public health. It then offers the opportunity to students to apply that knowledge in a community-based attempt to impact a positive public health policy development. It is a skills-based course that demonstrates why things happen as they do in policy-making arenas and what can be done to ensure desired policy outcomes.

PHS 831. Essentials of Health Insurance and Managed Care (3). Health insurance is one of the most powerful ingredients in the U.S. health care system and yet the majority of the general public misunderstands it. It is important for those that currently work, and those who are planning to work, in the health care field to understand the underlying dynamics of the insurance process. In this course the student is introduced to the concept of risk and the role of insurance in handling risk. It also examines health care expenditures as an insurable event; health insurance and managed care as a form of risk handling.

PHS 833. Health Economics (3). An application of classical economic theories, principles and concepts to the traditional U.S. medical care. Both the traditional and unique determinants of demand and supply are considered with emphasis on the role of need for care, provider-induced demand, and health insurance. The legitimate role of government in health care is also considered.

PHS 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. It emphasizes understanding and application of general financial concepts to health setting and includes consideration of financial organization, sources of operating revenues, budgeting and cost allocation.

PHS 835. Organization, Financing and Delivery of Health Care (3). Students are introduced to the organization, financing and delivery modalities of the U.S. Medical Care System. The development and application of hospital reimbursement methodology (DRG-Based PPS) and physician reimbursement methodology (RBRVS) are examined. The principles of health insurance are introduced and the role of private and public (Medicare/Medicaid) health insurance in health care utilization are examined. Health status outcomes and quality of life measures are also explored.

PHS 838. Applied Data Analysis (3). This course will teach: 1) the practical skills necessary to analyze and manage data using the SPSS software; 2) the application of statistical tools introduced in the MPH Program's introductory courses in biostatistics; and 3) an introduction to regression analysis.

PHS 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. Prerequisites: students must meet with their faculty advisor at least one semester prior to seeking to enroll in the practicum with faculty advisor's consent.

PHS 841. Leadership and Change Agency in Public Health (3). Explores the essential leadership competencies and characteristics necessary to effectively promote innovation and facilitate adaptation in today's complex and rapidly evolving health care system. Combines classic theory and cutting edge concepts to ground students in the principles which underpin the current emphasis on leaders as change agents. Explores and applies strategies for effective change in the thinking and behavior of people, the design and vision of organization, and the health and well being of communities. Emphasizes the generalizability of leadership principles across the various sectors of public health.

PHS 842. Public Health Applications to the World Wide Web (2). This course documents the creation and evolution of the Internet and World Wide Web and applications that allow these tools to be of relevance to public health and preventive medicine in the community setting. There are no official prerequisites other than an understanding of basic statistics and familiarity with computer systems.

PHS 843. Health Program Planning (3). Development and practice of planning and evaluation skills through the development of a health program in a community of interest.

PHS 845. Coalitions in Health Care (3). This course is designed to familiarize students with the factors influencing successful collaboration in public health. The course
emphasizes the application of this material to the development of community-based coalitions/alliances/committees/partnerships. Course format will include lecture, group and individual examination of the literature, analysis of case studies, and fieldwork.

PHS 848. Concepts of Quality (3). Quality of health care is a much discussed concept that is currently receiving a great deal of attention. Unfortunately, with all of the attention from a variety of providers, third-party payers, employers and other client organizations, considerable confusion regarding the definition and measurement of quality has arisen. Not only is there a tendency to use the word 'quality' as an adjective rather than a noun, each of the constituent players adopt their own definition for their own purpose. This course is designed to provide the student with the conceptual underpinnings provided by the scholarly approach to the definition and assessment of quality of health care, which will permit the various quality assessment and improvement methodologies to be placed in context.

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. Directed Study (1-3). Individual study of the various aspects and problems within public health. Repeatable for credit with departmental consent. Prerequisites: faculty advisor and instructor consent.

PHS 885. Thesis (1-3). Repeatable to a maximum of six hours. Prerequisite: Consent of thesis advisor.

School of Nursing (NURS)
Graduate Faculty
Professor: Donna Hawley (Director of Institutional Research), Alicia Huckstadt (Director of Graduate Program), Janice Riordan, Elaine Steinke, Juanita Tate (CHP Associate Dean and Chair)
Assistant Professor: Betty Elder, Loretta Forlaw, Carol Hammon-Paulsen, Karen Hayes, Martha Shawver (Associate Vice President of Academic Affairs), 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 (8 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 (see the Graduate Catalog for full details), the School of Nursing requires:
1. A bachelor's degree with a major in nursing from a nationally accredited (NLN or CCNE) school. 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. A cumulative grade point average of 3.00 or higher 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 highly 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.

Prerequisites: A course in statistics accepted by the School of Nursing and an undergraduate nursing research course are required. Prerequisite courses are not credited to the degree. Students who have not completed a prerequisite may be admitted conditionally and are allowed one year to complete it. Some graduate courses may not be available to students while completing the prerequisites.

Comprehensive Examination
A comprehensive written examination, thesis or research project is required of all graduate nursing students. The exam is completed within the student's last two semesters.

Options Available
Clinical Nurse Specialist (39-42 hrs)
Adult Health and Illness
Pediatrics
Nurse Practitioner (45-46 hrs)
Acute Care
Family
Pediatrics
Psychiatric/Mental Health
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

CLINICAL NURSE SPECIALIST
Adult Health and Illness (39-42 hrs)
NURS 701/702 Advanced Health Assessment / Lab .... 2/1
NURS 703 Scientific Inquiry I .......................... 3
NURS 705 Scientific Inquiry II .......................... 3
NURS 715 Advanced Nursing Practice: Roles and Issues 3
HS 711 Pharmacological Management of Acute and Chronic Diseases 3
NURS 781 Pathophysiology for Acute and Critical Care 3
NURS 805 Health Promotion through the Life Span 3
NURS 806 Advanced Role Practicum .......................... 3
NURS 834 Adult Nursing Practicum .......................... 3
NURS 839 Management of Acute and Chronic Health Problems of the Adult 3
NURS 851 Clinical Management .......................... 3
NURS 852 Adult Case Management Practicum .......................... 3
Elective courses, Thesis or Project .......................... 3-6

Pediatrics (39-42 hours)
NURS 701/702 Advanced Health Assessment / Lab .... 2/1
NURS 703 Scientific Inquiry I .......................... 3
NURS 705 Scientific Inquiry II .......................... 3
NURS 715 Advanced Nursing Practice: Roles & Issues 3
NURS 793 Advanced Pathophysiology .......................... 3
NURS 795 Applied Drug Therapy .......................... 3
NURS 805 Health Promotion .......................... 3
NURS 806 Advanced Role Practicum .......................... 3
NURS 829 Health Care During Growth and Development of Children and Families 3
NURS 832 Pediatric and/or Women's Health Nursing: Practicum 1 .......................... 3
NURS 836 Pediatric and/or Women's Health Nursing: Practicum II .......................... 3
NURS 851 Clinical Management .......................... 3
Elective courses, Thesis or Project .......................... 3-6
*NURS 851 is not required if those completing the thesis option

NURSE PRACTITIONER
Acute Care (46 hours)
NURS 701/702 Advanced Health Assessment / Lab .... 2/1
NURS 703 Scientific Inquiry I .......................... 3
NURS 705 Scientific Inquiry II .......................... 3
NURS 715 Advanced Nursing Practice: Roles and Issues 3
NURS 718 Advanced Technologies .......................... 2
NURS 786 Advanced Health Assessment Practicum 2
NURS 781 Pathophysiology for Acute and Critical Care 3
HS 711 Pharmacological Management of Acute and Chronic Diseases 3
NURS 805 Health Promotion throughout the Life Span 3
NURS 834 Adult Nursing Practicum .......................... 3
NURS 839 Management of Acute and Chronic Health Problems of the Adult 3
NURS 851 Clinical Management .......................... 3
NURS 852 Adult Case Management Practicum .......................... 3
NURSE MIDWIFERY

This option is offered in collaboration with the University of Kansas School of Nursing. Students will apply to both WSU and KU. Please contact the WSU School of Nursing for details. Graduates will receive the MSN degree from WSU and a Certificate of Nurse Midwifery from KU.

CURRICULUM (51 credit hours)

Core and Advanced Practice Courses (WSU School of Nursing) ........................................... Total 24
NURS801/802 Advanced Health Assessment /Lab .......................................................... 2/1
NURS803 Scientific Inquiry I ......................................................... 3
NURS805 Scientific Inquiry II ........................................................ 3
NURS715 Advanced Nursing Practice: Roles & Issues ......................................................... 3
NURS718 Advanced Technologies .................................................................................... 2
NURS796 Advanced Health Assessment Practicum ......................................................... 2
NURS793 Advanced Pathophysiology .............................................................................. 3
NURS795 Applied Drug Therapy ....................................................................................... 3
NURS803/804 Primary Care I: Management of Complex Health Problems ................. 4
NURS810 Primary Care II: Practicum ................................................................................. 4
NURS849 Nurse Practitioner Preceptorship ..................................................................... 3
NURS851 Clinical Management ......................................................................................... 3

Nurse Midwifery Specialty Courses (KU School of Nursing) ........................................... Total 22
NURS851 Nurse Midwifery in the Antepartal Period/Practicum ........................................ 3/2
NURS883 Nurse Midwifery in the Neonatal Period/Practicum ......................................... 1/1
NURS839 Nurse Midwifery in the Intrapartal Period/Practicum ........................................ 3/2
NURS839 Nurse Midwifery in the Postpartal Period/Practicum ......................................... 2/1
NURS840 Nurse Midwifery in the Integration Period Practicum .......................................... 3
NURS841 Nurse Midwifery Professional Seminar ................................................................ 1

NURSING and HEALTH CARE SYSTEMS ADMINISTRATION (42 hours)
NURS803 Scientific Inquiry I ................................................................................................. 3
NURS805 Scientific Inquiry II ................................................................................................. 3
NURS715 Advanced Nursing Practice: Roles & Issues ......................................................... 3
NURS775 Health Care Information Systems .......................................................................... 3
NURS811 Foundations of Nursing & Health Care System Administration ......................... 3
NURS812 Nursing & Health Care System Administration Practicum ................................... 6
NURS827 Resource Management in Nursing ....................................................................... 3
NURS851 Clinical Management ............................................................................................ 3
NURS863/865 Capstone Seminar ......................................................................................... 3
NURS863 Practicum (choose one): NURS812 (Administration), NURS814 (Education) or NURS776 (Informatics) .......................................................... 3
PHS834 Financing Health Care Services ............................................................................... 3
PHS848 Concepts of Quality ................................................................................................. 3
Elective courses, Thesis or Project ....................................................................................... 3

* NURS851 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 63-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 87-93 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
NURS831, Nursing and Computer Technology ............................................. 3
NURS703, Scientific Inquiry I ................................................................................. 3
NURS705, Scientific Inquiry II .................................................................................... 3
NURS713, Advanced Nursing Practice: Roles & Issues .................................................. 3

Clinical Concentration
NURS775, Health Care Information Systems ......................................................... 3
NURS811, Foundations of Nursing & Health Care System Administration ................. 3
NURS812, Nursing & Health Care System Administration Practicum ......................... 6
NURS827, Resource Management in Nursing .............................................................. 3
PHS834, Financing Health Care Services .......................................................................... 3

Master of Business Administration portion .................................. 33 hours
Prerequisites (not included in degree hours)
MATH111, College Algebra ......................................................................................... (3)
MATH144, Business Calculus ....................................................................................... (3)
CSEP704, Introduction to Educational Statistics (or equiv) ............................................ (3)

Background Fundamentals
 GRADE CERTIFICATES (POST MASTER'S)

Registered Nurses with master's degrees (MN or MSN) from a nationally accredited (CCNE or NLN) master's program may be admitted to a certificate 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.

### Core Courses

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>NURS 803 PC I</td>
<td>Management of Common Health Problems</td>
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<tr>
<td>NURS 804 Primary Care I Practicum</td>
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<tr>
<td>NURS 809 PC II</td>
<td>Management of Complex Health Problems</td>
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<tr>
<td>NURS 816 Primary Care II Practicum</td>
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<tr>
<td>NURS 846 Nurse Practitioner Preceptorship</td>
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**Pediatric Clinical Nurse Specialist Graduate Certificate** 12 hours

Course and experience prerequisites may be required. Please contact department for prerequisites.

- NURS 808 Advanced Role Practicum
- NURS 829 Health Care During Growth and Development of Children and Families
- NURS 832 Pediatric and/or Women's Health Nursing: Practicum I
- NURS 836 Pediatric and/or Women's Health Nursing: Practicum II

**Psychiatric-Mental Health Nurse Practitioner Graduate Certificate** 18 hours

Course and experience prerequisites may be required. Please contact department for prerequisites.

- NURS 847 Pediatric Primary Care I: Common Problems
- NURS 848 Pediatric Primary Care I: Practicum
- NURS 857 Pediatric Primary Care II: Complex Issues
- NURS 858 Pediatric Primary Care II: Practicum
- NURS 849 Nurse Practitioner Preceptorship

**Graduate Certificates (Post Master's)**

**Acute Care Nurse Practitioner Graduate Certificate** 15 hours

Course and experience prerequisites may be required. Please contact department for prerequisites.

- NURS 839 Management of Acute and Chronic Health Problems of the Adult
- NURS 852 Adult Case Management Practicum
- NURS 853 Management of the Acute and Critically Ill Adult
- NURS 849 Nurse Practitioner Preceptorship

**Nursing and Health Care Systems Administration Graduate Certificate** 18 hours

Course and experience prerequisites may be required. Please contact department for prerequisites.

- NURS 812 Nursing Administration Practicum
- NURS 827 Resource Management in Nursing Practicum  
  - NURS 776 Health Care Information Systems Practicum
  - NURS 812 Nursing and Health Care Systems Administration Practicum, or NURS 814 Nursing Education Practicum
- NURS 863 Capstone Seminar

**Adult Health and Illness Clinical Nurse Specialist Graduate Certificate** 12 hours

Course and experience prerequisites may be required. Please contact department for prerequisites.

- NURS 805 Advanced Role Practicum
- NURS 831 Adult Nursing Practicum
- NURS 839 Management of Acute and Chronic Health Problems of the Adult
- NURS 852 Adult Case Management Practicum

**Family Nurse Practitioner Graduate Certificate** 17 hours

Course and experience prerequisites may be required. Please contact department for prerequisites.

- NURS 803 PC I: Management of Common Health Problems
- NURS 804 Primary Care I: Practicum
- NURS 809 PC II: Management of Complex Health Problems
- NURS 816 Primary Care II: Practicum
- NURS 846 Nurse Practitioner Preceptorship

**Pediatric Clinical Nurse Specialist Graduate Certificate** 12 hours

Course and experience prerequisites may be required. Please contact department for prerequisites.

- NURS 808 Advanced Role Practicum
- NURS 829 Health Care During Growth and Development of Children and Families
- NURS 832 Pediatric and/or Women's Health Nursing: Practicum I
- NURS 836 Pediatric and/or Women's Health Nursing: Practicum II

**Psychiatric-Mental Health Nurse Practitioner Graduate Certificate** 18 hours

Course and experience prerequisites may be required. Please contact department for prerequisites.

- NURS 783 Assessment in Psychiatric-MH Nursing
- NURS 819 Foundation of Psychiatric-MH Nursing
- NURS 822 Psychiatric-MH Nursing: Practicum I
- NURS 843 Perspectives in Psychiatric-MH Nursing
- NURS 844 Psychiatric-MH Nursing: Practicum II
- NURS 849 Nurse Practitioner Preceptorship

**MASTER OF SCIENCE IN NURSING DEGREE FOR ARNPs**

An MSN degree in two Nurse Practitioner (NP) options is offered for those who hold current ARNP certification in the appropriate option.

The degree for ARNPs is offered in the following options: Family Nurse Practitioner or Pediatric Nurse Practitioner.

Admission requirements for entrance include the same requirements as the MSN program for those without ARNP certification as well as the following:

* BSN-prepared RN with ARNP certification in the option in which the degree is being sought.
* Minimum GPA of 3.0 in undergraduate work.
* A college level health assessment course is a prerequisite.
* An approved statistics course as a pre or corequisite.
* Transcript or certification of completion of NP training.
* Current ARNP certification in state of residence.

**Scholarship requirement (Choose one)**

1. NURS 821 Thesis  
2. NURS 823 Scholarly Project
3. Comprehensive Exam

**Pediatric Nurse Practitioner for ARNPs**

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<th>Course Code</th>
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<tr>
<td>NURS 793 Advanced Pathophysiology</td>
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<tr>
<td>NURS 795 Applied Drug Therapy</td>
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**Psychiatric Mental Health Nurse Practitioner Graduate Certificate**

(for the student entering with an MSN or MN in Psychiatric Mental Health Nurse Practitioner)

Scholarship requirement (Choose one):

1. NURS 793 Advanced Pathophysiology
2. NURS 795 Applied Drug Therapy
3. Comprehensive Exam

* Suggested electives are listed at the end of this section.
Nursing

Additional Admission Requirements:

For students whose MSN or MN degree was
recently completed, they must submit a letter from an employer or supervisor indicating that they have been employed as an advanced practice psychiatric mental health nurse for a minimum of 5 years prior to application. The student will also be required to submit a list of continuing education credits earned in relevant to psychiatric nursing for the previous 5 years to document proficiency.

NURS 701 and 702 Advanced Health Assessment and Lab (3)
NURS 731 Psychopharmacology (3) (formerly 791 D, may be taken for 2 or 3 hours credit)
NURS 793 Advanced Psychophysiology (3)
NURS 795 Applied Drug Therapy (3)
NURS 805 Health Promotion through the Life Span (3)
NURS 849 Nurse Practitioner Preceptorship (3)

Additional Admission Requirements:

For Students whose MSN or MN degree was recently completed, they must submit a letter from an employer or supervisor indicating that they have been employed as an advanced practice psychiatric mental health nurse for a minimum of 5 years prior to application. The student will also be required to submit a list of continuing education credits earned in relevant to psychiatric nursing for the previous 5 years to document proficiency.

Two (2) letters of recommendation from a mental health professional familiar with the nurse’s work experience are required. The student must meet all other requirements for admission to a Nurse Practitioner option.

Nursing for Graduate/Undergraduate Credit

NURS 505. Directed Study in Nursing (1-4). Elective. Individually supervised study of 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 style, health beliefs and health practices will enhance cross-cultural assessment and care. This course will examine the cultural influences on health and illness in a variety of cultures, with an emphasis on developing more sensitive and effective nursing care. Prerequisite: Enrollment in nursing program or consent of the instructor.

NURS 530. Concepts of Loss (3). Elective. Strategies for helping clients and families cope with wide range of loss, including physical and emotional, with an emphasis on family strengths and competencies. Prerequisite: permission of instructor.

NURS 701. Advanced Health Assessment (3). Designed to assist students to refine history taking, psychosocial assessment and physical assessment skills. Focuses on assessment of individuals throughout the life span. Emphasis on 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. May be taken concurrently with or prior to NURS 702.

NURS 702. Advanced Health Assessment Laboratory (1). Companion course for NURS 701. Apply history taking and assessment skills within a laboratory setting. Emphasizes differentiation, interpretation and documentation of normal and abnormal findings. Requires a complete history and physical examination of a client. Prerequisite: admission to graduate nursing program. May be taken concurrently with, or within one year of completion of, NURS 701.

NURS 703. Scientific Inquiry I (3). Emphasizes the role of theory in scientific inquiry in nursing. The evolution of nursing theory is traced and projections for the future are explored. Relationships among theory, research and practice are addressed. Selected models/frameworks relevant for nursing are analyzed. Prerequisite: admission to graduate nursing program.

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 Scientific Inquiry I. Discusses the research process in relationship to concepts, frameworks/theories. Various methodological approaches to research are explored. Consideration is given to current issues in nursing research. The research process is demonstrated 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, genet-
(3). Designed for student preparing for advanced practice. Historical development of advanced practice role, the ethical, legal, political, and economic issues of such a role and current trends and future directions are discussed. 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 or 3). This course is designed 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. Factors that impact maintenance of health during lactation and clinical decisions for disease prevention are explored. Course addresses preparation for lactation consultant certification. Students work on case studies, develop a paper for publication and take a final examination via the Internet. Prerequisite: Admission to graduate program. Open to non-nursing students.

NURS 731. Psychopharmacology (3). Basic brain biology, brain disorders and pharmacology are reviewed as a basis for assessment and administration of psychopharmacologic medications and education of clients. Prerequisite: Admission to graduate program.

NURS 733. Diabetes Mellitus Nursing (3). Exploration of clinical theories, identifies and studies appropriate nursing systems for clients with diabetes mellitus. Emphasizes attaining and maintaining optimal levels of functioning and the psychological adjustment of the client and family to a potentially devastating disease. Open to non-nursing 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 non-nursing majors.

NURS 757. Clinical Teaching Strategies (3). An exploration of 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 tools is constructed after the student, subject and setting are delineated. Investigates roles of the educator in teaching clinically.

NURS 775. Health Care Information Systems (3). Examines information systems as they relate to health care. Analyzes information systems in clinical management, administration, education and research. Emphasizes issues surrounding information systems and hands-on experience with selected health care information management exercises.

NURS 776. Health Care Information Systems Practicum (3). Provides an individualized opportunity to apply the concepts/theories of information systems to a health care setting. Projects include analyzing existing information programs, identifying applications for automation and undertaking small-scale development efforts. Pre or corequisite: NURS 775.

NURS 777. Physiology/Pathophysiology of the Neonate (3). Concepts of embryology, neonatal physiology and pathophysiology are used 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 pathophysiologic 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. Not currently being offered.

NURS 781. Pathophysiology for Acute and Critical Care (3). Examines pathophysiologic concepts relevant to acute and critical care nursing practice. Explores the scientific knowledge base for selected clinical problems in acute care. Emphasizes pathophysiologic mechanisms of disease and the relevance to the clinical decision making. Prerequisite: admission to graduate program.

NURS 783. Assessment in Psychiatric Mental Health Nursing (3). For the student preparing for advanced practice in psychiatric mental health nursing, Explores current diagnostic issues in psychiatric nursing practice. Emphasizes application of current biological, psychological, social, and other relevant theories and knowledge within the nursing and related fields to the assessment and planning of interventions for psychiatric clients. Prerequisite: admission to graduate program.

NURS 786. Advanced Health Assessment Practicum (2). A concentrated assessment practicum focusing on application of knowledge from advanced health assessment courses. Students apply history taking and assessment skills in a specified setting. Emphasizes differentiation, interpretation, and documentation of normal and abnormal findings. Graded S/U. Prerequisites: NURS 701, 702 and departmental consent and admission to one of the NP options.

NURS 789. Pharmacology for the Neonate (3). Pharmacological agents used in the management of neonates are discussed. Pharmacological principles are reviewed and applied to the use of drugs in the level II or III NICU. The clinical use of drugs in the management of specific illnesses of the neonate are explored. Legal considerations for the Advanced Practice Nurse are stressed. Prerequisites: admission to NNP option or departmental consent. Not currently being offered.

NURS 791. Special Studies in Nursing (1-4). Students engage in extensive study of particular content and skills directly or indirectly related to nursing practice. Repeatable. Open to graduate or undergraduate students. Prerequisites: departmental consent.

NURS 793. Advanced Pathophysiology (3). Explores in-depth scientific knowledge base relevant to selected pathophysiologic states confronted in primary care. This provides the basis for the foundation of clinical decisions related to diagnostic tests and the initiation of therapeutic regimens. Age specific and developmental alterations are correlated with clinical diagnosis and management. Application is made through age appropriate examples. Prerequisite: 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 nurses' 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. Address first line versus second line drugs, alternate drugs, drug interactions, adjusting drug dosages, patient education and compliance issues related to drug therapy. Explore 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. Prerequisite: admission to graduate nursing program and departmental consent.

NURS 796. Nursing Practicum in Special Setting (1-4). 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 areas related to the profession and practice of nursing. Prerequisites: departmental consent.

Courses for Graduate Students Only

NURS 803. Primary Care In 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 resist individual and family levels of pre-illness health, and positive behaviors. Prerequisites: all core courses, NURS 718, 786 and admission to the FNP option. Pre or corequisites: NURS 715, 793 and 795. Corequisites: NURS 804.

NURS 804. Primary Care I: 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. Health promotion, maintenance, and prevention interventions emphasized. Prerequisites: admission to...
The FNP option. Corequisite: NURS 803.

NURS 808. Advanced Role Practicum (3-6). Prepares the student for advanced nursing practice. An intensive practicum experience; the student works with an advanced practice nurse 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 HS 711, pathophysiology (NURS 781, 803 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 guidelines 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 on 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). The course assists the student in questioning theoretical knowledge of organizations. Considers current issues and research in nursing and health care systems and its impact on nursing practice. Prerequisites: NURS 811 and 705. Pre or corequisite: NURS 715.

NURS 812. Nursing and Health Care Systems Administration Practicum (1-6). This is a practicum in a health care setting; student, under professional guidance, becomes freely involved in existing leadership, administrative and management systems. A seminar (recitation) accompanies the field experience. Types of experience may include roles of nursing education or service, mid-level nursing administration, staff development, community health or other related area as arranged. Repeatable for credit with instructor consent up to a maximum of 6 hours. Pre or corequisite: NURS 811 or 827.

NURS 813. Foundations of Nursing Education (3). Assists the student explore theoretical and practical aspects to curricular development and teaching of nursing in higher education and continuing education. Prerequisite: NURS 703 and 705. Pre or corequisite: NURS 7515.

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. Current research and evidenced-based practices are used as the course framework. 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 are emphasized. Disorders of the central nervous, pulmonary, and cardiovascular systems will be discussed. The use of specific interventions and diagnostic procedures are demonstrated and applied in laboratory/clinical settings during forty hours of required clinical activities. Prerequisites: Core courses, NURS 713, 7577 and NURS 798. Not currently being offered.

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. Pre or corequisite: NURS 713.

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 822. Psychiatric/Mental Health Practicum I (3). Intensive clinical experience; student plans, implements and evaluates nurse-therapist strategies with individual clients/patients. A seminar accompanies the practicum. Prerequisite or corequisite: NURS 819.

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 NURS 705. Repeatable up to six credit hours.

NURS 825. Independent Study (1-6). Provides opportunity for the student to develop, in collaboration with a school 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 resources necessary to operate nursing and health care systems including: information systems needed to manage resources; budget process management; personal 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. Pre 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. Pediatrict and/or Women's Health Nursing Practicum I (3). 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. Pre or corequisite: NURS 829.

NURS 834. Adult Nursing Practicum I (3). An intensive clinical experience in which the student is expected to design, implement and evaluate nursing care for adults. Specialized areas of study are selected and may include health maintenance or illness care of acutely or chronically ill adults. Prerequisites: all core courses, NURS 781, NURS 805 and HS 711. Pre or corequisite: NURS 833.

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. Prerequisites: all core courses and NURS 805. Pre or corequisite: NURS 833.

NURS 839. Management of Acute and Chronic Health Problems of the Adult (3). This course examines clinical concepts and issues related to major disruptions in the health status of adults. Emphasis is placed on assessment, measurement and interventions related to acute and chronic health problems. Prerequisites: all core courses, NURS 781, NURS 805 and HS 711.

NURS 843. Perspectives in Psychiatric/Mental Health Nursing (3). A critical examination of the delivery of mental health nursing. Emphasizes practitioners roles and therapeutically...

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 701, 702, 703, 715, 718, 829 and admission to the PNP option. Pre or corequisite: NURS 847.

NURS 848. Pediatric Primary Care I 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. Pre 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 Management (3). Management of clinical data and analysis of professional issues including business skills necessary for advanced nursing practice. Students use existing data to determine health care outcomes and to evaluate delivery of care. Extensive computer use in laboratory setting with technical support. Prerequisites: all core courses. Prerequisite or corequisite: enrollment in a course within the student's clinical or administration option. Computer literacy is expected.

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 HS 711. Pre or corequisite: NURS 805 or 859.

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 II: 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 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. Current research and evidenced-based practices are used as the course framework. 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, family are emphasized. Disorders of the gastrointestinal, renal, endocrine, hematologic, musculoskeletal, orthopedic, dermatologic and immune systems will be discussed, the use of specific interventions and diagnostic procedures are demonstrated and applied in laboratory/clinical settings during forty hours of required clinical activities. Prerequisites: Core courses, NURS 713, NURS 777 and NURS 789. Not currently being offered.
Fairmount College of Liberal Arts and Sciences

Offices: 200 LAS
William Bischoff, dean
Sharon Lorio, associate dean
Keith Pickus, associate dean
Gerald Lichti, assistant dean

Department and Program Contacts

Anthropology, (316) 978-3195—Peer Moore-Jansen, chairperson; Clay A. Robarchek, graduate coordinator

Biological Sciences, (316) 978-3111—David McDonald, chairperson; William Hendry III, graduate coordinator

Chemistry, (316) 978-3120—Dennis Burns, chairperson; David Eichborn, graduate coordinator

Communication, Elliott School of, (316) 978-3185—Susan S. Huxman, interim director; Patricia Dooley, graduate coordinator

Community Affairs, School of, (316) 978-7200—Paul Cromwell, director

Criminal Justice, (316) 978-5859—Andra Bannister, graduate coordinator

Ethnic Studies, (316) 978-6546—Anna Chandler, program director

Gerontology, (316) 978-6684—William Hays, graduate coordinator

Human Sciences, (316) 978-3156—Prakash Ramanan, chairperson; Rodney Bates, graduate coordinator

Mathematics, (316) 978-3110—Margaret Dave Baughman, chairperson; Diane Quaint, graduate coordinator

Oriental Studies, (316) 978-3140—Collette Burke, chairperson; Wan Yang, graduate coordinator

History, (316) 978-3150—Craig Miner, chairperson; John Dreftil, graduate coordinator

Religious Studies, (316) 978-3358—David Soles, graduate coordinator

Psychology, (316) 978-3170—Charles Burdisal, chairperson; Robert Zettle, graduate coordinator

Sociology, (316) 978-3160—Elizabeth Behman, chairperson; Hussein Hemeh, graduate coordinator

Social Science, School of, (316) 978-3165—James Sheffield, chairperson

Sociology, (316) 978-3170—Charles Burdisal, chairperson; Robert Zettle, graduate coordinator

Religion, (316) 978-3140—Stuart Lasine, director

Social Work, School of, (316) 978-7320—Cathleen Lewandowski, director; Brian Bolin, graduate coordinator

Sociology, (316) 978-3280—Ron Matson, chairperson; David Wright, graduate coordinator

Urban and Public Affairs, Hugo Wall School of, (316) 978-7240—Ed Flenite, director

Public Administration, (316) 978-6693—Samuel Yeager, graduate coordinator

Urban Studies, Center for, (316) 978-7240—Ed Flenite, director

Women's Studies, (316) 978-3358—Ramona Liera-Schwichtenberg, chairperson

Graduate Certificate Contacts

Applied Communication, (316) 978-6059—Patricia Dooley, graduate coordinator

Economic Development, (316) 978-6693—Sam Yeager, graduate coordinator

Great Plains Studies, (316) 978-6764—Diane Quaint, program coordinator

Public Finance, (316) 978-6332—Sam Yeager, graduate coordinator

Anthropology (ANTHR)

Graduate Faculty

Professors: Donald Blakeslee, Robert Lawless, Clayton A. Robarchek (graduate coordinator)

Associate Professors: Dorothy Billings, David Hughes, Peer Moore-Jansen (chairperson), Jacqueline Snyder

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

Admission Requirements

Admission to the MA program in anthropology requires the completion of a minimum of 15 semester hours in anthropology to include courses in history and theory of anthropology and in the main subdivisions of the discipline, and a grade point average in the last 60 hours of credit of 3.25 (on a 4.000 scale).

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

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

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 (ANTHR 736), cultural anthropology (ANTHR 746), biological anthropology (ANTHR 756), and two seminars.

Track 2 requires the completion of 33 semester hours, including the three core courses (ANTHR 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 ANTHR 736, 746, and 756, and two seminars. At least 12 from/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 ANTHR 871 and 872 (Internship), ANTHR 873 and 874 (project), or ANTHR 875 and 876 (thesis). Students in all tracks are required to form a thesis/project/internship committee of at least two full-time graduate teaching faculty from within the anthropology department and at least one graduate faculty from another department. The committee approves proposals for and evaluates the defense of all theses, projects, and internships. Comprehensive exams are graded by all full-time teaching faculty in the department.

Examinations

All students in Track 1 and those students in Track 3 who so elect must pass a written comprehensive 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

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

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

ANTHR 508. Ancient Civilizations of the Americas (3). General education further study course. A cultural survey of the Aztec, Maya, and Incas. Prerequisite: instructor’s consent.
ANTHR 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 102.

ANTHR 514. Anthropology of Aging (3). General education further study course. Cross-listed as GERON 514. An anthropological analysis of the latter stages of the life cycle with historical and cross-cultural perspectives.

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


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 530. 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 305.

ANTHR 540. The Indians of the United States: Conquest and Survival (3). An anthropological inquiry into four centuries of cultural contact, conflict, resistance, and accommodation. Prerequisite: ANTHR 102 or instructor's consent.

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

ANTHR 555. Paleoenthropology 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 101 or BIOL 205 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, measurement and analysis, and skeletal preservation and reconstruction. Individual projects are undertaken. Prerequisite: ANTHR 101 or equivalent.

ANTHR 597. Topics in Anthropology (3). Detailed study of topics in anthropology. Content varies with interest of instructors. 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 101 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). Analyzes biological anthropology materials including human and non-human skeletal material of both forensic contemporary or prehistoric origin according to standardized methods for recording and collecting data in biological anthropology. Learn methods of identification, analysis, and interpretation and prepare a standard technical report. Prerequisites: Anthropology 101, 106, 356, or 577.

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

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

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

ANTHR 667. English Syntax (3). Cross-listed as ENGL 667 and LING 667. Examination of the structure of English and their relation to linguistic theory. Prerequisites: ENGL 315 or LING 577 or ANTHR 577 or instructor's consent.

ANTHR 690. Field Methods in Anthropology (3-4). A minimum 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 areas 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). Explores in depth coverage of selected topics in cultural anthropology, including social structure, economic and political organization, religion, personality, arts and knowledge systems, and current research methods. Prerequisites: graduate standing and 6 hours of anthropology.
ANTHR 750. Workshop (1-4). Short-term courses focusing on anthropological problems. Prerequisite: instructor's consent.

ANTHR 756. Advanced Studies in Biological Anthropology (1-3). In-depth coverage of selected topics in biological anthropology, including the history of evolutionary thought, human variation, growth and development, population dynamics, paleoanthropology, and primatology. Focuses on current issues, methods, and theories in biological anthropology. Prerequisites: graduate standing and 6 hours of anthropology (must include ANTHR 101 or instructor's consent).

ANTHR 779. Advanced Readings (2-3). Provides opportunities for additional student research and reading on concepts and topics covered in the core graduate courses, Anthr. 736 Advanced Studies in Archaeology and Ethnohistory, Anthr. 737 (Advanced Studies in Cultural Anthropology), and Anthr. 746 (Advanced Studies in Biological Anthropology). Repeatable to six hours. Prerequisites: Full graduate standing, completion of one core course (Anthr. 736, Anthr. 746, or Anthr. 756), and department 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.

ANTHR 788. Introduction to Research (3). Research methodology in Anthropology, including bibliography, research design, and the philosophy of research. Prerequisites: Full graduate standing and completion of at least one of the following core courses: ANTHR 736, ANTHR 746, or ANTHR 756.

Courses for Graduate Students Only

ANTHR 801. Seminar in Archaeology (3). Comprehensive analysis of archaeological data emphasizing theoretical problems of interpretation and reconstruction. Repeatable up to 6 hours.

ANTHR 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.

ANTHR 820. Seminar in Biological Anthropology (3). Analysis and discussion of ancient fossil, prehistoric, historic, and recent/modern biological variation in an anthropological perspective. Can include advanced studies of human variation and skeletal biology demography and population genetics in anthropology, advanced studies in paleoanthropology and issues in the debate over micro and macro levels of evolution, and quantitative applications to the study of human variation in anthropological contexts. Repeatable up to 6 hours. Prerequisite: departmental consent.

ANTHR 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.

ANTHR 847. Colloquium in Anthropology (1-2). 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 2 credits. Prerequisite: graduate standing in anthropology.

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

ANTHR 870. Independent Reading (2-3). Repeatable up to 6 hours. Prerequisite: departmental consent.

ANTHR 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.

ANTHR 873-874. Advanced Project in Anthropology (2-2). In consultation with their major advisor and committee, students design a project (e.g., a museum exhibit, a written plan for an international business venture, a lesson plan for an anthropology unit in schools) that applies anthropological method and theory to the specific needs of an institution, group, or population. Requires a tangible end product (e.g., paper, thesis, or visual production or exhibit). May be repeated, but limited to a total of 4 credit hours. Prerequisite: committee consent.

ANTHR 875-876. Thesis (2-2). Candidates selecting the thesis option must complete 36 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 research experience in statistics or computer applications. Graduates who select this option often move on to advanced research degrees or careers in research science.

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 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 509G. 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. 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. Prerequisites: junior standing or instructor's consent.

**BIOL 518. Biology of Aging (3).** Cross-listed as GERON 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 biological sciences that satisfies general education requirements.

**Major Courses**
(Used to satisfy the requirements for the major)

**Courses for Graduate/Undergraduate Credit**

**BIOL 502. Vascular Plants (4).** 2R; 4L. An introduction to the structure, reproduction, and evolution of the major groups of living and extinct vascular plants. Includes an introduction to flowering plant systematics. Students earning graduate credit perform a primary literature survey on a topic selected in consultation with the instructor and deliver a 30-minute oral presentation to the class. Prerequisite: BIOL 204 or 211 and CHEM 112.

**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 many of these patterns. Class time is divided among lectures, laboratories, and field work. Field trips throughout Sedgwick County and to the Flint and Chautauqua Hills provide an opportunity to collect specimens and to observe ecology and distribution of native species of flowering plants. Prerequisites: BIOL 204 or 211 and CHEM 112 or instructor's consent.

**BIOL 523. Freshwater Invertebrates (4).** 2R; 4L. Emphasizes the ecology, taxonomy, and form and function of free-living, freshwater invertebrates. Half of the course deals with arthropods. Includes methods of collecting, culturing, and preserving specimens. Part of the course grade is based on a collection of invertebrates correctly prepared and identified. For graduate credit, students submit a term paper or a more extensive collection within a given taxon. Prerequisites: BIOL 204 or 211 and CHEM 112Q.

**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. Prerequisites: BIOL 204 or 211 and CHEM 112; BIOL 527 is also recommended.

**BIOL 529. 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 levels. Covers basic ecological assessments, such as Index of Biological Integrity, Index of Biological Well-Being, and Rapid Bioassessment 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 or 211 and CHEM 112.

**BIOL 527. Comparative Anatomy (5).** 3R; 4L. An intensive study of representative chordates emphasizing vertebrate anatomy. Students earning graduate credit complete additional assignments chosen in consultation with the instructor, such as a term paper based on technical literature, dissection of additional animals, etc. Prerequisites: BIOL 204 or 211 and CHEM 112.

**BIOL 528. Parasitology (4).** 3R; 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. Prerequisites: BIOL 204 or 211 and CHEM 112.

**BIOL 529. 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 or develop projects. Prerequisites: BIOL 204 or 211 and CHEM 112.

**BIOL 530. Applied and Environmental Microbiology (3).** A characterization of the roles of microbes in natural and man-made environments. Discussion of microbial ecology and communities, interactions with higher organisms, biogeochemical cycling, biochemistry, and bioremediation. Students earning graduate credit produce an additional research paper on a topic chosen in consultation with the instructor. Prerequisites: BIOL 204 or 111 and CHEM 112.

**BIOL 532. Entomology (5).** 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 field by performing an individual systematics project. Prerequisites: BIOL 204 or 211 and CHEM 112.

**BIOL 533. 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 or 211 and CHEM 531, or instructor's consent.

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

**BIOL 540. Developmental Biology (4).** 3R; 4L. Developmental processes in animals emphasizing vertebrates. Concentrates on the cell interactions controlling differentiation and morphogenesis. Students earning graduate credit complete additional assignments chosen in consultation with the instructor. Prerequisites: BIOL 204 or 211 and CHEM 112; 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, and acid deposition, reduced biological diversity, and the ecological impacts of pesticides and toxic chemicals. It uses measurements, testing, and mathematical models to quantify the relationships 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 consent.

**BIOL 560. Plant Ecology (2).** 2R. An examination of the relationships of plants to their environment at the organism, population, community, and ecosystem levels. For graduate credit, a student must prepare and present a thirty-minute lecture on one of the topics covered in this course. Prerequisite: BIOL 418 and CHEM 112 or instructor's consent.

**BIOL 561. Plant Ecology Laboratory (2).** Laboratory component of BIOL 560. Field trips are an integral part of the course. Emphasizes an experimental approach to plant ecology. For graduate credit, a student must present the results of the library/laboratory project orally, as well as in writing. Prerequisite or current enrollment in BIOL 560.

**BIOL 572. Computer Methods in Biology (3).** Includes mathematical modeling of biological systems, tools for recording and retrieving experimental results, computer-aided instruction, internet and online science resources, software for scientific publication including digital photo-documentation and reference managers for bibliographies. Students select a biological 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 STA1 570 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 recommended. **BIOL 573. Statistical Applications in Biology (3).** Supplements STA1 570 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 recommended.
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 (3, 2R; 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 topic. Students 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 and present this in a class seminar. Prerequisite: BIOL 418.

BIOL 640. Topics in Zoology (3-4). Selected offerings in zoology. Consult the Schedule of Courses for the current offering(s). Students wishing to enroll in courses not listed in the current Schedule must complete a Directed Independent Study Abstract form and obtain approval prior to enrollment. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Repeatable. Prerequisites: BIOL 204 or 211, CHEM 112 and instructor's consent.

BIOL 654. Pathogenic Microbiology (4R; 4L). An introduction to the important pathogenic micro-organisms 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 660. Topics in Microbiology (2-4). See BIOL 610. Prerequisites: BIOL 330 and instructor's consent.

BIOL 666. Special Topics in Biochemistry (3). Primarily for students who choose the biochemistry field major. Discusses a small number of current problems in biochemistry in depth. Requires reading published research papers in the field. Students earning graduate credit produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisites: BIOL 204 or 211, 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 501, CHEM 662 or 663, CHEM 664, and instructor's consent.

BIOL 702. Environmental Science I (5) 3R; 4L. Cross-listed as GEO 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 into the master's program in environmental science program. Prerequisite: BIOL 702 or instructor's consent.

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

BIOL 706. Environmental Science Internship (1-4). Cross-listed as GEO 706 and CHEM 708. Students in the master's program in environmental science may gain interdisciplinary skills in environmental science by participating in applied and/or basic research internship projects with local 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: BIOL 702 and 703 or equivalent.

BIOL 710. Glycobiology (3). Introduction to glycoprotein biosynthesis, structure, and function. Covers the various roles of carbohydrate chains 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 720. 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 chooses a topic, completes a written report, and gives an oral presentation to the class. Graduate students do more reading in the primary neurobiology literature. Prerequisites: BIOL 420 and 534 or equivalents and instructor's consent.

BIOL 730. Cancer Biology (3). The basic mechanisms of carcinogenesis will be covered by discussing the control of normal and abnormal cell growth in several model systems. Students earning graduate credit will also submit a term paper dealing with a specific topic to be determined by discussion with the instructor. Prerequisite: BIOL 420.

BIOL 737. Aquatic Toxicology (4L; 2L). The qualitative and quantitative study of the late and effects of toxic agents in the aquatic environment. Class examines the concentrations or quantities of chemicals that occur in the aquatic environment...
and includes a detailed study of the transport, distribution, transformation, and ultimate fate of various environmentally important chemicals. Class is for undergraduate or graduate students interested in advanced training in toxicology. Prerequisites: BIOL 525 or equivalent and CHEM 531 or equivalent, or instructor's consent.

BIOL 750. Biology Workshop (1-3).

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

BIOL 767. Mechanisms of Hormone Action (3). The mechanism of action of several hormones is described and used to illustrate the major intracellular signal transduction pathways. Includes gonadotropin-releasing hormone, the glycoprotein hormone, luteinizing hormone, follicle-stimulating hormone, chorionic gonadotropin, thyroid-stimulating hormone, steroid hormones, thyroid hormone, insulin, proinsulin, and growth hormone. Mostly lectures covering signal transduction pathways. Students write brief summaries of recent research papers related to the current week's lecture topics. Each student makes an oral presentation of a research paper in journal club format. Students earning graduate credit write a term paper describing in detail a hormone not described in class and its mechanism of action. Prerequisites: BIOL 420 and CHEM 662 or their equivalents, plus either BIOL 534 or 536 or their equivalents, and instructor's consent.

BIOL 771. Evolutionary Ecology (4). R, 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 419, 419, or instructor's consent.

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

BIOL 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 are the basis for their grade. One of these presentations may be their thesis defense. Prerequisite: acceptance into MS program.

BIOL 798. Biology Seminar (2-4). Reviews of current research in biological sciences. Students earning graduate credit produce a term paper and deliver a class seminar based on a topic chosen in consultation with the instructor. No more than 4 credit hours earned in BIOL 798 may be applied toward completion of the departmental major requirements or the departmental Master of Science degree requirements.

Courses for Graduate Students Only

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

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

Chemistry (CHEM)

Graduate Faculty


Associate Professor: David M. Eichhorn (graduate coordinator)

Assistant Professors: Yuri Ilitchev, Michael J. Van Stipdonk

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

Admission Requirements

To enroll in the graduate program in chemistry, students must follow the admission procedures required by the Graduate School. The chemistry department requires a baccalaureate degree in chemistry, a grade point average of at least 3.000/4.000 (both overall and in chemistry), two letters of recommendation from individuals familiar with the applicant's academic background, a one-page typed statement of goals and research interests, and submission of test scores from the general GRE exam. The department strongly recommends test scores from the chemistry subject GRE as well. International students must have a minimum TOEFL score of 570 (230 on computer). Applicants whose transcripts do not explicitly list the chemistry courses which they have taken must submit an official description of the courses which comprise their chemistry degree. Students deficient in any of the requirements may be admitted conditionally provided they follow the specified procedures required to remove any deficiencies.

Applications are reviewed as completed throughout the year.

Assessment Exam Requirements

for the MS and PhD Degrees

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

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 polymer chemistry. Students must successfully complete CHEM 700 once, and full-time students must register each semester in CHEM 701. Additional courses, which may be outside the major field, are selected by students in consultation with their advisor and the department's advising committee.

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

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

Doctor of Philosophy Requirements

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

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

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

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

**Courses for Graduate/Undergraduate Credit**

**CHEM 531.** Inorganic Chemistry (3). General education further study course. Basic inorganic chemistry emphasizing molecular symmetry and structure, fundamental bonding concepts, ionic interactions, periodicity of the elements, 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 C or better.

**CHEM 523.** Analytical Chemistry (4). 2R; 6L. Lab fee. General education further study course. Examination of data, theory and application of gravimetric analysis and precipitation, neutralization, and oxidation-reduction volumetric analysis. Prerequisite: CHEM 112Q with a C or better.

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

**CHEM 531.** Organic Chemistry (5). 3R; 6L. Lab fee. General education further study course. An introduction to the study of carbon compounds emphasizing reaction mechanisms, stereochemistry, and spectrographic analysis. Prerequisite: CHEM 112 with a C or better.

**CHEM 532.** Organic Chemistry (5). 3R; 6L. Lab fee. 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 drug 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 533 and 531. This course does not meet the needs of chemistry majors or premed students. Prerequisite: CHEM 112 or equivalent.

**CHEM 534.** Elementary Organic Chemistry Laboratory (2). Lab fee. A basic laboratory course to provide pertinent experiences in the laboratory to fortify the survey lecture course CHEM 533. Prerequisite or corequisite: CHEM 533.

**CHEM 545.** Physical Chemistry (3). General education further study course. Thermodynamics. Studies gases, first law, electrochemistry, second and third laws, phase equilibria, solutions, chemical equilibria, electrochemistry, and surface chemistry. Prerequisites: CHEM 112Q, 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. Prerequisites: one year of college physics and MATH 344 or its equivalent.

**CHEM 547.** Physical Chemistry Laboratory (2). 6L. Lab fee. Physical chemistry experiments which illustrate principles learned in CHEM 545 and 546. Prerequisite: CHEM 545 or 546.

**CHEM 602.** 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 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 pELLING polysaccharides and natural fibers along with industrial adsorbents (clays, zeolites, ion exchange resins, carbon blacks), and emulsion technology. Topics in polymer chemistry include ways of making polymers, resins, elastomers, and synthetic fibers; methods of polymer synthesis, structure-property correlations (how structure influences physical properties) plastics recycling, and methods of plastics and composites processing. Prerequisite or corequisite: CHEM 523.

**CHEM 605.** Medicinal Chemistry (3). For students interested in chemistry related to the design, development, and mode of action of drugs. Course describes those organic substances used as medicinal agents and explains the mode of action and chemical reactions of drugs in the body; illustrates the importance and relevance of chemical reactions as a basis of pharmacological activity, drug toxicity, allergic reactions, carcinogenicity, etc.; and brings about a better understanding of drugs. Includes transport, basic receptor theory, metabolic transformation of drugs, discussion of physical and chemical properties in relation to biological activity, drug design, structure-activity relationships, and discussion of a select number of organic medicinal agents. Prerequisites: CHEM 532 or 533 or equivalent; a semester of biochemistry (CHEM 661 or 662) and a year of biology are strongly recommended.

**CHEM 615.** Advanced Inorganic Chemistry (3). Includes modern bonding theories, structure and spectra of inorganic compounds, coordination and organometallic chemistry, the nature of inorganic ring systems and polymers, inorganic environmental chemistry; mechanisms of inorganic reactions, and solid state chemistry. Prerequisites: CHEM 544 and 546.

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

**CHEM 641.** Advanced Physical Chemistry (3). Quantum chemistry, atomic and molecular spectra, statistical thermodynamics, and reaction rate theory. Prerequisite: CHEM 548.

**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 523 and 532 or equivalents.

**CHEM 663.** Biochemistry of Cell Metabolism, Biosoehem­­ises, Structure, Function, and Regulation of Proteins and Nucleic Acids (3). Study of metabolism and control of carbohydrates, lipids, phospholipides, steroids, amino acids and proteins; synthesis of puriphyn, amides and polyamides; synthesis and metabolism of purines, pyrimidines, and nucleotides; synthesis and structure of DNAs, RNAs and proteins; organization and functioning of genes; evolution of proteins and nucleic acids; hereditary disorders of metabolism; biochemistry of endocrine glands; major nutrients and vitamins; body fluids and generalized tissues. A fundamental background of biology or microbiology is recommended but not essential. Prerequisite: CHEM 662.

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

**CHEM 666.** Special Topics in Biochemistry (3). (Offered
CHEM 669. Research in Biochemistry (2). Cross-listed as BIOL 669. SIU grade only. Students in the biochemistry field major may participate in a biochemistry research project under the direction of a faculty member. Requires a written report summarizing the results. May be repeated once for credit. Prerequisites: BIOL 420 and CHEM 662 or 663 and 664.

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

CHEM 700. Chemistry Seminar (1). SIU 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). SIU grade only. Speakers for the colloquium consist of outstanding chemists from other institutions and faculty. Repeatable for credit.

CHEM 702. Environmental Science I (5) 3R; 4L. 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. The laboratory portion addresses local environmental problems from a risk assessment perspective. CHEM 702 and 703 (or equivalent) are required for all graduate students in the master's of environmental program. Prerequisite: acceptance into the master's program in environmental science or instructor's consent.

CHEM 703. Environmental Science II (3) 3R; 4L. 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 smog, and hazardous waste chemistry. The laboratory portion addresses local environmental problems from a risk assessment perspective. CHEM 702 and 703 (or equivalent) are required for all graduate students in the master's of environmental program. Prerequisite: CHEM 702 or instructor's consent.

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

CHEM 706. Environmental Science Internship (3-6). Cross-listed as BIOL 706 and GEOL 706. Students in the master's program in environmental science may gain interdisciplinary skills in environmental science by participating in applied and/or basic research 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: CHEM 702 and 703.

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

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

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

CHEM 721. Physical Organic Chemistry (3). Discussion of advanced topics in stereochemistry and conformational analysis and organic reaction mechanisms. Prerequisite: CHEM 532.

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


CHEM 741. Quantum Chemistry (3). Theoretical basis of atomic and molecular structure. Includes the postulates of quantum mechanics, exact solutions for the particle-in-a-box and the hydrogen atom, variation and perturbation techniques, electron spin, Hartree-Fock and configuration-interaction methods, molecular-orbital and valence-bond wave functions, and variational and Helmann-Feynman theorems. Prerequisites: CHEM 546, MATH 394 or equivalent. Corequisite: CHEM 705 or equivalent.

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, infrared, and Raman spectra; thermochemical properties; heat of formation; bond and reaction energies; ionization energy barriers; reaction pathways; molecular orbital, atomic charges, dipole and multipole moments, ionization potentials; bond orders; orbital energies and photoelectron spectroscopy; excited state properties, singlet and triplet states. Prerequisite: CHEM 566 or equivalent (MATH 394 is necessary).

CHEM 751. Chain Growth Polymerization (3). Mechanistic, kinetic, and thermodynamic aspects of polymerization processes which proceed by a chain growth mechanism, free radical, anionic, cationic, and Ziegler-Natta and group transfer polymerization. Prerequisites: CHEM 531 and 548.

CHEM 752. Step Growth Polymerization (3). Polymerization processes which proceed 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 asnylon, epoxies, and polycydes in detail. Prerequisites: CHEM 531 and 548.

Courses for Graduate Students Only

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

CHEM 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 catalysis mediated by metal ionic, metal storage and transport, ion transport, and the role of transition metals in metabolism. Prerequisites: CHEM 615 and 663 or equivalents.

CHEM 822. Analytical Separations (3). The theory and practice of analytical separation methods including gas and liquid chromatography, ion exchange, and electrophoresis. Prerequisite: CHEM 534 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 824. Electroanalytical Chemistry (3). Includes voltammetry, polarography, chromoamperometry, and conductometry; reversible and irreversible diffusion controlled processes; CE (chemical reaction before electrical reaction). EC (electrochemical reaction before chemical reaction), and catalytic reaction; organic polarography and voltammetry. Prerequisite: CHEM 524 or equivalent.

CHEM 831. Advanced Physical Organic Chemistry (3). Includes molecular orbital theory, sigma topic rearrangements, electrocyclic reactions, cycloadditions, reactive intermediates, and photochemistry. Prerequisite: CHEM 731.

CHEM 832. Modern Synthetic Methods (3). Discussion of retrosynthetic analysis, applications, asymmetric syntheses, and stereochemistry. Prerequisite: CHEM 732.

CHEM 834. Heterocyclic Chemistry (3). An account of the physical and chemical properties of the major classes of heterocyclic compounds. Prerequisite: CHEM 732.

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 in 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, relativistic considerations, tensor operators, and molecular orbital calculations. Prerequisites: CHEM 705 and 741 or equivalent.

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

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

CHEM 845. Chemical Thermodynamics (3). A presentation of the basic laws of thermodynamics in a classical framework to increase understanding of real physical systems. Emphasizes theory and its application to chemical systems. Prerequisites: CHEM 548 and MATH 344 or equivalents.

CHEM 856. Molecular Spectroscopy (3). The theoretical basis for spectroscopy and spectrocopic determinations of molecular structure. Includes polyatomic systems, time-dependent perturbation theory, vibration and rotation of diatomic molecules, vibrational and rotational isotope effects, and magnetic resonance spectroscopy. Prerequisites: CHEM 741 or its equivalent and CHEM 705 or its equivalent.

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

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

CHEM 863. Analytical Biochemistry (3). A review of modern analytical methods used in biochemistry and molecular biology including: absorbance and fluorescence spectroscopy, chromatography (affinity, gel-filtration, HPLC, ion-exchange, ion-pair), gel electrophoresis, radioactive tracer methods, clonning, sequencing, and recombinant DNA procedures. Prerequisites: BIOL 203 and 304 and CHEM 662 or 663 or equivalents.


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

CHEM 890. Research in Chemistry 2-18. S/U grade only. Research for the student planning to receive the PhD. Research is directed by a faculty member. Repeatable for credit.

Communication, Elliott School of (COMM)

Graduate Faculty

Professors: Philip Gaunt (director, Interdisciplinary Communication Research Institute), Vernon Keel
Associate Professors: Les Anderson, Richard Armstrong (associate director, Elliott School), Dan Close, Patrica Dooley (graduate coordinator), Susan S. Huxman (interim director, Elliott School), Sharon H. Iorio (associate dean, Fairmont College of Liberal Arts and Sciences), Keith Williamson
Assistant Professors: Kevin Hager, Jeff Jarman, Michael Wood

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. 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 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

The Master of Arts in Communication requires 36 hours of course work—15 hours of core courses and 21 hours of electives. Students selecting the thesis option may count up to 6 hours of thesis credit toward the required 36-hour total.

Program Core (Required) Courses

COMM 801, Introduction to Communication Research 3

COMM 802, Historical and Qualitative Methodologies in Communication Research 3

COMM 803, Empirical/Quantitative Research Methodology in Communication 3

COMM 812, Contemporary Theories of Communication 3

COMM 865, Organizational Communication 3

Other Courses. In addition to the required courses, students, with the advice and consent of their faculty advisor, may select courses to complete the Plan of Study, as discussed in the Graduate School section of the Graduate Catalog. The Plan of Study will be individually designed to accommodate a student's
COMM 500. Advanced Reporting (3). For juniors and seniors; the techniques of reporting and writing the more complex and important types of news stories. Covers police beat stories, sports, and economic reporting; includes the study and practice of journalistic interviewing. Prerequisites: junior standing; COMM 301 with a C or better, and either 401 or 422.

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

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

COMM 522. Advanced Broadcast News (3). Studies techniques of preparing news for radio and television presentation emphasizing actual work in radio and television newsrooms. Lab periods arranged with instructor. Prerequisite: COMM 422.

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

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

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

COMM 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. Prerequisites: COMM 301, 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. Prerequisites: COMM 301 and instructor's consent.

COMM 604. Field Video Production (3). Application of video equipment and techniques for field productions. Examination of visual and audio expression in relation to effective video productions in a field setting. Prerequisites: COMM 35 or instructor's consent.

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

COMM 612. 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 636. Integrated Marketing Communications Campaigns (3). Instruction and practice in planning and developing integrated advertising and public relations campaigns. Teaches students to perform a situation analysis, identify objectives, develop strategies and tactics, and write a plan book, as well as produce advertising and public relations campaign materials. Prerequisite: COMM 324 or instructor's consent.

COMM 638. Leadership Techniques for Women (3). Cross-listed as WOM 535. Provides the female student experience in decision making and improves skills in leadership through role playing and exercise in group dynamics.

COMM 639. Advanced Public Speaking (3). Skills development in a variety of advanced presentational methods, including speaking from a TelePrompTecr, using PowerPoint technology, spokesperson press conference speaking, conducting a training session, formal manuscript speaking, after dinner speaking, and writing a speech for another person. Prerequisite: COMM 325.

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 threat-
COMM 101. Introduction to Communication Research (3). An integrative approach to an understanding of the nature and scope of communication research and graduate studies in communication and theatre/drama. Provides an overview of current research in the discipline. Instruction in the basic steps of research: availability of library and other sources; bibliographic search; computer accessing of source materials; organization, style, and format of a research report and citation of sources in accordance with standard style guides. Should be taken at the beginning of the graduate program.

COMM 102. Historical and Qualitative Methodologies in Communication Research (3). An introduction to historical, critical, and observational methodologies in communication research. Emphasizes historical, critical, and observational research, particularly those forms of research common to communication studies. Prerequisite: COMM 881.

COMM 103. 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 881.

COMM 104. Contemporary Theories of Communication (3). Studies selected conceptual models useful in the academic study of human communication, including theories involving social, psychological, and sociocultural contexts as interpersonal communication, public communication, and mass communication.

COMM 105. Investigation and Conference (1-3). Cross-listed as Thea. 105, individual study or projects. Repeatable for credit with departmental consent. Prerequisite: faculty sponsor.

COMM 106. Communication Internship (1-2). Credit for professional experience that integrates theory with a planned supervised professional experience designed to complement and enhance academic program. Individualized programs must be formulated in consultation with and approved by appropriate faculty sponsors. May be repeated, but limited to a total of 4 credits in COMM 690 and COMM 841. Grad/Cr/NCr. Prerequisite: departmental consent.

COMM 107. Directed Study (1-4). Cross-listed as Thea. 107, individual study or projects. Repeatable for credit with departmental consent. Prerequisite: faculty sponsor.

COMM 108. Seminar in Communication (1-3). Special seminars dealing with current issues, problems, or interests in various areas of communication. Repeatable for credit in different topics only.

COMM 109. Theory and Professional Experience (3). An examination of communication concepts, processes, theories, and strategies related to the workplace and development. Includes the application of these elements to formal situations across disciplines and at various educational levels as well as in professional training settings.

COMM 110. Seminar in Communication (1-3). Special seminars dealing with current issues, problems, or interests in various areas of communication. Repeatable for credit in different topics only.

COMM 111. Directing the Forensics Program (3). A study of methods and procedures in coaching and directing the high school and college forensics programs (debate and individual events). The future teacher is made aware of the literature and professional organizations in the field.

COMM 201. Communication Theories (3). Study of the development of major communication theories, including their application to practical problems in the major fields of communication. Emphasis on critical presentation, analysis, and evaluation of communication theories. Prerequisite: COMM 881.

COMM 202. The Audience (3). Examination of basic research on audience behavior. Emphasizes the role of the audience in the communication process. Includes an analysis of audience behavior in the mass media and interpersonal settings. Prerequisite: COMM 881.

COMM 203. Contemporary Theories of Communication (3). A study of selected theories of communication, with emphasis on those that are most applicable to the mass media. Emphasis on the use of communication theories in the analysis of contemporary social issues. Prerequisite: COMM 881.

COMM 204. Media and Mass Communication (3). Study of the mass media as social institutions, their role as social institutions, and their controls and audience; and their effects. Prerequisite: COMM 881.

COMM 205. Communication and Research (3). An examination of research methods in communication studies. Prerequisite: COMM 881.

COMM 301. Theories of Rhetoric: Classical (3). Cross-listed as ENGL 825. An intensive study of the rhetorical theories of classical writers from 666 B.C. to the decline of Roman oratory. Principal emphasis on Isocrates, Plato, Aristotle, Quintilian, Cicero, and Longinus.

COMM 302. Theories of Rhetoric: Renaissance to Early Modern (3). Cross-listed as ENGL 826. 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, Pelton, Bulwer, Sheridan, Steale, Rush, John Quincy Adams, Blair, Campbell, and Whately.

COMM 303. 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 304. Directed Study (1-3). Individual study or projects. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

COMM 305. Thesis (1-3). Prerequisite: departmental consent.

Community Affairs, School of

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

Criminal Justice (CJ)

Graduate Faculty

Professors: Paul Cromwell (director, School of Community Affairs), Michael Palmiotto

Associate Professors: Andrea Bannister (director, RCPTI, and graduate coordinator), Ronald G. Jaccovetta, Delores Craig-Moreland (director, JJRI), Martha Smith

Assistant Professors: Alison McKenney Brown (internship coordinator), Brian Withrow (director, MCJI)

Master of Arts in Criminal Justice

Admission Requirements

The Master of Arts in Criminal Justice at Wichita State University is housed in the School of Community Affairs. It is one of the nation's oldest criminal justice graduate degree programs. Intended to advance learning beyond the more general undergraduate educational curriculum, the program 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. Applications are accepted for fall semester admission only.

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

Applicants are evaluated with respect to (1) undergraduate grade point average (a minimum GPA of 3.00 based on the last 60 hours required for consideration of admission to degree status); (2) amount, type, and scope of undergraduate preparation; (3) reference letters; and (4) GRE scores. Final recommendation on a candidate's admission to the program is made to the Graduate School by the graduate coordinator of the criminal justice program.

Degree Requirements

The 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 and 894 must be completed in the first semester of study with a B or better. 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 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.

Examinations

All students' progress will be reviewed after the completion of no fewer than 12 credit hours and no more than 18 credit hours. Upon review, if the graduate faculty deems a student's progress unsatisfactory, the student may be required to pass a qualifying exam, which includes a writing requirement and a comprehensive exam, before continuing in the criminal justice program.

Thesis candidates and candidates who choose an applied research paper are required to defend orally both their prospectus and their final project. Students electing the 36-hour straight course work track are required to pass a written comprehensive examination.

Courses for Graduate/Undergraduate Credit

CJ 501. Integrity in Public Service (3). Cross-listed as ETH S 501, GERON 502, P ADM 501. Explores the student to basic principles of personal and professional integrity and how those principles apply to their daily life as a member of the community and as an employee of a government or social service agency. 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 and begin to develop critical thinking and analytical skills regarding ethical behavior; and become more personal-ly and professionally responsible. Prerequisite: junior or senior-level or instructor's permission.

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

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

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

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

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

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

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

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


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

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

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 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.


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 191.


CJ 651. Dispute Resolution (3). Cross-listed as ETH S 651, GERON 651, P ADM 651. Examines a range of topics including mediation, law, communication, negotiation, and other dispute resolution practices. Includes criminal and victim mediation and both inter-group and intra-organization relations and dispute resolution techniques. Analyzes case studies.
General education further study course. Analyzes decision-making processes in juvenile justice and the content of juvenile law and Supreme Court decisions affecting juvenile justice, and selected problems in juvenile justice. Reviews the juvenile justice form movement. Covers delinquency prevention and control and ethical issues associated with juvenile justice. Prerequisite: CJ 191.

672. 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 empowerment of the community, and integration of these concepts into community policing. Enrolled in: CJ 191.

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

731. Cooperative Education (1-6).
Provides a paid field assignment that integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic program. Students work with 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 by consent only.

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

783. Advanced Special Topics in Criminal Justice (1-4).
Specialized study of topics in criminal justice with particular emphasis based on the expertise of the various instructors. Prerequisites: CJ 191 and junior, senior, or grad-level standing.

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: a approved statistics class and an approved methods class.

An overview of the development of social work as a discipline and the role of the social worker in community development. Explores the social work role in community development, 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 854. Seminar on the Application of Criminological Theory (3).
An in-depth analysis of the major theories of criminology and their importance to the criminal justice process. Emphasizes the student's development of a consistent and valid frame of reference.

CJ 855. Seminar in Criminal Justice (3).
Familiarizes students with critical issues facing the criminal justice system. Reviews issues which face law enforcement, the courts, corrections, and the juvenile justice system, considering the integrity of the entire criminal justice system.

CJ 856. 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 857. 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 857. Advanced Research Methods (3).
Cross-listed as Eron 857 and PADM 857. 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, ETH S 597, GERON 597, PADM 597, or equivalent.

Original research proj-
ETH 5 525. 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 570. 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; Nancy McCarthy Snyder, HWS Public Administration; James H. Swan, Public Health Science; Marilyn L. Turner, Psychology

Assistant Professors: 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 775 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

GERON 518, Biology of Aging or
NURS 789, Chronic Illness and Aging
GERON 663, Economic Insecurity
GERON 702, Research Methods
GERON 715, Adult Development and Aging
GERON 798, Multidisciplinary Perspectives on Aging
GERON 802, Aging Programs and Policies
GERON 810, Advanced Gerontology Internship*
GERON 850, Selected Topics in Gerontology

Elective**

Terminal Research Project* (one of the following)

GERON 898, 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; ACCT 500; MKT 800; PHS 804, 812, 818, 822, 826, 834, 858; and PSY 813. With the consent of their graduate program advisor and program approval, students may take other courses not listed as elective hours.

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

Graduate 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.
GERON 590. Field Experience (1-6). 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 592. Integrity in Public Service (3). Cross-listed as CJ 501, ETH S 530, P ADM 501. Exposes the student to basic principles of personal and professional integrity and how those principles apply to their daily life as a member of the community and as an employee of a government or social service agency. 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 100, GERON 100, SOC 111 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 111.

GERON 514. Anthropology of Aging (3). Cross-listed as ANTH 514. An anthropological analysis of the latter stages of the life cycle with historical and cross-cultural perspectives.

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

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

GERON 550. Selected Topics in Gerontology (2-6). 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 (1). Specialized instruction using a variable format in relevant gerontology subjects. Repeatable for credit up to 6 hours.

GERON 560. 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 651. Dispute Resolution (3). Cross-listed as CJ 651, ETH S 651, and P ADM 651. Examines a range of topics including causation, hypotheses, communications, mediation, arbitration, and other dispute resolution techniques. Includes criminal and victim mediation and both inter-group and inter-organization relations and dispute resolution techniques. Analyzes case studies.

GERON 663. Economic Insecurity (3). Cross-listed as ECON 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 202 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 primary and secondary sources of data of the type used in policy, planning, and administrative research. Students must complete several short research projects.

GERON 725. 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 (3-8). Provides practical field experience, under academic supervision, that is suitable for graduate credit and fulfills and enhances the student's academic program. Repeatable up to 6 hours. Prerequisites: 12 hours of gerontology and instructor's consent.

GERON 788. Multidisciplinary Perspectives on Aging (3). Introduction to the advanced study of the process of aging from a multidisciplinary point of view. 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 802. Quantitative Methods for Public Sector Professionals (3). Cross-listed as CJ 802, 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. Prerequisites: either CJ 702, GERON 702, or P ADM 702.

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 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 engaged 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, 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, ETH 597, GERON 897, 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
Professor: Shang-Ching Chou
Associate Professor: Rajiv Bagai, Prakash Ramanan
(in chairperson)
Assistant Professor: Rodney Bates (graduate coordinator), Chin-Chih Chang, Satinriva Prabhakar

Master of Science

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

Admission Requirements

All candidates for graduate study must have a bachelor's degree (in any field) from an accredited institution. In addition, for MS degree status and 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.

Required background courses: This consists of Math and CS courses.

a) Math courses: Two semesters of university level math at the level of Calculus I or above.

b) CS courses: A programming course, CS 300, 320, 411, 510, 540, 560.

In addition to the graduate school requirements for admission, the applicant should meet all of the following requirements pertaining to the required background courses:

1) Have taken two semesters of university level math at the level of Calculus I or above.

2) Have at least a B average in all of the background courses taken.

3) Either

a) Have obtained at least a B grade in any one CS background course, or

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

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

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

Degree Requirements

The MS degree requires 30 credit hours for the thesis option or 33 credit hours for the project option.


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.

5. Thesis/Project:

A. Thesis (6 credit hours)—The thesis option is usually exercised by students planning to pursue a PhD degree in computer science. This option requires 6 credit hours of Thesis research (CS 892) in a specialized area of computer science under the supervision of a computer science graduate faculty advisor. This should culminate in the writing of a thesis. The student should pass an oral final examination by an ad hoc faculty committee headed by the thesis advisor. This examination will depend on the subject matter of the thesis. (30 total hours)

B. Project (9 credit hours)—The project option is usually exercised by students planning to work in industry. This option requires 3 credit hours of Project (CS 891), one computer science course numbered 800-889 or CS 898, and one computer science course at the 600-level or above. The project will be supervised by a computer science graduate faculty advisor and can be job-related. The student should write a report on the project and pass an oral final examination by an ad hoc faculty committee headed by the project advisor. This examination will depend on the subject matter of the project. (33 total hours)

Courses for Graduate/Undergraduate Credit

CS 501. Numerical Programming Techniques (3). This course 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: MATHE 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—impertive languages, functional languages, logic languages, object-oriented languages, etc. Prerequisite: CS 410 with a C or better.

CS 540. Operating Systems (3). The course 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 C or better.

CS 560. Data Structures and Algorithms II (3). This course analyzes the algorithms and proof of correctness. Analysis of space and time complexities of various algorithms including 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 C or better in each.

CS 612. Systems Programming (3). This course studies software including assemblers, disassemblers, macrosprocessors, link editors, loaders, language translators, and debuggers. Practical experience in building system software through programming laboratory exercises. Prerequisites CS 300 and 312 with a C or better.

CS 615. Compiler Construction (3). This course is a study of programming languages and sufficient programming experience. Covers over-all design and organization of compilers and interpreters, lexical and syntax analysis, construction of symbol tables, scope analysis, type checking, error recovery, run-time organization, intermediate code and its interpretation, code
generation, and optimization. Project-oriented course. Emphasizes practical experience gained through the design and implementation of a simplified but non-trivial compiler for a strongly typed, procedural language. The implementation is carried out in a modern systems programming environment. Prerequisite: CS 310 or equivalent with a 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 C or better, and CS 300 and CS 320 with a B or better in each; or CS 410 or CS 560 with a C or better, or departmental consent.

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

CS 655. Information Delivery on the Internet (3, 3R; 1L). Explores the capabilities of providing information on the World Wide Web. Information is typically provided through some sort of 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 provides a wide range of Java language and the Applet interface and utilities. Prerequisite: CS 200 with a C or better or instructor's consent.

CS 665. Introduction to Database Systems (3, 3R; 1L). Fundamental aspects of database systems, including conceptual database design, entity-relationship modeling, and object-oriented modeling; the relational data model and its foundations, relational languages, and SQL (Structured Query Language); logical database design, dependency theory, and normal forms; physical database design, file structures, indices, and decomposition; integrity, security, concurrency control, recovery techniques, and optimization of relational queries. Prerequisite: CS 300 and 320 with a C or better.

CS 668. Introduction to Software Engineering (3, 3R; 2L). An introduction to the body of knowledge, presently available tools and current theories and conjectures regarding the process of program development. Studies these topics from several different viewpoints, ranging from the individual program statement to a large programming project. Prerequisites: CS 300 and 410, each with a C or better.

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

CS 670. 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 C or better.

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

CS 720. Theoretical Foundations of Computer Science (3). 3R; 1L. Provides an advanced introduction to the theoretical bases of computer science. Computer science theory includes the various models of finite state machines, both deterministic and non-deterministic, and concepts of decidability, computability, and formal language theory. Prerequisite: CS 320 or equivalent with a C or better.

CS 742. Computer Communication Networks (3, 3R; 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 C or better or departmental consent.

CS 750. Workshop in Computer Science (1-5). Short-term courses with special focus on introducing computer science concepts. Repeatable for credit. Prerequisite: departmental consent.

CS 771. Artificial Intelligence (3, 3R; 1L). Heuristic versus algorithmic methods, principles of heuristic approach, and cognitive processes. Also covers objectives and methods of artificial intelligence research and simulation of cognitive behavior. Includes a survey of appropriate examples from various areas of artificial intelligence research. Prerequisites: CS 300 and 320 with a grade of C or better in each.

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 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/NR only. Prerequisites: departmental consent and graduate GPA of 3.00 or above.

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

Courses for Graduate Students Only


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

CS 821. Analysis of Algorithms (3, 3R; 1L). 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 B or better; CS 720 is recommended.

CS 822. Parallel Algorithms (3, 3R; 1L). Deals with the design and analysis of parallel algorithms for various combinatorial problems in the Parallel Random Access Machine (PRAM) model. Covers models of parallel computation, the PRAM model, basic techniques for designing parallel algorithms, algorithms on lists and trees, and algorithms for selection, merging, sorting, searching, as well as algorithms for graph problems. Prerequisites: CS 560 with a B or better.

CS 841. Advanced Computer Architecture (3, 3R; 1L). A study of advanced topics in computer architecture like parallel processing, stack architecture, 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 580.

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

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

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

CS 872. Machine Learning and Discovery (3). 3R; 1L. 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). 3R; 1L. 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). 3R; 1L. 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 C or better in each, or instructor's consent.

CS 881. Software Specification and Design (3). 3R; 1L. 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). 3R; 1L. Presents the knowledge, techniques, and tools necessary to manage the development of software products. Includes 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 891. Project (3). An intensive project involving the analysis and solution of a significant practical problem which must be supervised by a CS graduate faculty advisor; it can be job-related. Students must write a report on the project and pass an oral final examination by an ad hoc faculty committee headed by the project advisor. Graded S/U only. Prerequisite: departmental consent.

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

CS 893. Individual Reading (1-3). Graded S/U only. Prerequisite: departmental consent.

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

Criminal Justice
See Community Affairs, School of.

English (ENGL)
Graduate Faculty
Distinguished Professor: Albert Goldfarb (Adelle B. Davis Distinguished Professor of Humanities)
Professors: Tina Bennett, Sarah B. Daugherty, Lawrence M. Davis, Jeannine M. Hathaway, Philip H. Schneider, William F. Woods
Associate Professors: Christopher K. Brooks, Margaret Dawe Baughman (chairperson), W. Stephen Hathaway, Diane D. Quanic (graduate coordinator), Richard S. Spillman, Donald R. Winke, Peter T. Zoller
Assistant Professors: 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 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 6 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 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 the nature of this differential set by professors.

Admission Requirements
Applicants must meet the general requirements of the Graduate School, with the additional requirement of a 3.000 grade point average in their previous 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 freshmen 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 have 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 graduate 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

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 authors or special topics courses (ENGL 515, 521, 503, 840, 541, 845, or 850), 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 academic study. It is not exclusively a studio program; rather, it encourages the development of writers who are able, as the result of additional course work in English, to demonstrate skills useful in teaching, editing, and other related areas. A core of workshops and tutorials leads to a final writing project: a collection of fiction or poetry, a novel, or some other appropriate work. Flexibility is provided in academic course work to allow for a variety of possible interests.

All MFA students are required to take ENGL 800, Introduction to Graduate Study in English. Teaching assistants must take ENGL 780, Advanced Theory and Practice in Composition, unless specifically exempted.
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 861, 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 present their final writing project with a short introduction from their choice to do so.

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

Composition

Courses for Graduate/Undergraduate Credit

ENGL 581. Composition Practicum (I). 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 (I). Introduces theories of rhetoric, research in composition and writing programs, and practices in schools and colleges. Students investigate the processes of writing, analyze various samples of school writing, and develop their own writing skills by writing, revising, and evaluating their own and others' work. Especially for prospective and practicing teachers; may not be taken for credit by students with credit in ENGL 780.

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

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

Creative Writing

Courses for Graduate/Undergraduate Credit

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

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

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

Courses for Graduate Students Only

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

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

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

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

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


Linguistics

Courses for Graduate/Undergraduate Credit

ENGL 667. English Syntax (3). Cross-listed as LING 667 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: ENGL 315 or equivalent or departmental consent.

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

ENGL 681. Editing American English (3). Students master the rules and conventions of grammar, sentence structure, spelling, punctuation, usage, and mechanics, and learn how to apply them while they are revising and editing a written text. Students work as tutors in the Writing Center to learn and understand the practical application of editing rules. Includes instruction in the conventions of editing Standard English (also known as Edited American English) and in
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 transoendental 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 after World War II. Readings also may include literary criticism and other types of nonfiction prose. Discussions cover themes, topics, and literary forms inspired by the social and cultural movements and events of the first half of the 20th century.

ENGL 512. Studies in Fiction (3). Subjects announced each semester. Repeatable for credit.

ENGL 513. Studies in Poetry (3). Subjects announced each semester. Repeatable for credit.

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 340. Prerequisite: 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 533. Studies in Contemporary Literature (3). Modern literature, primarily British and American, since 1950. Subjects announced each semester. Repeatable for credit.

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

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

ENGL 537. Contemporary Women's Drama (3). Cross-listed as WOMS 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. 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 Criseyde, and selected lyrics, with a few works by other late 14th century authors and some critical and historical studies. Focuses on close reading of Chaucer in Middle English. Prerequisites: junior standing and one college literature course, or instructor's consent.

ENGL 661. Editing American English (3). Students master the rules and conventions of grammar, sentence structure, spelling, punctuation, usage, and mechanics, and learn how to apply them while they are revising and editing a written text. Students work as tutors in the Writing Center to learn and understand the practical application of editing rules. Includes instruction in the conventions of editing Standard English (also known as Edited American English) and in methods of effective tutoring. Prerequisites: ENGL 101 and 102.

Courses for Graduate Students Only

ENGL 600. Introduction to Graduate Study in English (3). Prepares students to perform effectively in graduate classes in English. Covers: (1) basic bibliographical tools; (2) terminology both technical and historical; (3) various approaches to the study of literature, such as intrinsic analysis of a literary work, the relationships of biography to literary study, and the relevance of other disciplines, such as psychology, to literature; and (4) the writing of interpretative and research essays. Maintains a balance between criticism and research throughout the semester.

ENGL 617. Graduate Readings in 20th Century British Literature (3). Yeats, Joyce, Lawrence, Auden, Spender, and their contemporaries.

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

ENGL 822. Graduate Readings in American Literature II (3). From 1870 to 1930 emphasizing James, Twain, Crane, Dreiser, Roosevelt and Frost.

ENGL 823. Graduate Readings in American Literature III (3). From 1920 to 1970, including Eliot, Stevens, Hemingway, Faulkner, and their contemporaries.

ENGL 825. Theories of Rhetoric Classical (3). An intensive study of the rhetorical theories of classical writers from 466 B.C. to the decline of Roman oratory. Emphasis is on the interrelation of rhetoric with other discipines, such as psychology, politics, and art. Cross-listed: LING 825.

ENGL 826. Theories of Rhetoric Renaissance to Early Modern (3). Cross-listed as COMM 851. 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, Terence, Bulwer, Sholto, Steele, Rush, 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 834. Graduate Studies in Poetry (3). Selected topics in forms, techniques, and history of poetry.
ENGL 840. Graduate Studies in Criticism (3). Selected topics in the theory and practice for literary criticism.

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

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

ENGL 855. Directed Reading (0-3). For graduate students who want to pursue special research in areas not normally covered in course work. Repeatable for credit with departmental consent. Prerequisite: departmental consent.

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

ENGL 870. Master's Essay (1-3).

Environmental Science
Although applications are not being accepted for this program pending restructuring of the program, students will find applicable courses for graduate credit in the departments of Physics, Biology, Chemistry and Geology.

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 210X.

GEOG 530. Geography of Latin America (3). General education further study course (sociology). Physical, political, economic, historical, and human geography of Latin America.

GEOG 542. Geography of Europe (3). General education further study course (sociology). Physical, political, economic, historical, and human geography of Europe.

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

Geology (GEOG)

Graduate Faculty

Professors: William D. Bischoff (dean, Fairmount College of Liberal Arts and Sciences), James N. Gundersen, Salvatore J. Mazzullo

Associate Professors: Collette D. Burke (chairperson), John C. Cries

Assistant Professors: William Parcell, Wan Yang (graduate coordinator)

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

Courses for Graduate/Undergraduate Credit

GEOG 526. Sedimentary Geology (3). 2R; 3L. Origin, classification, primary structures, and physicochemical processes controlling deposition of sedimentary rocks. Reviews diag­

genesis of carbonate rocks and evaporites. Includes a survey of modern and ancient sedimentary depositional environments and petrographic study of sedimentary rocks in thin sections. May require field trips. Prerequisite: GEOG 102 (with lab) or 111.

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

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

GEOG 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 sequential stratigraphy; measurement and correlation of stratigraphic sections in outcrops. Requires field trips. Prerequisites: GEOG 312 and 326.

GEOG 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: GEOG 111 or GEOG 102 or GEOG/GEOL 201.

GEOG 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: GEOG 102 or 111 or GEOG/GEOL 201.

GEOG 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: GEOG 102 or 111 or GEOG/GEOL 201.

GEOG 570. Biogeochemistry (3). 2R; 3L. General education further study course. Systematic survey of major fossil biogeochemical materials, analysis of the origin and evolution of life, and paleoecological interpretation of ancient environments and climates. Includes handlers and binocular microscopic examination of major fossil biogeochemical materials. Includes analysis of fossil data to the solution of problems in biogeochemistry, paleoecology, paleoclimatology, and paleo­
geography. Cited examples from fields of invertebrate, verte­
brate and micropaleontology, and palynology. May require museum and field trips. Prerequisite: GEOG 312.

GEOG 574. Special Studies in Palentology (3). 2R; 3L. General education further study course. A systematic study in selected areas of biogeochemical processes. Content de­


tails, 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 systematics, taxonomy, and biogeological relationships within the selected fields listed. May require field trips. Repeatable for credit to cover all five areas listed.

GEOG 622. Laboratory Methods in Geology (1). Methods of data collection and analysis of geological samples; special instruction in the use of (a) scanning electron microscope; (b) X-ray diffraction; (c) atomic absorption spectrophotometry; (d) cathodoluminescence petrography; and (e) other instrumentation. Repeatable for credit. Prerequisite: GEOG 320, 323, or instructor's consent.

GEOG 623. Geocological Cycling (3). Capstone course. The geochemistry of Earth's materials and the important geoch­


cological processes; cycles operating on and within the atmo­sphere, hydrosphere, and lithosphere through time; anthropo­genic effects on these cycles today. Prerequisites: GEOG 102 (with lab) or GEOG 111 and CHEM 111; or instructor's consent.

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

GEOL 640. Field Geology (3). Capstone course. Field investigation of sedimentary, igneous, and metamorphic rock units and their structures. Includes the application of mapping methods in solving geologic problems. Held at an off-campus field camp for five weeks (including weekends). Preparation of geologic columns, sections, maps, and an accompanying report are due on campus during the sixth week. Prerequisites: GEOL 526, 540, 544, and 552.

GEOL 650. Geohydrology (3). Capstone course. The hydrologic cycle, physical, and chemical properties of water; fluid flow through permeable media; exploration for and evaluation of groundwater; water quality and pollution; and water law. Prerequisites: GEOL 552, MATH 242 and 243; or instructor's consent.

GEOL 675. Geodynamics (3). Capstone course. Principles of plate tectonics, and analysis of the earth's crust: structure, composition, and evolution. Emphasizes the role of plate tectonics in understanding the origin and evolution of the earth's crust. Prerequisites: GEOL 526, 540, 544, or instructor's consent.

GEOL 691. Independent Study in Geology (1-3). Independent study on selected problems in areas of geology: (a) general, (b) mineralogy, (c) petrology, (d) structural, (e) paleontology, (f) economic geology, (g) sedimentology, (h) stratigraphy, (i) geophysics, and (j) petroleum. Requires a written final report. Prerequisite: consent of sponsoring faculty.

GEOL 702. Environmental Science I (5) 2R; 3L. Cross-listed as BIOL 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. Prerequisite: acceptance in the master's program in environmental science or instructor's consent.

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

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

GEOL 706. Environmental Science Internship (3-6). Cross-listed as BIOL 706 and CHEM 706. Students in the master's program in environmental science may gain interdisciplinary skills in environmental science by participating in applied and/or basic research internship projects with local 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: Environmental Science I and II.

GEOL 720. Geochemistry (3). The chemistry of natural aqueous solutions and their interaction with minerals and rocks; thermodynamics and kinetics of reactions; emphasizes application to sedimentary environments and environmental problems. Requires some laboratory work. Prerequisites: GEOL 324 and Chem 112 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 remediation.

GEOL 725. Clays Mineralogy (3). 2R; 3L. An evaluation of compositional and structural elements of clay-mineral families, related phyllosilicates and associated diagenetic-anthropic 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, 532, or equivalents.

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

GEOL 730. Perspectives: Geoscience and the Environment (3). A perspective of global issues of geo-environmental concern with regard to past, present, and potential future. Emphasis on capability of understanding and anticipating the effects of the scientific and social aspects of environmental problems. Prerequisite: GEOL 324, 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 evaluation of sedimentary facies systems and hydrocarbons maturation history. Includes compilation of existing data to determine geologic evolution of basins. Prerequisites: GEOL 682, 684, or instructor's consent.

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

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

GEOL 751. Advanced Geohydrology (3). Integrations of practical and theoretical coverage of subsurface fluid flow as applied to shallow aquifers. Cover the mass transport in both the terrestrial and maritime.
the saturated and vadose zones as well as the occurrence and movement of non-aqueous fluids. Covers groundwater quality, sources of groundwater contamination, retardation of contaminants, retardation and attenuation of dissolved solids and the response of inorganic and organic substances to subsurface aqueous and framework chemistries. Computer simulation models used whenever practical along with detailed analysis of case histories, including those related to environmental geoscience. Prerequisite: GEOL 650, 661, MATH 344, or instructor's consent.

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

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

Courses for Graduate Students Only

GEOL 800. Research in Geology (3). (1-9). Research in special areas of geology: (a) general; (b) mineralogy; (c) petrology; (d) structural; (e) palaeontogic; (f) economic geology; (g) sedimentation; (h) stratigraphy; (i) geochemistry; and (j) 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 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; repeatable for credit when content differs. May require field trips. Prerequisites: graduate standing, instructor's consent, and two years of professional postgraduate practice in geology.

GEOL 821. Special Studies in Geochemistry (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 geology; (e) exogenic geochemical cycling; (f) stable isotope geochemistry. May be repeated for credit to cover all six areas listed. May require some laboratory work. Prerequisites: GEOL 720 or instructor's consent.

GEOL 823. Igneous and Metamorphic Petrology (3). (1-6). Mineral paragenesis, bulk chemical compositions, physical chemical relationships, textures, structures, origins, and classifications of igneous and metamorphic rocks. Thin-section studies to facilitate rock identifications and the determination of petrogenetic relationships. May require field trips. Prerequisite: instructor's consent.

GEOL 826. Sedimentary Petrology (3). (2-6). Detailed study of sedimentary rocks and their origins. Facilities determinations of mineral compositions, textures, structures, fabrics, and petrogenetic relationships by the use of thin sections, peels, and geochronal analyses. May require field trips. Prerequisite: GEOL 526.

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

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

GEOL 852. Field Stratigraphy (3, 2B, 8L). Advanced concepts and principles of stratigraphic analysis and interpretation emphasizing original source and current research investigations. Required field problem and field trips. Prerequisites: GEOL 544 and 552 or instructor's consent.

GEOL 860. Special Topics in Geophysics (3). Systematic study in one or more selected topics of theoretical and applied geophysical techniques. Emphasizes applications of state-of-the-art concepts and principles to problems of regional to global significance. Potential topics include time-variant shape analysis, petrographic image analysis, multi-variable linear and non-linear unmixing, extrapolation and interpolation techniques, quantitative petrographic methods, modeling greenhouse phenomena, and simulations of multi-phase flow in aquifers and reservoirs. Prerequisites: GEOL 691, 761, 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 (graduate coordinator), James C. Duram, Anthony P. Gythiel, Phillip D. Thomas

Associate Professors: John D. Born, Jr., Judith R. Johnson, Willard C. Klunder, Keith H. Pickus (associate dean, Fairmount College of Liberal Arts and Sciences), Craig L. Torbenson

Assistant Professors: Helen Hundley, 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 3.00 grade point average in history. Under unusual circumstances applicants with less than a 3.00 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 nonthesis program, and a program in public history.

Thesis Program

<table>
<thead>
<tr>
<th>Course</th>
<th>Hrs</th>
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<tbody>
<tr>
<td>HIST 725. Advanced Historical Method</td>
<td>3</td>
</tr>
<tr>
<td>HIST 727. Readings in History</td>
<td>3</td>
</tr>
<tr>
<td>HIST 729, 730, 733, 734, Seminars</td>
<td>9</td>
</tr>
<tr>
<td>HIST 800- and 600-level Courses</td>
<td>12</td>
</tr>
<tr>
<td>HIST 801. Thesis Research</td>
<td>2</td>
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</tbody>
</table>
HIST 802, Thesis .....................................................4

Total 36

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

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

Nonthesis Program

Course Hrs.
HIST 725, Advanced Historical Method ..................3
HIST 727, Readings in History .................................6
HIST 729, 730, 733, 734, Seminars ........................12
HIST 500- and 600-level Courses ...........................15
HIST 803*, Internship .............................................1

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
HIST 702, Historical Preservation ..............................3
HIST 703, Museum Administration ............................3
HIST 705, Introduction to Archives ............................3
HIST 704, Interpreting History to the Public ...............3
HIST 705, Advanced Historical Method ......................3
HIST 729, 730, 733, 734, Seminars ........................12
HIST 500- and 600-level Courses ...........................15
HIST 801, Thesis Research ......................................2
HIST 802, Thesis ....................................................2
HIST 803*, Internship .............................................1

Total 35

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

HIST 303, The Age of Jefferson and Jackson (3). General education further study course. This course examines the era of Thomas Jefferson and Andrew Jackson; that is, roughly the period from 1800 to 1850. During that time, the United States experienced tremendous territorial growth, cultural ferment and reform movements; engaged in two major international wars; and a number of Indian conflicts; and moved toward the sectional showdown over slavery that culminated in a bloody Civil War. The focus is on political, social, and military history, as America expanded from the Mississippi River across the North American continent.

HIST 304, Civil War (3). General education further study course. This course examines the origins and history of the bloodiest war this nation has ever fought. Students will study antebellum America, focusing on the sectional differences between North and South, the institution of slavery, and the abolitionist crusade, and the battlesfields of the Civil War.

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

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

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

HIST 511, Women in Early America, 1600-1830 (3).
HIST 512, Women and Reform in America, 1830-present (3).

HIST 515, Economic History of the United States (3). Cross-listed as ECON 627.

HIST 516, History of American Business (3). General education further study course. A history of American business enterprise from colonial times to the present, emphasizing the industrial age since the Civil War, on cases studies of individual firms, on biographies of business people, and on the social and political impact of business.

HIST 517 & HIST 518. Constitutional History of the United States (3 & 3). General education further study courses.

HIST 519: the evolution of the American constitutional system from English and colonial origins through the Civil War.

HIST 520, Social and Intellectual History of the United States (3). The significant social and intellectual currents from the middle of the 19th century to the present, with special reference to the interaction between ideas and social structure.

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

HIST 522. Diplomatic History of the United States Since 1919 (3). General education further study course. This course examines American diplomatic history during the twentieth century; that is, from the era of Theodore Roosevelt and the "Big Stick" through the presidency of Bill Clinton. This was a period when the United States emerged as a major player in global affairs, engaged in numerous military conflicts, waged a cold war against the "evil empire" of the Soviet Union, and ultimately stood alone as the world's only economic and military "superpower."

HIST 523, American Military History (3). General education further study course. This course surveys the American military heritage and its role in shaping the modern United States. Students will study the history of warfare from frontier conflicts during the colonial period through Desert Storm; focusing on the most significant wars and battles, and the evolution of military institutions and their impact on American social, economic, and political traditions.

HIST 528, History of Wichita (3). A history of Wichita, Kansas, 1850-present, emphasizing the lessons of local history for future planning and its importance to an individual citizen's sense of place.


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

HIST 532. Women in America (3). Cross-listed as ETH S 532 and WOM S 532. An in-depth, thematic understanding of the historical experiences of women of color across space and time in U.S. history. Employing a feminist-centered framework of analysis, course probes the intersections of race, class, gender, and sexuality in women's lives.
HIST 533. The American City: from Village to Metropolis (3). A study of urbanization and urban life from colonial times to the present—changing lifestyles and thought patterns, urban architecture, ethnic assimilation, emergence of the suburbs, 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. Examines Southern civilization prior to the American Civil War.

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

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

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

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

HIST 541. Modern France (3). General education further study course. History of the major trends in French history from Napoleon to DeGaulle emphasizing French attempts to adjust politically, socially, economically, and culturally to the changing conditions of modern industrial society.

HIST 545. Neither War Nor Peace: The World Since 1945 (3).

HIST 553. History of Mexico (3). General education further study course. "Poor Mexico: So far from God, so close to the United States." Examines the influences of the Maya, the everyday life of the Aztec, and the destruction wrought when the Spanish invaded the New World. Major figures and the roles they played in Mexican history such as Santa Anna, Benito Juarez, and Porfirio Diaz emerge in this study. Course concludes with the impact of a 2000-mile border with the United States and a brief look at NAFTA.

HIST 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 559. Greek History (3). General education further study course. The Hellenic world from prehistoric times to the end of the Peloponnesian War.

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

HIST 562 & HIST 566. Roman History (3 & 3). General education further study courses. 562: the Roman Republic. 566: the Roman Empire.

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

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

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

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

HIST 576. The Reformation (3). General education further study course. 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, 1789-1870 (3). General education further study course. A focused survey of European social, cultural, and political history from 1789-1870. Among the topics covered are the Enlightenment, the French Revolution, industrialization, romanticism, nationalism, liberalism, socialism, the revolutions of 1848, and the role of women in European society.

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


HIST 588. History of Early Russia (3). General education further study course. Covers the social, political, and cultural history of Kievian 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 599. Experimental Course in History (3). Experimental courses in history are courses designed by the faculty to respond to particular student or faculty interest. They will have the same academic standards and expectations as other 500-level courses offered by the department.

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

HIST 698. Historiography (3). 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...
reservation 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 702. Museum Administration (3). Addresses the many facets of museum administration from a specialist's point of view. Covers collecting, management, law and ethics, and source development. Gives a close view of the operations of American museums. Prerequisite: HIST 701 or instructor's consent.

HIST 703. Museum Administration (3). Introduces the basic knowledge, theory, and related skills of archival administration, including the nature of information, records, and historical documentation; the role of archives in modern society; and issues and relationships that affect archival functions. Covers the theory and skills necessary to understand and apply basic archival functions. Prerequisite: graduate standing and/or instructor's consent.

HIST 705. 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: instructor's consent.

HIST 706. Introduction to Archives (3). Introduces the basic knowledge, theory, and related skills of archival administration, including the nature of information, records, and historical documentation; the role of archives in modern society; and issues and relationships that affect archival functions. Covers the theory and skills necessary to understand and apply basic archival functions. Prerequisite: graduate standing and/or instructor's consent.

HIST 707. Readings in History (3). Readings in ancient, medieval, modern, European, and American field bibliographies. Repeatable for credit. Prerequisite: departmental consent.

HIST 708. Seminar in American History (3). Repeatable for credit. Prerequisite: departmental consent.

HIST 709. Seminar in American History (3). Repeatable for credit. Prerequisite: departmental consent.

HIST 709. Seminar in European History (3). Repeatable for credit. Prerequisite: departmental consent.

HIST 710. Seminar in European History (3). Repeatable for credit. Prerequisite: departmental consent.

HIST 711. Workshop in History (1-3). Repeatable for credit, but does not satisfy requirements for history majors.

HIST 712. Cooperative Education in History (1-2). Graduate history students participate in internship experiences through the Cooperative Education program. Augments HIST 803. Prerequisite: instructor's consent.

Courses for Graduate Students Only

HIST 801. Thesis Research (1-2).

HIST 802. Thesis Research (1-2).

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 an area related to student's MA thesis. Prerequisites: HIST 701 and consent of public history faculty.

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

Hugo Wall School of Urban and Public Affairs

See Urban and Public Affairs, Hugo Wall School of.

Liberal Studies (LAS-I)

Graduate Coordinator: David Soles (philosophy), Advisory Committee: Wilson Baldridge (modern languages), Elisie Shore (psychology), Ron Matson (sociology), Benson Tong (history), Ramona Lien Schwichtenberg (women's studies)

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

Admission Requirements

Applicants must have a bachelor's degree from an accredited institution. Applicants must also have a grade point average of 3.000 or better for the last 60 hours of 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 Advisory Committee may request that the applicant submit Graduate Record Examination scores (verbal and quantitative).

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

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

1. Complete selection of members of the faculty thesis or terminal project committee and inform the graduate coordinator.

2. With the assistance of this committee, prepare a Plan of Study to be approved by the graduate coordinator and the Graduate School.

3. Complete LAS-I 800, Research Goals and Strategies, for 3 credit hours.

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

Degree Requirements

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

1. A minimum of 36 semester hours of credit
2. No more than 12 semester hours from any one department
3. A maximum of 12 hours in a college other than liberal arts and sciences
4. At least 22 of the 36 total hours in courses numbered 700 or above
5. Three of the 36 hours in LAS-I 800, Research Goals and Strategies.
6. A master's thesis for 6 hours' credit or a terminal project for 6 hours' credit.

Graduate Certificate in Great Plains Studies

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

Requirements: Graduate students must meet requirements for admission to the WSU Graduate School in a degree program or nondegree, category A status. They must have a cumulative grade point average of at least 3.000 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 500) with the remaining courses selected from the designated courses: ANTHR 612, ANTHR 613, BIOL 503, BIOL 575, ENGL 860, GEOG 562, GEOG 570, HIST 535Q, and HIST 536.

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

LAS-I 510. Great Plains Seminar (1-9). For students completing
the Great Plains Studies certificate program. Focuses on con-
temporary issues and critical contexts for research. Students
develop research projects appropriate to their classification as
undergraduates or graduates and which reflect their particu-
lar interests in Great Plains Studies. Supplemental resources
provided by faculty through lectures, consultation, course
materials, and mentoring. Prerequisites: 12 hours of Great
Plains Studies course work, including LAS-I 201 and 501;
undergraduates must have senior status or instructor's con-
sent.

LAS-I 600. International Student Exchange Program—Gradu-
ate (9). The International Student Exchange Program
encourages graduate students to attend a university outside
the USA while retaining full-time student status and paying
regular tuition at WSU. A student who wishes to enter this
program must make application. Forms may be obtained from
the WSU office of International Education; after that the
student meets with his/her assigned program advisor to
request academic and course equivalent approval to attend
the proposed university. Upon approval from the student's
WSU program, application may be completed. The enrol-
ment designation documents the status and the tuition pay-
ment of the student enrolled in ISEP for the duration of the res-
idence at the collaborating university. At the end of the ex-
change semester, all course work from the selected univer-
sity will be transferred to WSU. At that time, the transfer
course(s) will replace the LAS-I 1-hour of enrollment with only
the International Student Exchange Program designation re anniating on the transcript.

LAS-I 700. Workshop: Special Topics (1-3). Meets identified
needs of specific audiences.

Courses for Graduate Students Only

LAS-I 800. Research Goals and Strategies (3). Introduces the
methodology and practice of interdisciplinary research. Empha-
sizes the integration of methods native to the humani-
ties, social sciences, and natural sciences. Develops skills
required for the writing of research papers and theses.
Required of all students in the Master of Arts in Liberal
Studies (MALS) program during the first 12 hours of course work.

LAS-I 875. Thesis (1-6). For students who are finishing the
Master of Arts in Liberal Studies. The student writing a thesis
is enrolled in this course until the thesis is completed and all
thesis requirements have been satisfied. Prerequisite consent
of student's degree committee chairperson and instructor.

LAS-I 885. Terminal Project (1-6). For students who are
near the end of their MALS program and involved in a ter-
minal 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 terminal project committee should
be aware that the standards of quality and research expecta-
tions 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, 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 ANTH 667. Studies the basic principles of
English syntax, covering the major facts of English sentence
construction and relating them to linguistic theory. Prerequi-
site: LING 315 or equivalent or departmental consent.

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 departmen-
tal consent.

Group B—Linguistic Study of Specific Languages or Language Groups

Courses for Graduate/Undergraduate Credit

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

LING 506. Russian. Russian Phonology (2). Cross-listed as
RUSS 506.

LING 508. Spanish. Spanish Phonetics (2). Cross-listed as
SPAN 508.

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 lit-
erary and cultural features of the period.

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

Group C—Areas of Contact Between Linguistics and Other Disciplines

Courses for Graduate/Undergraduate Credit

LING 545. Psychology. Psycholinguistics (3). Cross-listed as
PSY 532.

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

LING 727. Teaching English as a Second Language (2-3).
Cross-listed as ENGL 727. Discusses current methods of
teaching English to non-native speakers. Students learn to
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. Repeatable for credit with depart-
mental consent.

Others

Courses for Graduate/Undergraduate Credit

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

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

Mathematics and Statistics

Graduate Faculty
Professors: Andrew Acker, Alexandre Boukhgueim,
Dharam V. Chopra, Alan R. Elcrat, Buma L. Frid-
man (chairperson), John J. Hutchinson, Victor
Isakov, Kirk E. Lancaster, Kenneth G. Miller (grad-
uate coordinator), Hari Mankerjee, Phillip E. Parker,
Ziqi Sun

Associate Professors: Stephen W. Brady, Thomas Delil-
lo, Lop-Hong Ho, Xiaomin Hu, Zhiren Jin, Daowei
Ma

Assistant Professor: Tomasz Hrycak, Chungsheng Mu,
Christian Wolf

The Department of Mathematics and Statistics offers
courses of study leading to the Master of Science
( MS) degree in mathematics and the Doctor of Phi-
losophy (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 the thesis) numbered 700 or above. The 33 hours must include the completion of three two-semester sequences in mathematics and/or statistics numbered 700 or above.

Students who plan to enter the PhD program in applied mathematics should include Real Analysis I and II (MATH 743 and 843) and Numerical Linear Algebra (MATH 751) in their MS program of study.

Generally not more than 6 hours of approved 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 should 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.

Doctor of Philosophy

The primary emphasis in the doctoral program in applied mathematics is on 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 3.00 overall grade point average and a 3.250 grade point average in mathematics and statistics.

Students may satisfy the prerequisites for the initial requirements if they have taken 3 hours of 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 (MATH 757) and Complex and Vector Analysis for Engineers (MATH 758) and mathematics or statistics courses numbered below 700 may not be included. At least 36 hours must be in mathematics and statistics courses numbered above 800 (exclusive of PhD Dissertation [MATH 985]).

Courses used toward a master's degree may be included. A maximum of 36 hours may be transferred from another university at the discretion of the student's committee.

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

A) Complex Analysis I and II (MATH 745 and 945), Partial Differential Equations I and II (MATH 755 and 855), Functional Analysis I and II (MATH 941 and 942), and Numerical Analysis of Partial Differential Equations (MATH 852).

B) Theory of Statistics I and II (STAT 870 and 871), and Theory of Linear Models I and II (STAT 872 and 873).

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

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

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

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

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

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

Dissertation and Final Exam: Upon passing the preliminary exam, the student becomes a candidate for the PhD degree. Soon thereafter the student must submit a 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 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 C or better.

MATH 512. Fundamental Concepts of Algebra (3). Defines group, ring, and field and studies their properties. Prerequisites: MATH 415 and 511 with C or better or departmental consent.

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

MATH 531. Introduction to the History of Mathematics (3). General education issues and 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). Studies the basic integration techniques used in applied mathematics. Includes the standard vector calculus treatment.
of line and surface integrals, Green's Theorem, Stokes' Theorem, and the Divergence Theorem. Also includes the study of improper integrals with application to special functions. Prerequisite: MATH 341 with C or better.

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

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

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

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

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

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

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

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

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

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

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

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

MATH 724. Applied Mathematics (3). A study of mathematical techniques applicable to physics and other sciences. Instructor selects topics such as power series, infinite products, asymptotic expansions, WKBJ method, contour integration and residue methods, integral transforms, Hilbert spaces, special functions, and integral equations. Prerequisite: MATH 555 or instructor consent.

MATH 728. Modern Geometry (3). Examines the fundamental concepts of geometry. Prerequisite: MATH 513 with C or better or departmental consent.

MATH 729. Topology I (3). Studies the results of point set and algebraic topology. Prerequisite: MATH 547 with C or better or departmental consent.

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

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

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

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

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

MATH 765. 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 775. Partial Differential Equations for Engineers (3). Includes Fourier series, the Fourier integral, boundary value problems for the partial differential equations of mathematical physics, Bessel and Legendre functions, and linear systems of ordinary differential equations. Prerequisite: MATH 555 with C or better.

MATH 780. Complex and Vector Analysis for Engineers (3). A survey of some of the mathematical techniques needed in engineering including an introduction to vector analysis, line and surface integrals and complex analysis, contour integrals, and the method of residues. Not applicable toward a graduate degree in mathematics. Prerequisite: MATH 555 with C or better.

Courses for Graduate Students Only

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

MATH 818. Selected Topics in Number Theory (2-3). Repeatable with departmental consent. Prerequisite: departmental consent.

MATH 825. Topology II (3). A continuation of MATH 729. Prerequisite: MATH 725 or equivalent.

MATH 826. Selected Topics in Topology (2-3). Repeatable with departmental consent. Prerequisite: departmental consent.

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

MATH 839. Selected Topics in Foundations of Mathematics (2-3). Repeatable with departmental consent. Prerequisite: departmental consent.

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

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

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

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


MATH 852. Numerical Analysis of Partial Differential Equations (3). Includes analysis of algorithms for the solution
MATH 854. Tensor Analysis with Applications (3). After introducing tensor analysis, considers applications to continuum mechanics, structural analysis, and numerical grid generation. Prerequisite: MATH 545 or 257.


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 859. Selected Topics in Applied Mathematics (2-3). An introduction to applied mathematics. Prerequisite: MATH 545 or 257.

MATH 860. Preseminar (1). Oral presentation of research in areas of interest to the students. Prerequisite: major standing.

MATH 861. Individual Reading (1-3). Repeatable up to a maximum of 6 hours with departmental consent. Prerequisite: departmental consent.

MATH 865. Thesis (1-4). May be repeated to a maximum of 6 hours credit. Prerequisite: departmental consent.

MATH 891-892. Applied Functional Analysis I and II (3-3). Introduces functional analysis and its applications. Prerequisites: MATH 843 and 755 (MATH 755 may be a corequisite).


MATH 892. 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 898 & MATH 899. Selected Advanced Topics in Applied Mathematics (5-5). Topics of current research interest in applied mathematics. Repeatable for credit with departmental consent. Prerequisite: instructor's consent.

MATH 881. Advanced Independent Study in Applied Mathematics (1-3). Arranged individual directed study in an area of applied mathematics. Repeatable to a maximum of 6 hours. Prerequisites: must have passed the PhD qualifying exam and instructor's consent.

MATH 983. 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 360, SOC 301, or PSY 401 with a C or better.

STAT 578. 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 360, SOC 301, or PSY 401 with C or better.

STAT 576. Probability (3). A study of axioms of probability, discrete and continuous random variables, expectation, examples of distribution functions, moment generating functions, and sequences of random variables. Prerequisite: MATH 344 with C or better.

STAT 572. Applied Stochastic Processes (3). Studies random variables, expectation, limit theorems, Markov chains, and stochastic processes. Prerequisite: STAT 571 or 771 with C or better or departmental consent.

STAT 573. 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 574. Analysis of Variance (3). An introduction to experimental design and analysis of data under linear statistical models. Studies single-factor designs, factorial experiments with more than one factor, analysis of covariance, randomized block designs, nested designs, and Latin square designs. Uses computer packages for doing problems. Prerequisites: STAT 571 and MATH 344 and 511 with C or better in each or departmental consent.

STAT 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 C or better or departmental consent.

STAT 774. Statistical Computing I (3). Trains students to use modern statistical software for statistical modeling and writing of technical reports. Examines many of the advanced features of most commercial statistical packages. Students perform computer analyses of real data sets. Prerequisites: STAT 763 and 764 or departmental consent.

STAT 775. Applied Statistical Methods I (3). Covers selected topics from time series analysis including basic characteristics of time series, autocorrelation, stationarity, spectral analysis, linear filtering, ARIMA models, Box-Jenkins forecasting and model identification, classification, and pattern recognition. Prerequisite: STAT 763 with 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 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 870-871. Theory of Statistical Inference I and II (3-3). Covers asymptotic theory of maximum likelihood estimation, sufficiency and completeness, unbiased estimation, elements of decision theory and the Neyman-Pearson theory of testing hypothesis. Prerequisites: MATH 743 and STAT 761 or 771.

STAT 872-873. Theory of Linear Models I and II (3-3). An introduction to the theory of linear models and analysis of variance. Includes multivariate normal distribution, distributions of quadratic forms, general linear models, general linear hypothesis, confidence regions, prediction and tolerance intervals, design models (1-factor and 2-factor), analysis of...
covariance, and components-of-variance models. Prerequisites: MATH 511 and STAT 772.

STAT 875. Design of Experiments (3). A study of basic concepts of experimental design which include completely randomized design, randomized block design, randomization theory, estimation and tests, latin square design, factorial experiments, confounding, split-plot designs, incomplete block designs, and intra- and inter-block information. Prerequisite: STAT 572 or 772.

STAT 876. Nonparametric Methods (3). An introduction to the theory of nonparametric statistics. Includes order statistics; tests based on runs; tests of goodness of fit; rank-order statistics; one-, two-, and k-sample problems; linear rank statistics; measure of association for bivariate samples; and asymptotic efficiency. Prerequisite: STAT 772.

STAT 877. Multivariate Statistical Methods (3). Elementary theory and techniques of analyzing multidimensional data; covers Hotelling's T2, multivariate analysis of variance, principal components analysis, linear discrimination analysis, canonical correlation analysis, and analysis of categorical data. Prerequisites: MATH 511 and STAT 772.

STAT 878. Special Topics (2-3). Repeatable with departmental consent. Prerequisite: departmental consent.

STAT 879. Individual Reading (1-3). Prerequisite: departmental consent.

STAT 881. Statistical Computing II (3). Teaches special graphical 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 graphical techniques. Prerequisites: MATH 751 and STAT 772 with C or better or departmental consent.

STAT 971 & STAT 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 II (3). Arranged individual directed study in an area of probability or statistics. Repeatable to a maximum of 6 hours. Prerequisites: must have passed the PhD qualifying exam and instructor's consent.

STAT 986. PhD Dissertation (1-9). Repeatable to a maximum of 24 hours. Prerequisite: must have passed the PhD preliminary exam.

Modern and Classical Languages and Literatures

Graduate Faculty

Professors: Pedro Bravo-Elizondo, Dieter Saalmann (chairperson), Gary Toops
Associate Professors: Wilson Baldridge, John Koppenhaver, Eunice Myers, Brigitte Roussel
Assistant Professors: Patrick E. Kehoe

French (FREN)

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

Courses for Graduate/Undergraduate Credit

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

FREN 505. French Phonetics (3, 2R); 11. Cross-listed as LING 505. Includes articulatory phonetics, phonemics, sound/symbol correspondences, dialectal and stylistic variations. Required for future French teachers. Prerequisite: any 200-level course or departmental consent.

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 324 or departmental consent.

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

FREN 540. French Literature in English Translation (3). Topic varies. May be used to satisfy the LAS literature requirement and may count toward a French major or minor if readings and papers are done in French.

FREN 541. French Literature of Africa and the Caribbean in 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 LAS literature requirement and may count toward a French major or minor if readings and papers are done in French.

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

FREN 552. Contemporary French Civilization (3). Empha-
sizes the major events, themes, ideas, trends, and move-
ments in French civilization since the Revolution. Interdisci-
plinary course complements French language and litera-
ture courses. Course work and readings are in French. Pre-
requisite/corequisite: FREN 300.

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

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

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

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

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

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

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

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

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

FREN 750. Workshop in French. (2-4). Repeatable for credit. Course for Graduate Students Only

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

German (GERM)

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

Courses for Graduate/Undergraduate Credit
GERM 524. Advanced German Conversation and Composition (3). Prerequisite: GERM 334 or instructor's consent.

GERM 560. Directed Studies in German (1-9). Enrollment in any of the areas listed takes place only upon consultation with the department and agreement with the instructor concerned: (a) introduction to the study of German literature; (b) survey I: from the medieval period through the Age of Goethe; (c) survey II: 19th century to 1945; (d) contemporary literature, including the literatures of East and West Germany, 1949-1989; (e) special topics in literature, repeatable once for credit; (f) special topics in language, repeatable once for credit. Prerequisite: GERM 344 or instructor's consent.

GERM 751. German Civilization since the Middle Ages (3). Survey of German civilization from the Middle Ages to the present. Emphasizes the social, political, historical and intellectual evolution of the German-speaking countries. Special attention paid to the foundation of the German Reich in 1871, Germany, 1949-1989; (c) special topics in literature, repeatable once for credit; (f) special topics in language, repeatable once for credit. Prerequisite: GERM 344 or instructor's consent.

GERM 752. German Literature from the Eighteenth Century to the Present (3). The following offerings available: (a) Genre Studies: novel, novella, prose, and poetry; (b) Literary attenbon paid to the foundation of the German Reich in 1871, Germany, 1949-1989; (c) special topics in literature, repeatable once for credit; (f) special topics in language, repeatable once for credit. Prerequisite: GERM 344 or instructor's consent.

GERM 753. German Civilization since the Middle Ages (3). Survey of German civilization from the Middle Ages to the present. Emphasizes the social, political, historical and intellectual evolution of the German-speaking countries. Special attention paid to the foundation of the German Reich in 1871, Germany, 1949-1989; (c) special topics in literature, repeatable once for credit; (f) special topics in language, repeatable once for credit. Prerequisite: GERM 344 or instructor's consent.

GERM 754. Roman Lyric Poetry (3). The lyric poems of Catullus and Horace emphasizing imagery, symbolism, structure, diction, and meter.

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

GERM 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.

GERM 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.


GERM 653. 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.

GERM 653. Lucretius and Epicureanism (3). Reading of Lucretius' De Rerum Natura and study of Epicureanism, the atomic theory, and Democratian materialism. Considers the place of Lucretius in Latin poetry.

Modern and Classical Languages and Literatures (MCLL)

Course for Graduate/Undergraduate Credit

MCLL 661. Language and Culture (3). Cross-listed as ANTH 651 and LING 651. An introduction to the major themes in the interactions of language and society and language and culture, including ethnography of communication, linguistic relativity and determinism; types of language contact; the linguistic repertoire; and cross-cultural discourse analysis. Content may vary with instructor. Prerequisite: 3 hours of linguistics or MCLL 361 or 6 hours of anthropology.

Russian (RUSS)

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

Courses for Graduate/Undergraduate Credit

RUSS 505. Russian Phonology (3). 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 (intonation konstruktion). Prerequisite: any 200-level course or instructor's consent.

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

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

Spanish (SPAN)

Master of Arts and Areas of Specialization

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

Admission Requirements

Admission to the program requires the completion of 24 hours of undergraduate Spanish, 8 hours of which were on the junior-senior level (12 hours advanced for native speakers), 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 623, 631, or 632—that require research papers. Of these hours, 20 must be in courses numbered 600 or above.

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

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

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

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

Examinations

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

Courses for Graduate/Undergraduate Credit

Upper-division courses are given on a rotating basis. SPAN 300 is a prerequisite for all upper-division literature and civilization courses, unless otherwise indicated. All literature courses, including SPAN 223 and 300, may fulfill the general
SPAN 508. Spanish Phonetics (2). Cross-listed as LING 508. Includes articulatory phonetics, phonemics, sound/symbol correspondences, dialectal and stylistic variations. Required for future Spanish teachers. Prerequisite: any 200-level course or departmental consent.

SPAN 515. Major Topics in Spanish (1-4). Special studies in (a) language, (b) literary reports, (c) commercial Spanish, (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 dialogues. Prerequisite: SPAN 325 or departmental consent.

SPAN 526. Advanced Spanish Grammar and Composition (3). Prerequisite: SPAN 220 or departmental consent.

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

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 (3). Content may vary from semester to semester, including Spanish and/or Latin-American literature. Prerequisite: any 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, 1500-1800. Prerequisite: SPAN 300 or departmental consent.

SPAN 621. Survey of Latin-American Literature (3). Main currents of Latin-American literature, 1800-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 623. Seminar in Spanish (1-5). Seminar in Spanish literature, language, or civilization. Repeatable for credit. Prerequisite: SPAN 300.

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 631. Latin-American Short Story (3). Study of the main writers in contemporary Latin-American literature. Prerequisite: SPAN 300 or departmental consent.

SPAN 635. Introduction to Romance Linguistics (3). Cross-listed as FREN 635 and LING 635. 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 801. Spanish Linguistics (3). Historical and structural study of the Spanish language.


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/colonialism. Emphasizes Spanish colonization. Prerequisite: graduate standing.

SPAN 831. Seminar in Spanish Literature (3). (a) Middle Ages, (b) Renaissance, (c) Golden Age theater, (d) Cervantes, (e) modern novel, (f) Generation of '98, (g) Romanticism, (h) 20th century poetry, (i) criticism, (j) 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: David Soles, Deborah H. Soles
Associate Professors: Robert Feleppa, A.J. Mandt
Assistant Professors: Jeffrey Hersfield, Daniel Russell, William Vanderburgh

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 to the philosophies of Descartes, Spinoza, and Leibnitz.

PHIL 549. Topics in Ancient Philosophy (3). Explores one or more issues in ancient philosophy. Prerequisite: one course in philosophy. The examination of an issue may continue to the end of the term or to the topic of interest, or may be more limited in scope. Some issues treated are: the nature of what is, the concept of the sacred, the meaning of truth, the relation of invariance and process, the problem of universals, and the problem of knowledge.

PHIL 552. History of Philosophy (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 Descartes, Spinoza, and Leibnitz.
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 590. Special Studies (3). Topic for study announced by instructor. Repeatable for credit. Prerequisite: instructor's consent.

PHIL 699. Directed Reading (3). For the student interested in doing independent study and research in a special area of interest. Repeatable for credit. Prerequisite: departmental consent.

**Physics (PHYS)**

Graduate Faculty

Professors: Elizabeth C. Behrman (chairperson), Hussein Hamdeh (graduate coordinator), James C. Ho, Pawan K. Kahol (associate dean, Graduate School)

Associate Professors: Gerald Loper, Syed M. Taher

Assistant Professor: Jason Ferguson

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

Courses for Graduate/Undergraduate Credit

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

PHYS 502. Science Investigations: Physics (3). Introductory course for prospective teachers. Basic physics concepts in mechanics, heat, and electricity and magnetism developed through laboratory investigations. Emphasizes science process skills and the nature of the scientific endeavor. Prerequisite: MATH 111 or equivalent.

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 314.

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

PHYS 555. Modern Optics (3). Geometrical and physical optics, coherence theory, and Fourier optics. Additional topics may include radiation, scattering, optical properties of solids, and optical data processing. Prerequisites: PHYS 214 or 314 and MATH 344.

PHYS 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 214 or 314 and MATH 344 with grades of C or better.

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

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

PHYS 651. Quantum Mechanics (3). Introduction to quantum mechanics, the Schroedinger 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.

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 821. Classical Mechanics (3). The Lagrangian, Hamiltonian, and Hamilton-Jacobi methods of mechanics and an introduction to variational calculus. Applications selected from central forces, rigid bodies, relativity, small oscillations, and continuous media. Prerequisites: PHYS
PHYS 831. Classical Electricity and Magnetism (3). Maxwell's equations with application to static electricity and magnetism. Also may include electromagnetic fields, vector potentials, Greens functions, relativity, optics, and magneto-hydrodynamics. Prerequisites: PHYS 631 and MATH 555.

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

PHYS 881. Solid State Physics (3). A second course in solid state physics for students who have had an introduction to the subject. Transport, dielectric and optical properties, magnetic properties, superconductivity, and applications to semiconductor devices. Prerequisites: MATH 555, PHYS 651 and 681, or departmental consent.

Political Science (POL S)

Graduate Faculty
Associate Professors: James F. Sheffield, Jr. (chairperson)
Assistant Professor: Carolyn Shaw

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

Courses for Graduate/Undergraduate Credit

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

POL S 534. Politics of Modern China (3). General education further study course. Studies China's political system since 1949 in terms of non-Western goals and ideas of social organization. Uses themes of political integration and political development to minimize distortion or cultural bias. Encompasses the roots of the political system, the system as it is now; and the goals China is striving to realize. Some assessment about the future development of communism in China. Includes Chinese communism and the ideological heritage, political culture, political leadership, leadership succession, political participation, the Chinese Communist Party, political communications and socialization, legal developments, policy choices and major events, such as the Hundred Flowers Campaign, Great Leap Forward, and the Proletarian Cultural Revolution.

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

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

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


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


POL S 667. Introduction to Urban Affairs (3). Cross-listed as ECON 667 and SOC 667. An introduction to the study of the metropolis as a social, political and economic system. Prerequisites: ECON 202 and a course in sociology or political science or instructor's consent.

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

POL S 701. Method and Scope of Political Science (3). Emphasizes philosophy of science and methodology (as distinguished from method and technique) and exposure to recent works of methodological import in the various subfields of 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 promotion policies. Emphasizes the laws governing public personnel management and the unique merit, equal employment opportunity, productivity, unionization, and collective bargaining problems found in the public sector.

POL S 750. Workshop. (2-4). Prerequisite: instructor's consent.

POL S 760. Local Government Finance (3). Cross-listed as ECON 760. An analysis of state and local government expenditure and revenue systems with an introduction to state and local financial administration. Prerequisite: ECON 202Q and a course in statistics or 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 835. Seminar in International Relations (3). Analysis of special problems in, and approaches to, the study of international relations. Prerequisite: departmental consent.

POL S 855. Seminar in Public Finance Systems (3). An analytical study of: selected topics in the politics and administration of revenue, expenditure and borrowing policies of governmental organizations. Prerequisite: departmental consent.

POL S 865. 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 865. State and Local Government Finance (3). Cross-listed as ECON 865 and P ADM 865. An analysis of
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 department or committee. To receive credit, a student must obtain departmental approval.

POL S 874. Internship. (0-60). 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.

POL S 876. Thesis (1-3).

Psychology (PSY)

Graduate Faculty

Professors: Charles A. Burdsal, Jr. (chairperson); Peter A. Cohen (dean, College of Health Professions); Darwin Dorr; Gary Greenberg; Charles Hallcomb; Gregory J. Meissner; Elise R. Shore; James J. Snyder; Associate Professors: Alex Chaparro, Rhonda K. Lewis, Louis J. Medverie, Donald W. Nance, Marilyn L. Turner, Robert D. Zettle (graduate coordinator)

Assistant Professors: Paul D. Ackerman, Barbara Chaparro, Darceee L. Dutterer, Daniel S. McConnell

Degrees Offered

The psychology department offers courses of study leading to the Doctor of Philosophy degree. Students may complete requirements for study in human factors psychology, community psychology, or community/clinical psychology.

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 and community) for enrollment the following fall. In addition to the application form, 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 (verbal and quantitative) on the Graduate Record Exam (GRE).

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 around April 1 of each year.

Applications received after a program's deadline may be considered for acceptance contingent upon the numbers of students accepted during the regular application cycle.

Prerequisites

Students must have undergraduate courses in general psychology, psychological statistics, and experimental psychology. Important: All three programs encourage applications from individuals who are not psychology majors or who lack specific prerequisites.

Degree Requirements

Students should be aware of the Graduate School's 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 all programs must complete the following foundation courses: PSY 904, Biological and Philosophical Foundations of Psychology; PSY 905, Cognitive/Learning Foundations of Behavior; PSY 906, Assessment of Personality and Individual Differences; PSY 907, Social/Developmental Foundations of Behavior; PSY 902 and 903, Advanced Research Methods I and II; and PSY 900, Ethics in Psychology.

Students in all programs must successfully complete a predoc toral research program (PSY 901) for a minimum of 10 hours before admission to doctoral candidacy. Students take a qualifying examination upon completion of 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 908. The dissertation ordinarily is a major research project which must be preceded by approval of a formal written proposal by the student's dissertation committee. 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 920, Psychological Principles of Human Factors; PSY 921, Seminar in Human Factors Psychology; PSY 922, Seminar in Software Psychology; PSY 923, Seminar in Motor and Sensory Processes; and PSY 925, Seminar in Perception. To complete the PhD program, a minimum of 90 credit hours (of required courses and electives) is required. Of the electives, 12 credit hours must be courses outside of the Human Factors program. The program has a calculus tool requirement that must be satisfied before a student is admitted to candidacy. Students may satisfy this requirement by (a) satisfactorily completing a college-level calculus course; (b) demonstrating proficiency on an exam; or (c) providing other evidence of such skills. Students must complete a research internship of 3 hours per semester over a period of two semesters for a total of 6 hours and must enroll in Graduate Research each semester for a total of 16-18 credit hours. In addition, sufficient electives must be taken to bring the total number of hours to a minimum of 90.

Community: Students must complete the following: PSY 940, Seminar in Community/Clinical Psychology; PSY 941, Applied Research Methods in Community Settings; PSY 942, Seminar in Community and Organizational Intervention; and PSY 943, Seminar in Prevention. Students are also required to take two of any of the following five courses: PSY 961, Seminar in Cognitive-Behavioral Assessment; PSY 962, Seminar in Cognitive-Behavior Therapy; PSY 964, Development of Abnormal Behavior; PSY 971, Multicultural Issues in Counseling; and PSY 976, Advanced Psychopathology. Students who take PSY 961, or PSY 962 are not required to take the lab associated with the courses. Community students are required to take a minimum of 9 hours of practicum in community psychology. PSY 944. In addition, sufficient electives must be taken to bring the total number of hours to a minimum of 90.

Community/Clinical: This program meets the Association of State and Provincial Psychology Boards/National Register of Health Service Providers in Psychology "Guidelines for Defining 'Doctoral Degree of Psychology.' Therefore, graduates on this designated program who decide to apply for licensing as a psychologist typically will meet the educational requirements for licensing. However, in each jurisdiction, there are/may be additional requirements that must be satisfied. For exact information, please contact the state or provincial licensing board in the jurisdiction in which you plan to apply.

Once licensed, graduates are eligible to apply for credentialing as a Health Service Provider in Psychology. Graduation from a designated program ensures that the program you completed meets the educational requirements for the National Register credential. However, there are additional requirements that must be satisfied prior to being credited by the National Register of Health Service Providers in Psychology. For further information, consult the National Register's web site: http://www.nationalregister.org.
A minimum of 106 total credit hours are required. Students must complete the following: PSY 601, Systems and Theories in Psychology (for graduate credit); PSY 940, Seminar in Community- Clinical Psychology; PSY 960, Seminar in Ethical and Professional Issues in Clinical Psychology; PSY 961, Seminar in Cognitive-Behavioral Assessment; PSY 961L, Cognitive-Behavioral Assessment Lab; PSY 962, Seminar in Cognitive-Behavior Therapy; PSY 962L, Cognitive-Behavior Therapy Lab; PSY 964, Development of Abnormal Behavior; PSY 976, Advanced Psychopathology; and two of the three following courses: PSY 941, Applied Research Methods in Community Settings; PSY 942, Seminar in Community and Organizational Intervention; or PSY 943, Seminar in Prevention. Sufficient electives to be determined in consultation with a faculty advisor must be taken to complete a minimum of 6 additional hours in psychological assessment and 11 additional hours in therapeutic interventions. Community-clinical students are required to take a minimum of 9 hours in clinical practicum (PSY 963) and 3 hours in community practicum (PSY 944). A one-semester internship is also required for all community-clinical students.

Courses for Graduate/Undergraduate Credit

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

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

PSY 514. Psychology of Health and Illness (3). A survey of the relationships between psychology/behavior and physical health and illness. Includes stress and coping, health habits, symptom perception, health care provider-client relationships, hospitalization, and prevention. May include a self-study of life-style and behavior in relation to health and illness. Prerequisite: PSY 111.

PSY 516. Drugs and Human Behavior (3). General education further study course. A survey of the actions and effects of use of legal and illegal psychoactive drugs and of the use of prescription drugs in the treatment of psychological disorders. Details social-cultural, personal, and situational determinants and consequences of drug use and abuse. Prerequisite: PSY 111.

PSY 522. Biological Psychology (3). General education further study course. A review of the biological foundations of behavior. Includes the evolutionary basis of behavior, behavior genetics, a critical analysis of brain-behavior relationships, the role of hormones in behavior, and neurochemical correlates of behavior. Prerequisite: PSY 111.

PSY 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: PSY 324.

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

PSY 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: PSY 111.

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

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

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


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

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

PSY 566. Perspectives on Self-Help Groups (3). Cross-listed as NURS 566 and 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.

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

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

PSY 608. Special Investigation (1-3). Upon consultation with instructor, advanced students with adequate preparation may undertake original research or directed readings in psychological problems. Repeatable for a maximum of 6 credit hours. Requires consultation with and approval by appropriate advisor prior to registration. Prerequisites: 9 hours in psychology and instructor's consent.

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

Courses for Graduate Students Only

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

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

PSY 902. Advanced Research Methods I (4). Part one of a two-course sequence aimed at advanced treatment of sta-
PSY 907. Social and Developmental Foundations of Behavior (3). Examines basic assumptions, theories and methods in social and developmental psychology. Describes and analyzes research concerning the functional significance of social relationships for development and the embeddedness of behavior in social, ecological and cultural contexts, focusing on a number of substantive issues such as person perception and social cognition, affiliation and attachment, socialization and interpersonal interaction, social support and social roles and contexts over the life span. Considered the applications of theories of attribution, attitude change, group functioning and attachment to current social problems. Prerequisite: instructor's consent.


Repeatability: credit. Prerequisite: admission to candidacy and instructor's consent.

PSY 920. Psychological Principles of Human Factors (3). Focuses on the interaction of people with machines and technology in a variety of environments. Provides depth to the topics surveyed in PSY 386 and serves as a means of integrating cognitive, biological, and perceptual psychology in applied settings. Prerequisites: completion of undergraduate course in cognitive psychology or PSY 905; and instructor's consent after interview for doctoral students from other disciplines.

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

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

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

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

PSY 926. Internship in Human Factors Psychology (1-3). Repeatable up to 6 hours. A planned placement experience in an off-campus setting, giving the doctoral human factors psychology student an opportunity to apply the principles of human factors psychology. Prerequisite: advisor's consent.

PSY 940. Seminar in Community-Clinical Psychology (3). Introduces basic historical, conceptual, research, methodological, and ethical issues in community-clinical psychology. Examines the responsibilities and roles of psychologists in the promotion of human functioning. Reviews models and determinants of human behavior from individual, developmental, and ecological/contextual perspectives. Details the reciprocal relationship between research and practical applications of psychological knowledge and the application of that knowledge to human psychosocial problems. Prerequisite: instructor's consent.

PSY 941. Applied Research Methods in Community Settings (3). An examination of research methods which are used in community settings to develop and evaluate programs. Regarding program development, there is discussion of different data collection strategies used to assess community needs. Explores a variety of topics related to program evaluation, including research design issues, developing criteria of merit, and the politicization of program evaluation. Prerequisite: instructor's consent.

PSY 942. Seminar in Community and Organizational Intervention (4, 3R, 3L). Focuses on the development and change of community-based programs and organizations and the implementation and funding of community-based programs. Explores theoretical and conceptual basis of these interventions, drawing on material from community psychology, public health, and applied social psychology. Helps prepare students to become involved as professionals in community-based health or mental health interventions in a variety of roles: as program developers, program writers, program implementers, and program managers. Prerequisite: instructor's consent.

PSY 943. Seminar in Prevention (3). Reviews the historical, theoretical, and empirical bases of prevention psychology. Presents contemporary models of prevention psychology including the ecological, social, and community mental health perspectives. Could include primary prevention, empowerment, community-based prevention, self-help, social policy, and the prevention of psychosocial problems through environmental intervention. Prerequisite: instructor's consent.

PSY 944. Practicum in Community Psychology (1-3). Provides supervised practice working in community-based organizations on such tasks as needs assessment, program development, and program evaluation. Organizational settings may be in the areas of mental health, health, and education. Services may be prevention-oriented. Repeatable for credit. Graded S/U only. Prerequisite: instructor's consent.

PSY 960. Ethical and Professional Issues in Clinical Psychology (3). Focuses on several pertinent professional, legal, ethical, and related issues and concerns that impact the self-identity, credentialing, practice, and status of contemporary clinical psychology. Includes an historical overview of the development of both the discipline and profession of clinical psychology, professional associations that represent each, the credentialing and education/training of clinical psychologists, and how the practice of clinical psychology is governed and impacted by the APA Ethical Code, related laws and associated judicial rulings such as Tarasoff, and professional practice standards.

PSY 961. Seminar in Cognitive-Behavioral Assessment (3). Surveys standards used in evaluating the quality of cog—
cognitive-behavioral assessment techniques and procedures. Provides a description, critical analysis, and conceptualization of how such assessment methods as interviewing, behavioral observations, self-monitoring, self-report inventories, and standardized intelligence testing can be used to meet the goals of a cognitive-behavioral approach to psychological assessment. Prerequisite: instructor's consent.

PSY 66L. Cognitive-Behavioral Assessment Lab. (1). Supplements PSY 661 by providing students with hands-on training and experience with an array of techniques and procedures used in conducting psychological assessments from a cognitive-behavioral perspective. Covers interviewing, self-report inventories, self-monitoring, behavioral observations, and the use of standardized intelligence tests. Graded S/U only. Prerequisites: concurrent enrollment in PSY 661 and instructor's consent.

PSY 962. Seminar in Cognitive-Behavior Therapy (3). 3R; 3L. Reviews the theoretical and empirical support for specific behavior therapy techniques. Approaches may include systematic desensitization, flooding, contingency management techniques and cognitive therapies. Also discusses the interface between behavioral assessment and clinical practice. Prerequisite: instructor's consent.

PSY 962L. Cognitive-Behavioral Therapy Lab. (1). Supplements PSY 962 by providing students with hands-on training and experience with an array of techniques and procedures used in conducting psychological interventions from a cognitive-behavioral perspective. Covers reinforcement procedures, desensitization, cognitive therapy, dialectical behavior therapy, and self-regulation procedures. Graded S/U only. Prerequisites: concurrent enrollment in PSY 962 and instructor's consent.

PSY 963. Practicum in Clinical Psychology (1-3). Gives the student further experience in developing clinical skills. Students are supervised in their clinical work with individual clients seen through the department clinic, and/or other appropriate sites. Graded S/U only. May be repeated for credit. Prerequisite: instructor's consent.

PSY 964. Development of Abnormal Behavior (3). Considers the descriptive characteristics of abnormal behavior; a developmental perspective. Considers the ecological, social-environmental, personal, and genetic-biological contexts and causes of such behavior. Discusses implications for preventative and clinical interventions. Prerequisite: instructor's consent.

PSY 965. Special Issues in Psychological Assessment. (1-4). Covers contemporary and developing approaches to psychological assessment identified by the department. Course procedures and content vary according to topic. Repeatable. Prerequisite: instructor or departmental consent.

PSY 966. Special Issues in Psychotherapeutic Interventions. (1-4). Covers contemporary and developing approaches to psychotherapy identified by the department. Course procedures and content vary according to topic. Repeatable. Prerequisite: instructor or departmental consent.

PSY 967. Individual Intelligence Assessment (3). This course is cross-listed as CESP 855. Use of individual tests for assessment of intelligence. Examines the nature of intelligence: theory, administration, and interpretation of selected individual intelligence tests and critical issues related to the assessment of intelligence. Includes case simulation and practice activities. Prerequisites: CESP 822 and instructor's consent.

PSY 968. Child Abuse and Neglect (1). This course is cross-listed as CESP 707. 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. Prerequisite: consent of instructor.

PSY 969. Counselling Theory (3). This course is cross-listed as CESP 803. A study of selected theories of counseling. Prerequisite: admission to counseling or school psychology program or instructor's consent.

PSY 971. Multicultural Issues in Counselling (3). This course is cross-listed as CESP 821. Students acquire knowledge and skills that enable them to offer help to individuals in a multicultural environment. Focuses include developing a sense of the student's own cultural identity; increasing sensitivity to cultural differences in helping attitudes and behaviors, and understanding how the potential sources of cultural misunderstandings, biases, and prejudices may affect their counseling effectiveness. Prerequisites: CESP 701, 803 or 804, or instructor's consent.

PSY 972. Techniques of Counselling (3). This course is cross-listed as CESP 824. Examines and teaches techniques of counseling through simulated counseling situations and extensive examination of counseling case studies. Prerequisites: CESP 728, 821, 822, and counseling major or departmental consent.

PSY 973. Group Counseling Techniques (3). This course is cross-listed as CESP 825. Examines different kinds of groups, group selection, interaction, and communication patterns in groups, and issues to be addressed in group settings. Prerequisites: CESP 728, 803 (or concurrent enrollment), 804; and counseling major or departmental consent.

PSY 974. Family Issues in Counselling (2). This course is cross-listed as CESP 837. Teaches skills for family counseling, group selection, and communication patterns in groups, and issues to be addressed in group settings. Prerequisites: CESP 728, 803 (or concurrent enrollment), 804; and counseling major or departmental consent.

PSY 975. Seminar in Psychotherapy (3). Provides an in-depth description and critical analysis of various theories and methods of psychotherapy, an examination of the efficacy of these therapeutic approaches, and a survey of common issues in psychotherapy, such as process and outcome, and client and therapist variables in the therapeutic process. Prerequisites: PSY 111 and instructor's consent.

PSY 976. Advanced Psychopathology (3). An overview of major categories of psychopathology consistent with the most recent edition of the Diagnostic and Statistical Manual of Mental Disorders. Reviews descriptive features of each diagnostic category and information on the clinical course and epidemiology. Examines differing definitions of psychopathology and etiologic approaches to the study of psychopathology. Prerequisite: instructor's consent.

PSY 977. Internship in Clinical Psychology (1-3). Graded SU only. A planned one-year supervised clinical internship at an off-campus site approved by APF/IC for training in clinical psychology. Gives the student an opportunity to further develop and employ clinical skills in an applied supervised training setting. Prerequisite: advisor's consent.

PSY 990. Seminar in Current Developments (3). Intensive study of current issues, techniques, research, and applications. Repeatable for different topics for a maximum of 6 hours. Prerequisite: instructor's consent.

Public Administration
See Urban and Public Affairs, Hugo Wall School of.

Religion (REL)
Graduate Faculty
Associate Professor: Stuart Lasine

Although there is no graduate program in religion, the following courses may be taken for graduate credit.

Courses for Graduate/Undergraduate Credit
REL 790. Independent Study (1-3). For the student who is capable of doing graduate work in a specialized area of the study of religion not formally offered by the department. Repeatable for credit. Prerequisite: departmental consent.

Russian
See Modern and Classical Languages and Literatures.

Social Work (SC WK)
Graduate Faculty
Assistant Professor: Elvin Barrett, Brien Bolin (graduate coordinator), Linnea Flynn GlenMaye, Joanne Levine, Cathleen A. Lewandowski (director), Curtis Proctor

Master of Social Work
The Master of Social Work (MSW) degree program has an emphasis in advanced generalist practice and is designed for people who are interested in entering the social work profession at an advanced professional level.

MSW Program Mission
The mission of the MSW program at Wichita State University is to prepare its graduates to be
autonomous advanced generalist social work practitioners within complex, diverse, and ever-changing metropolitan environments. Emphasis is placed on developing knowledge and skills for ethical, culturally competent and socially just and empowering interventions on all practice levels.

Accreditation Status
The MSW program is accredited through June 2007 by the Council on Social Work Education (CSWE).

Licensure
Graduates of the MSW program are eligible for licensure. Contact the School of Social Work or the Behavioral Sciences Regulatory Board for further information.

Admission Requirements
Admission to the MSW program requires that the applicant:
1. Have a baccalaureate degree from an accredited four-year institution(s) acceptable to the Graduate School.
2. Have evidence of a strong liberal arts background from an accredited college or university prior to enrollment. Applicants should be knowledgeable about diverse cultures; social problems; social conditions; and the social, psychological, and biological determinants of human behavior. Previous 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 3.0 or better.
4. Have completed applications (to both the MSW program and the Graduate School) postmarked no later than January 15 for the following fall semester.

Non-academic Factors for Admission
Non-academic considerations include experiences in providing social services, references, and personal narratives. Measures of volunteer as well as paid experience in social services contribute to candidate rankings. References are primarily asked to provide an indication of the applicant's suitability for entrance into the profession. Indicators of readiness for graduate study 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 January 15 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 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 — 26 credits comprising the advanced generalist concentration curriculum and 3 credit hours for a bridge course to be taken during the summer before beginning the core curriculum. Students enrolling in the bridge course must be admitted to the Graduate School prior to course enrollment. Undergraduate students completing their bachelor's degree during the summer must be enrolled in the course under the Graduate School Senior Rule option.

Full- and Part-Time Enrollment Options
Applicants choose to apply for either the full-time or the part-time track. Applicants admitted into the full-time program enroll in four full-time semesters, consisting of 12-16 hours a semester, not counting summer. Applicants admitted for Advanced Standing enrollment in two full-time semesters plus one 3-credit-hour summer bridge course. Applicants admitted into the part-time program must enroll in 6-9 credit hours a semester, with the exception of summer semester, and complete the degree within four years or for Advanced Standing students, two years. Courses are sequential and are generally offered once a year. Applicants should contact the School of Social Work for further information on the part-time curriculum plan.

Field Practicum Requirements
In addition to classroom work, students enroll in field practicum. The foundation year practicum consists of 450 clock hours over the course of two semesters. The advanced generalist concentration practicum consists of 700 clock hours over the course of two semesters, for a total of 1,180 clock hours. The MSW program's Field Practicum Director makes arrangements for field practicum placements.

Transfer of Academic Credit
Transfer of credits from another MSW program will be considered on a case-by-case basis. As a general rule, only courses taken in a Council on Social Work Education accredited Master of Social Work program will be eligible for transfer of credits. The applicants must have received a B or better in the course(s) being considered for transfer. In most instances, transfer of credits will only be granted for first-year foundation courses or electives, if applicable to Wichita State University's advanced generalist social work program. Students may transfer up to 6 elective hours from other graduate programs in related fields, if applicable to the advanced generalist specialization and/or content is comparable to WSU's elective courses outside the Social Work Program. Transfer of elective credit hours must be approved by the assigned advisor and the director of the MSW program at the time of admission to the MSW program.

Life Experience
In accordance with Council on Social Work Education accreditation requirements, academic credit will not be given for life experience or work experience in course work or field practicum.

There will be no credit towards the Social Work Degree for prior life or work experiences.

Nondegree Students
Students wishing to enroll in graduate social work courses for continuing education may do so on a space available basis. Nondegree students who then decide to pursue an MSW degree at Wichita State University must go through the normal admission procedures. A maximum of 12 credit hours taken prior to admission to the MSW program can be applied toward the MSW program. Nondegree seeking students who do not have a BSW degree from a CSWE accredited program may not enroll in social work practice classes. Only students admitted into the MSW program may enroll in field practicum courses.

Degree Requirements
The curriculum for the regular MSW program consists of 56 credit hours — 42 credits of classroom work and 14 credits of supervised practicum. The curriculum for the advanced standing program consists of 32 credit hours — 24 credits of classroom work and 8 credits of supervised practicum. Students must maintain a 3.0 grade point average; a grade of C is the minimum passing grade.

Courses for Graduate/Undergraduate 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 performances of social welfare policy and service programs. Examines voluntary and proprietary systems in the development of knowledge and skills for the engagement of complex community resources, the promotion of service innovations, and the shaping of decisions in the arenas of public policy. Emphasizes diverse populations
in metropolitan environments. Prerequisite: POL S 121 or HIST 132, SCWK 300.

SCWK 502. Social Work Interviewing: Strategies and Techniques (3). 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 focusing on experiential learning. Required for social work majors.

SCWK 512. Social Work Research I (3). This course provides an introduction to methods of social work research. Examines both qualitative and quantitative methodologies. Students apply these methods to social work practice. (2) Both qualitative and quantitative methodologies are examined and (3) the foundation for advanced social work research.

SCWK 541. Women, Children, and Poverty (3). General education issues and perspectives course. 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 is given to poverty among Kansas families. Prerequisite: 6 hours of social science.

SCWK 551. Independent Studies (1-3). Individual projects for social work students who are capable of doing independent work in areas of special interest. Repeatable for credit not to exceed 6 hours. Prerequisite: Instructor's consent.

SCWK 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 these entities to beginning professional social work practice. Prerequisite: School approved human development course (2 or).

SCWK 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/minority relations, organizational dynamics, community structures, and the effects of discriminatory structures and practices on minority groups and communities in our society. Prerequisite: SCWK 560.

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


SCWK 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 SCWK 601 except by program consent. Prerequisites: SCWK 502 and program consent.

SCWK 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 SCWK 601. Prerequisite: SCWK 601.

SCWK 604. Advanced Social Work Research (A). A critical look at practice, services, and professional issues, using social work research. Analyzes current social work practice as well as future directions. Prerequisite: SCWK 512 or an approved research methods course.

SCWK 605. Practicum II (2). Placement in community social welfare agencies for supervised direct service assignments emphasizing formulation of appropriate goals. Includes the selection of various social work roles and in-depth development of techniques and skills common to practice in the social welfare field. Prerequisite: SCWK 560.

SCWK 610. Topics in Social Work (1-3). Selected topics in policy, research, and human behavior in the social environment within a selected field of social welfare. Covers specific topics identified by the program in consultation with majors, groups of community practitioners, and area service institutions. Repeatable. Prerequisite: Instructor or program consent.

SCWK 700. Foundations of Generalist Practice I (3). Provides foundation content in the knowledge and skills for empowerment-based generalist social work practice with individuals, families, groups, organizations, and communities. Includes professional role development, communication and interviewing theory, skill development in social work assessment, intervention, and evaluation method. Corequisite: SCWK 720.

SCWK 710. Social Work Research (3). Emphasizes developing generalist knowledge and skill at the group, organizational, community, and societal levels. Emphasizes material on group process and organizational and community leadership in the development of a problem-solving model for work with systems of all sizes. Prerequisite: SCWK 700 or instructor's consent.

SCWK 711. Social Policy and Legislation (1). Provides an introduction to the legislative process, focusing on the development of and the debate over social welfare, and social work legislation. Prerequisite: SCWK 700 or instructor's consent.

SCWK 712. Macro Human Behavior and the Social Environment (3). Prerequisite: Instructor's consent. Provides an introduction to the legislative process, focusing on the development of and the debate over social welfare, and social work legislation. Prerequisite: SCWK 700 or instructor's consent.

SCWK 716. 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 programs will enable the development and use of frameworks for analyzing social policies and creating programs in light of the mission of the social work profession. The comparison of these structures and programs will enable the development and use of frameworks for analyzing social policies and creating programs in light of the mission of the social work profession. The historical, economic, and political factors which impinge on policy in the context of social welfare institutions will be considered. Prerequisite: SCWK 716.
SC WK 721. Field Practicum II (3). Requires placement in a social welfare agency for supervised periods of observation and direct service assignments emphasizing development of basic practice knowledge and skills. Provides an understanding of the social welfare agency and its role in the community service network. Corequisite: SC WK 700.

SC WK 750. Graduate Topics in Social Work (1-3). Specialized instruction using a variable format in a social welfare relevant subject.

SC WK 731. Social Work and the Law (3). Students will develop and integrate, advanced generalist framework for interdisciplinary, advanced generalist practice within a legal setting. Students will develop a basic knowledge of the law, the roles social workers play within the legal system and the issue of crime and social justice with respect to race and ethnicity. Students will develop an understanding of how the law shapes and regulates social work practice and the actions of social workers and their clients alike. As legal and social problems are often interdependent, students will develop skill in communicating with attorneys to enhance their effectiveness in resolving clients' problems.

SC WK 756. Social Work Workshops (1-5). Selected topics in practice, policy, research, and human behavior in the social environment within a selected field of social welfare. Covers specific topics identified by the program in consultation with majors, groups of community practitioners, and agency service institutions. Repeatable for up to a total of 6 hours of credit.

SC WK 751. Fundamentals of Social Work Research (3). Provides an introduction to the components of quantitative research design and how research is designed to conduct studies which seek to improve social work practice. Introduces the basic concepts of the social work research process as well as the methods that are employed. Students develop a framework for critically evaluating 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.

SC WK 799. Directed Study (1-3). Individual study with a focus developed in collaboration with a departmental faculty member. Allows students to pursue and area of special interest. Repeatable for up to 6 credit hours. Prerequisite: departmental consent.

Courses for Graduate Students Only

SC WK 810. Cultural Competency for Advanced Generalist Practice (3). Examines the impact of culture, race, and ethnicity on client/worker interactions. Presents practice theories and interventions for culturally competent advanced generalist practice with different populations. Emphasizes experiential learning of cultural competence skills to provide services cross-culturally. 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 applied 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 832. Social Work Practice in the Schools (3). Conveys an understanding of systematic intervention in schools using various intervention modalities. Focuses on the roles of social workers in schools, including provision of direct service, consultation, advocacy, program development, and evaluation, as well as liaison functions with families and community systems. Students integrate an understanding of child development, familial, and school crises that affect child development and the importance of the social worker/parent relationship.

SC WK 833. Family Therapy (3). Examines theoretical and practical approaches to social work assessment and intervention with families. Reviews and evaluates various approaches to family therapy, and focuses on assessment and intervention with different types of families (e.g., differing levels of functioning, ethnicity, vulnerability, and oppression). Examines theoretical constructs, strategies for change, and use in actual social work intervention for such models of family therapy as structural, Bowenian, strategic, experiential, cognitive/behavioral, psychodynamic, and solution-focused.

SC WK 851. Applied Social Work Research (3). Prepares students to be ethical practitioners who assess the benefits of social work interventions on an ongoing basis. Because of the importance of evaluation in social work, students develop the research skills needed to evaluate their own practice, conduct program evaluations, use the computer as a research tool, and interpret descriptive and inferential statistics. Prerequisite: SC WK 751 or program consent.

SC WK 860. Integrative Seminar for Advanced Generalist Practice (3). Integrates social work theories, knowledge, and skills to develop each student's framework for advanced generalist practice. Emphasizes applying social work theories in practice with populations at risk of violence. Develops skills in applying a wide array of social work roles within a multi-level practice environment. Prerequisite: SC WK 816.

SC WK 867. Clinical Assessment for Advanced Generalist Practice (3). Uses a biopsychosocial perspective to understand problematic patterns of functioning identified as diagnoses in the DSM-IV. Students critically examine the DSM-IV as a basis for social work assessment and learn its use within an advanced generalist practice perspective. Prerequisite: program consent.

Sociology (SOC)

Graduate Faculty
Associate Professors: Kathleen O'Fallon Perez, Ronald R. Matson (chairperson), David W. Wright (graduate coordinator)
Assistant Professors: Twyla J. Hill, Charles S. Koebel, 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 an introductory sociology course, one descriptive and inferential statistics course, two research methods courses, and one theory course (similar courses in other fields of study may be substituted at the discretion of the graduate coordinator); 2) three letters of reference from professors who are familiar with the student's undergraduate course work; and 3) a typed, double-spaced statement of purpose (approximately 500 words) articulating the student's area of research interests and academic/career goals.

Degree Requirements
SC WK 502. Social Work Interviewing: Strategies and Techniques (3). 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, interviewing, recording, and reporting. Course is didactic as well as interactive and includes an integrated laboratory component focusing experiential learning. Required for social work majors.

SC WK 502. Social Work Research I (3). This course provides an introduction to methods of social work research. Examines both qualitative and quantitative methodologies. Students apply these methods to social work practice. (2) Both qualitative and quantitative methodologies are examined and (3) the foundation for advanced social work research.

SC WK 541. Women, Children, and Poverty (3). General education issues and perspectives course. 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 is given to poverty among Kansas families. Prerequisite: 6 hours of social science.

SC WK 551. Independent Studies (1-3). Individual projects for social work students who are capable of doing independent work in areas of special interest. Repeatable for credit not to exceed 6 hours. Prerequisite: instructor's consent.

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 these entities to beginning professional social work practice. Prerequisite: School approved human diversity course (2 cr).

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/minority relations, organizational dynamics, community structures, and the effects of discriminatory structures and practices on minority groups and communities in our society. Prerequisite: SC WK 560.

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 experience with self-help groups on such topics as addiction, cancer and other illnesses, eating disorders, bereavement, mental illness, and parenting.


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 603 except by program consent. Prerequisites: SC WK 502 and program consent.

SC WK 604. Advanced Social Work Research I (3). A critical look at practice, services, and professional issues, using social work research. Analyzes current social work practice as well as future directions. Prerequisite: SC WK 512 or an approved research methods course.

SC WK 605. Practicum I (3). Placement in community social welfare agencies for supervised direct service assignments emphasizing formulation of appropriate goals. Includes the selection of various social work roles and in-depth development of techniques and skills common to practice in the social welfare field. Prerequisite: SC WK 602.

SC WK 610. Topics in Social Work (1-3). Selected topics in practice, policy, research, and human behavior in the social environment within a selected field of social welfare. Covers specific topics identified by the program in consultation with majors, groups of community practitioners, and area service institutions. Repeatable. Prerequisite: instructor or program consent.

SC WK 700. Foundations of Generalist Practice I (3). Provides foundation content in the knowledge and skills for empowerment-based generalist social work practice with individuals, families, groups, organizations, and communities. Includes professional role development, communication and interviewing theory, skill development in social work assessment, intervention, and evaluation methods. Corequisite: SC WK 720.

SC WK 702. Foundations of Generalist Practice II (3). Provides continued social work practice foundation content emphasizing developing generalist knowledge and skills at the group, organizational, community, and societal levels. Emphasizes material on group process and organizational and community leadership in the development of a problem-solving model for work with systems of all sizes. Prerequisite: SC WK 700 or instructor's consent.

SC WK 710. Micro Human Behavior and the Social Environment (3). Provides theories and knowledge of human biol-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 712. Macro Human Behavior and the Social Environment (3). Provides theories and content on organizational and community structure, dynamics and change, social movements, large groups, and structural oppression, and provides a theory base for the contextualization of social work practice within diverse environments and macro systems. Emphasizes understanding the needs of minority communities and on understanding change and empowerment strategies which further social justice in communities and organizations. Prerequisite: SC WK 710 or instructor's consent.

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 contest for understanding contemporary social policy issues. Provides 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 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 717. 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. Prerequisite: SC WK 716.

SC WK 720. Field Practicum I (3). Placement in community...
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 554 or departmental consent.

SOC 845. Seminar in Sociological Theory (3). Usually offered spring semester only. Examines classical and contemporary sociological theories and focuses on including the application of such theories in students’ thesis and nonthesis projects. Prerequisite: SOC 545 or departmental consent.

SOC 847. Seminar in Recent Developments in Sociology (3). Major issues, new theories, new techniques of research, new areas of research, and new applications. Repeatable for credit but not to exceed 6 hours. Prerequisites: 15 hours of sociology and departmental consent.

SOC 851. Directed Project (1-3). A project conducted under the supervision of an academic advisor for the non-thesis option. Requires the completion of a written report and an oral presentation of the research to the faculty. Prerequisite: consent of academic advisor.

SOC 860. Proseminar—Teaching Sociology (1). Usually offered fall semester only. Examines the academic roles of sociologists. Prerequisite: departmental consent.

SOC 870. Independent Reading, (2-3). Advanced systematic reading in a topical area under the supervision of a member of the graduate faculty. Repeatable for credit but not to exceed 6 hours. Prerequisite: departmental consent.

SOC 875-876. Thesis. (3-6).

Spanish
See Modern and Classical Languages and Literatures.

Urban and Public Affairs, Hugo Wall School of

The Hugo Wall School of Urban and Public Affairs is committed to enhancing the quality of public life through high-quality graduate instruction, excellence in applied research, and responsive community service. This focus results not only in an excellent graduate education for students, but also allows a special connection with the community's needs through research and service. By integrating teaching, research, and service, the school makes a distinctive contribution to Wichita State University’s long-standing commitment 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.

Financial Assistance

The school has two forms of financial aid available to provide students with financial assistance, as well as an opportunity to be directly involved with research and service projects. Financial aid in the form of graduate assistantships and fellowships is awarded competitively on the recommendation of the faculty in the Hugo Wall School of Urban and Public Affairs. Graduate assistants aid faculty in the Hugo Wall School in instruction, as well as work directly with faculty and professional staff on research and community service projects through the Center for Urban Studies and the Kansas Public Finance Center. Graduate assistants work 20 hours per week with faculty and staff in the school's teaching, research, and public service activities.

The Hugo Wall School has four endowed fellowships available for financial assistance to qualifying graduate students enrolled in the Master of Public Administration degree. These fellowships—the Hugo Wall, George Pyle, Mike Hill, and George Van Riper—are awarded on a competitive basis to students with exemplary records and specific career interests in the field of public administration.

Public Administration (P ADM)

Graduate Faculty

Distinguished Professor: W. Bartley Hildreth (Regents Distinguished Professor of Public Finance)

Professors: H. Edward Fientje (director, Hugo Wall School and Center for Urban Studies), Mark A. Glaser, Joseph P. Piscitello, Samuel J. Yeager (graduate coordinator)

Associate Professors: Nancy McCarthy Snyder, John D. Wang

Master of Public Administration

The Master of Public Administration (MPA) degree program, with instruction in public management, public finance, and public policy, prepares students for positions of leadership in public and nonprofit organizations. The degree is structured to respond to the unique student body of an urban university. The Master of Public Administration program is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA).

The Master of Public Administration (MPA) degree draws upon the methods and perspectives of the social and behavioral sciences, economics, and the humanities. The link between these disciplines and the challenges of public management are emphasized through the use of practitioners in the classroom, policy-relevant research assignments, public affairs seminars, and internships. Teaching faculty, with significant professional experience in state and local government, are engaged in cutting-edge research relevant to public and nonprofit organizations in Kansas. This experience allows faculty to bring relevant perspectives on public management into the classroom.

Graduates of the MPA degree program now hold positions of responsibility in state and local government and in nonprofit agencies throughout the United States and in other countries. Graduates serve as city managers and department heads, program managers, finance directors, budget analysts, management analysts, and agency planners. Although the majority are employed in public service, some graduates of the program have taken positions in the private sector, while 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 2.750 based upon the last 60 hours of course work (or nearest semester or term break to this) including any post-bachelor's graduate work. 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 822, Quantitative Methods for Public Sector Professionals
P ADM 855, State and Local Government Finance
P ADM 895, Public Decision Making

Areas of Emphasis. In addition to the core, students develop an area of emphasis approved by an advisor.
Students may select areas that fit their career interests. Common areas include state and local government management, financial management, and policy analysis.

Internships

Internships are an important part of the MPA program. Pre-service students are encouraged to take an internship which must last at least nine months. Internship (P ADM 690) carries 3 hours of credit and includes attendance at periodic seminars. Intern positions are remunerative and are awarded on a competitive basis. Although placement cannot be guaranteed, the public administration program has an excellent placement record.

Graduate Certificates

Graduate Certificate in Economic Development

This graduate certificate program offers advanced study in economic development by state and local governments. The program enhances students' career opportunities and provides state and local practitioners in economic development an avenue to improve their skills. The four courses include: P ADM 650, Planning Process; RE 619, Urban Land Development; P ADM 688 or ECON 688, Urban Economics; and P ADM 760, State and Local Economic Development.

Graduate Certificate in Public Finance

This graduate certificate program offers advanced study in public finance. The program enhances students' career opportunities and provides public finance practitioners an avenue to improve their skills. The four-course sequence includes: P ADM 650, Planning Process; RE 619, Urban Land Development; P ADM 688 or ECON 688, Urban Economics; and P ADM 760, State and Local Economic Development.

Successful completion of these certificate requirements is noted on the student's University transcript, and a Graduate Certificate is awarded by Wichita State University. Application for the certificate program requires completion of a bachelor's degree, core prerequisites, and admission to the Graduate School.

Courses for Graduate/Undergraduate Credit

P ADM 501. Integrity in Public Service (3). Cross-listed as CJ 501, GERON 502, and ETH S 501. Explores the student to basic principles of personal and professional integrity and how those principles apply to their daily life as a member of the community and as an employee of a government or social service agency. Emphasizes a case study method, utilizing 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.

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 elected 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 585. Management in the Nonprofit Sector (3). Examines the management and governance of nonprofit organizations. Includes strategic planning, marketing and fund-raising, management of financial and human resources (including volunteers), governing structures, and the role of boards.


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 625. Computer Applications for Public Policy (3). Cross-listed as CJ 625, ETH S 625, and GERON 625. Familiarizes students with major types of software applications for microcomputers and their use in public policy analysis.

P ADM 651. Dispute Resolution (3). Cross-listed as CJ 651, ETH S 651, and GERON 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. Analyzes case studies.

P ADM 688. Urban Economics (3). Cross-listed as ECON 688. A survey of the economic structure and problems of urban areas on both the microeconomic and macroeconomic levels. Stresses the application of regional economic analysis in the study of urban areas as economic regions. Prerequisites: ECON 201 and 202, or ECON 800, and junior standing.

P ADM 700. Urban Affairs (3). A study of the policy issues faced by local government in an urban setting from a multidisciplinary point of view.

P ADM 702. Research Methods (3). Cross-listed as CJ 702, ETH S 702, GERON 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. Emphasizes the laws governing public personnel management and on the unique merit, equal employment opportunity, productivity, unionization, and collective bargaining problems faced 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 785. 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 768. State and Local Economic Development (3).
Explores the roles of state and local governments in economic development through the use of case studies. Examines financing in economic development from the perspectives of public purpose and community objectives.

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 201 and 202 or instructor's consent.

P ADM 775. State and Local Government Law (3). Explores students to the legal principles which undergird the foundation of governmental operation and administration.

P ADM 785. Public Works Administration (3). Introduces public works administration and management. Includes discussion of public works professionals; public works organizations and institutions; infrastructure planning, policy, and project analysis, procurement, purchasing, and contract administration; geographic information systems; and transportation, water, waste water, and surface water system construction, maintenance, and replacement.

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 GERON 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. Prerequisites: either CJ 702, GERON 702, or P ADM 702.

P ADM 835. 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. Examines 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 ECON 865 and POL S 865. Analyzes state and local government expenditure and revenue systems; introduces state and local financial administration. Prerequisites: P ADM 765 or instructor's consent.

P ADM 866. Public Financial Management (3). This course is cross-listed with FIN 866. Deals with selected aspects of state and local government financial management. Introduces fund accounting, costing of government services, capital budgeting, debt management, and asset management. Prerequisite: 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 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 GERON 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, 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 Koncz
Associate Professors: Deborah Gordon, Ramona Liera-Schwichtenberg (Chairperson), Chinwe Okafor
Assistant Professor: Doris Chang

Students may earn a master's degree in several areas with an emphasis in women's studies. These include curriculum and instruction; counseling, educational, and school psychology; sociology; and cross-cultural communications. Women's studies may be included as one of two or three areas of interest under the MA degree in liberal studies, an individually designed, interdisciplinary graduate program (described in the Fairmount College of Liberal Arts and Sciences, Liberal Studies section of the Graduate Catalog). In other cases, such as the community/clinical program in psychology, students may orient course electives and thesis research to accommodate an interest in women's studies. The following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit

WOM S 512. Women and Reform in America, 1830-Present (3). General education further study course. Examines the history of women in the U.S., 1830-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 male and female roles, the source of changes in these roles, the consequent ambiguities and conflicts. Prerequisite: SOC 111.

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 historical and social value to the culture.

WOM S 522. Contemporary Women's Art (3). Examines art by women in the contemporary world. Emphasizes 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 523. Feminist Film Criticism (3). Applies critical methods of analysis from the field of feminist film studies (such as psychoanalysis, ideology critique, close textual analysis, narrative, and genre criticism) to the representation of women in film. Emphasizes historical development
WOM S 532. Women in Ethnic America (3). Cross-listed as ETH S 532 and HIST 532. An in-depth, thematic understanding of the historical experiences of women of color across space and time in U.S. history. Employing a female-centered framework of analysis, course probes the intersections of race, class, gender, and sexuality in women's lives.

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 534. Psychology of Women (3). Cross-listed as PSY 534.

WOM S 535. Literary Images of Women: Diverse Voices (3). Cross-listed as ENGL 535. Explores literature written in English by women of diverse ethnic, racial, class, and other backgrounds as well as of varying sexual orientations, ages, and degrees of physical ability. Analyzes materials as literary works and as expressions of women's differences from one another. Works are selected based on their specific attention to the question of gender as it intersects with other elements of culture. Prerequisites: ENGL 101, 102, and one course in literature.

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

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 is given to poverty among Kansas families. Prerequisites: 6 hours of social science.

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 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 580. Special Topics (1-3). For students who wish to pursue special reading or research projects not covered in course work. Prerequisite: instructor's consent.

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 with what results? Does the entrance of white women and people of color into the sciences and humanities change how they are practiced? Do they produce significantly different understanding about the world? Central premise is that all knowledge emerges from some type of love or passion. What types of passion produce knowers, knowing, and the known?

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 267 and 387, or 6 hours of women's studies courses, or instructor's consent.

WOM S 633. Leadership Techniques for Women (3). Cross-listed as COMM 635. Provides the female student experience in decision making and improves skills in leadership through role playing and exercise in group dynamics.

Courses for Graduate Students Only

WOM S 870. 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: R stands for lecture and L for laboratory. For example, 4R, 2L means 4 hours of lecture and 2 hours of lab.
Graduate Faculty 2004-2005

Full Membership

Date or dates following title refer to time of initial and successive appointments. Faculty listed have academic rank.

Abdinnour-Helm, Sue, Assistant Professor and Chairperson, Finance, Real Estate, and Decision Sciences (1998). BS, Birzeit University, 1983; MS, Southampton University, 1988; PhD, Indiana University, 1994.


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.


Anderson, Peggy J., Assistant Professor, Curriculum and Instruction (1993). BS, Emporia State University, 1967; MA, University of Kansas, 1979; PhD, Wichita State University, 1993.


Armstrong, Richard N., Associate Professor, Elliott School of Communication, and Director, Basic Oral Communication Program (1987). BA, Southern Utah University, 1972; MA, Brigham Young University, 1974; PhD, Bowling Green State University, 1978.

Badgett, Barry T., Associate Professor, School of Art and Design (1993). BFA, Virginia Commonwealth University-Richmond, 1965; MFA, Syracuse University, 1990.

Bagai, Rajiv, Associate Professor, Computer Science (1990). MS, Birla Institute of Technology and Science, 1983; MS, University of Victoria, 1987; PhD, 1990.


Bakken, Linda, Professor, Administration, Counseling, Educational, and School Psychology (1985). BA, Northern Michigan University, 1960; MS, Utah State University, 1979; EdD, Boston University, 1983.


Bannister, Andra, Associate Professor, School of Community Affairs, Criminal Justice Program (1965). BS, University of Illinois, Champaign-Urbana, 1989; MA, Indiana University, Bloomington, 1990; PhD, Michigan State University, 1995.


Beehler, John M., Professor, School of Accounting, and Dean, W. Frank Barton School of Business (2000). BS, Pennsylvania State University, 1977; MBA, Indiana University, 1982; PhD, 1988.

Beehler, Pamela, Interim Chairperson and Associate Professor, Kinesiology and Sport Studies (2000). BS, Pennsylvania State University, 1977; MED, East Stroudsburg University, 1988; PhD, Indiana University, 1986.

Begg, Donald L., President and Professor of Education (1999). BSE, Southern Illinois University, 1963; MED, 1964; PhD, University of Iowa, 1966.

Behrman, Elizabeth, Professor, Physics, and Associate Director, Emory Lindquist Honors Program (1990). ScB, Brown University, 1979; MS, University of Illinois, 1981; PhD, 1985.


Bereman, Nancy, Associate Professor, Management (1980). BA, Wichita State University, 1969; MBA, 1974; PhD, University of Minnesota, 1983.


Billings, Dorothy K., Associate Professor, Anthropology (1968). BA, University of Wisconsin, 1955; PhD, University of Sydney, 1972.

Biscoff, William, Professor, Geology, and Dean, Fairmount College of Liberal Arts and Sciences (1984). BA, DePauw University, 1975; MS, Northwestern University, 1982; PhD, 1985.


Blocher, Larry R., Professor and Associate Chairperson, School of Music (1995). BME, Morehead State University, 1975; MME, 1977; PhD, Florida State University, 1986.

Bom, 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.

Bravo-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.

Bryant, Jeffrey J., Associate Professor, School of Accountancy, and Barton Fellow (1993). BBA, Wichita State University, 1977; JD, Washburn University School of Law, 1980; PhD, Texas Tech University, 1994.


Carroll, Anne, Assistant Professor, English (1999). BME, University of Michigan, 1989; MA, University of Maryland, 1994; PhD, 1999.

Carter, John W., Associate Professor, Physical Therapy (1990). BS, Southern Nazarene University, 1968; MS, Trinity University, 1972; PhD, University of Texas Medical School-San Antonio, 1975.

Chaparro, Alex, Associate Professor, Psychology (1996). BS, Florida Institute of Technology, Melbourne, 1984; PhD, Texas Tech University, 1990.

Chaparro, Barbara, Director of SURL, Psychology (1998), BS, University of Richmond, Virginia, 1985; PhD, Texas Tech University, 1990.


Cheng, Jen-Chi, Associate Professor and Chairperson, Economics (1989). BA, National Chengchi University, 1978; MA, National Taiwan University, 1982; PhD, Vanderbilt University, 1989.

Cheraghi, Seyed H., Associate Professor and Bombardier-Leaert Fellow, Industrial and Manufacturing Engineering (1993). BA, Tehran University, Iran, 1978; MS, University of Arizona, 1987; PhD, Pennsylvania State University, 1992.

Chopra, Dharan V., Professor, Mathematics and Statistics (1967). BA, Punjab University, India, 1950; MA, 1953; MA, University of Michigan, 1961; AM, 1963; PhD, University of Nebraska, 1968.

Chou, Shang-Ching, Professor, Computer Science (1991). BS, Shanghai Teacher's College (China), 1965; MS, University of Texas at Austin, 1984; PhD, 1985.

Christ, Ronald, Professor, School of Art and Design (1976). BFA, Kansas City Art Institute, 1972; MFA, Indiana University, 1974.

Clark, Frances L., Associate Professor, Curriculum and Instruction (1992). BA, Southwestern College, 1966; MEd, University of Kansas, 1971; PhD, 1981.

Clark, James E., Associate Professor, Economics, Associate Director, Center for Economic Education and Associate Dean, W. Frank Barton School of Business (1976). BA, Michigan State University, 1969; MA, Northwestern University, 1971; PhD, 1976.

Claycomb, Vincentia (Cindy) A., Associate Professor, Marketing and Entrepreneurship (1994). BBA, Wichita State University, 1979; MBA, 1991; PhD, Oklahoma State University, 1995.


Cohen, Peter A., Professor, Psychology, and Dean, College of Health Professions (1999). AB, University of California-Berkeley, 1973; MA, San Diego State University, 1976; PhD, University of Michigan, 1980.


Consiglio, Catherine A., Associate Professor, School of Music (1990). BA, Wichita State University, 1979; MA, New England Conservatory, 1983.


Craig-Moreland, Delores E., Associate Professor, School of Community Affairs, and Graduate Coordinator, Criminal Justice Program (1992). BA, California State University-Northridge, 1970; MA, 1973; PhD, University of Washington, 1988.

Crumwell, Paul, Professor and Director, School of Community Affairs, Criminal Justice Program (1996). BA, Sam Houston State University, 1966; MA, 1967; MFA, Texas Christian University, 1979; PhD, Florida State University, 1986.

Crum, Dorothy E., Professor, School of Music (1973). BA, Barrington College, 1966; MM, Western Kentucky University, 1969; DMA, University of Colorado, 1977.

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). BS, Massachusetts Institute of Technology, 1978; MBA, American International College, 1977; PhD, University of Massachusetts, Amherst, 1985.

DaIteri, Darce, Assistant Professor, Psychology (2000). BS, St. Ambrose University, 1995; MS, Texas Christian University, 1998; PhD, 2000.


Dawe, Margaret Baughman, Associate Professor and Chairperson, English (1993). BA, University of Virginia, 1979; MS, Northwestern University, Evanston, 1980; MFA, City University of New York, Brooklyn College, 1989.


Dillollo, Anthony, Assistant Professor, Communicative Disorders and Sciences (2003). BS, University of Western Australia, 1986; MS, University of Mississippi, 1996; PhD, University of Memphis, 2001.

Dooly, Patricia, Associate Professor and Graduate Coordinator, Elliott School of Communication (1997). BA, University of Minnesota, 1975; MA, 1983; PhD, 1994.


Dreifort, John E., Professor and Graduate Coordinator, History (1970). BS, Bowling Green State University, 1965; MA, 1966; PhD, Kent State University, 1970.

Duram, James C., Professor, History (1968). BA, Western Michigan University 1961; MA, 1963; PhD, Wayne State University, 1968.


Eichhorn, David, Associate Professor, Chemistry (1996). Harvard University, Cambridge, 1986; PhD, University of California, Berkeley, 1992.


Farmer, Steven M., Associate Professor and Chairperson, Management (1999). BS, Tulane University, 1978; MA, Southern Methodist University, 1980; MS, Georgia Institute of Technology, 1991; PhD, 1993.


Fleming, H. Edward, Professor and Director, Hugo Wall School of Urban and Public Affairs (1979). BS, Emporia State University, 1984; MA, George Washington University, 1985; PhD, University of Kansas, 1970.

Foley, Mark, Associate Professor, School of Music (1989). BM, University of Minnesota, 1984; MM, Eastman School of Music, University of Rochester, 1989.

Foster, Mary Sue, Professor, School of Art and Design (1966). BSE, University of Kansas, 1961; MSE, 1963; MFA, 1971.

Fox, Charles, Associate Dean and Associate Professor, College of Health Professions (2003). PhD, Brandeis University, 1986.


Gibson, Kay, Assistant Professor, Curriculum and Instruction (1998). BA, Wichita State University, 1970; MS, 1984; PhD, University of New England, 1996.

Glass, Mark A., Professor, Hugo Wall School of Public and Urban Affairs (1994). BBA, Wichita State University, 1970; MFA, 1974; PhD, University of Texas-Arlington, 1981.

Glasmann, Robert V., Jr., Associate Professor, School of Music (1967). BS, Weber State College.
Keel, Vernon A., Professor, Elliott School of Communication (1989). BA University of North Dakota, 1963; PhD, University of Minnesota, 1975.

Kindrick, Robert L., Professor, English, and Vice President for Academic Affairs and Research (2000). BA, Park College, 1964; MA, University of Missouri-Kansas City, 1967; PhD, University of Texas-Austin, 1971.

King, Marie Allyn, Assistant Professor, Music Theatre-Voice, and Director, Opera/Musical Theatre (1997). BFA, Florida Atlantic University; 1972; Artists Diploma, University of Cincinnati College-Conservatory of Music, 1997; MFA, 1998.

Klunder, Willard Carl, Associate Professor, History (1986). BA, Saint Olaf College, 1969; AM, University of Illinois, Urbana-Champaign, 1972, PhD, 1981.

Koert, David N., Associate Professor, Mechanical Engineering (1993). BSME, Villanova University, 1980; MSME, Drexel University, 1984; PhD, 1990.

Konek, Carol W., Professor, Women's Studies (1969). BS, University of Kansas, 1961; MA, Wichita State University, 1968; PhD, University of Oklahoma, 1977.

Kovar, Susan K., Professor, Kinesiology and Sport Studies, and Dean, Graduate School (1991). BS, University of Nebraska, 1967; MS, University of Illinois, 1970; PhD, University of Minnesota, 1985.


Lancaster, Kirk E., Professor, Mathematics and Statistics (1980). AB, Humboldt State University, 1975; PhD, Oregon State University, 1981.


LeMee-Long, Mary A., Associate Professor and Chairperson, Public Health Sciences (1994). BS, Western Michigan University, 1978; MA, University of Michigan, 1980; PhD, University of South Carolina, 1992.


Lewis, D. Kathleen, Associate Professor, Physical Therapy (1999). BS, University of Minnesota; BS, Kansas State University; MA, University of Southern California-Los Angeles; JD, Washburn Law School.

Lewis, Rhonda, Associate Professor, Psychology (1996). BA, Wichita State University, 1991; MA, University of Kansas, 1993; MPH, 1996; PhD, 1996.


Locke, James E., Associate Professor, Aerospace Engineering (2000). BS, Oklahoma State University, 1981; MSCE, 1983; PhD, Old Dominion University, 1988.

Loftus, Ariel, Assistant Professor, History (1997). BA, University of Michigan, 1979; PhD, Stanford University, 1981; MA, University of Michigan, 1982; PhD, 1992.


Longhofer, Stanley D., Associate Professor, Finance, Real Estate, and Decision Sciences, and Stephen L. Clark Chair in Real Estate and Finance (1999). BBA, Wichita State University, 1989; MS, University of Illinois, 1991; PhD, 1995.

Loper, 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, 1964.


Ma, Chunsheng, 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, Associate 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, 1968; 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.


Masud, Abu S.M., Professor, Chairperson and Graduate Coordinator, Industrial and Manufacturing Engineering (1985). BS, Bangladesh University of Engineering and Technology, 1969; Diploma in Institute of Business Administration, 1973; MSIE, Kansas State University, 1975; PhDIE, 1976.

Mau, Joseph W.C., Professor, Administration, Counseling, Educational, and School Psychology (1991). BA, Tamkang University, Taiwan.

May, Jeffrey, Associate Professor, Biology (2003). BS, University of Maine, 1970; PhD, University of Rhode Island, 1978.


McConnell, Daniel S., Assistant Professor, Psychology (2001). BA, Indiana University, 1992; PhD, 1999.

McCormick, B. Jack, Professor, Chemistry (1979). BS, West Texas State University, 1959; PhD, Oklahoma State University, 1962.

McDonald, J. David, Professor and Chairperson, Biological Sciences (1992). BS, Kansas State University, 1983; PhD, 1988.


Meissner, Gregory J., Professor, Psychology (1980). BA, Wichita State University, 1977; PhD, University of Tennessee, 1980.


Miles, William, Assistant Professor, Economics (1999). BS, Bentley College, 1993; PhD, University of Illinois at Urbana-Champaign, 1995.


Miller, Lori K., Professor Kinesiology and Sport Studies and Associate Dean, College of Education (1996). BS, Emporia State University, 1984; MEd, Texas A&M University, 1986; EdD, East Texas State University, 1989; MBA, University of Louisville,
Schneegurt, Mark A., Assistant Professor, Biological Sciences (2000). BS, Rensselaer Polytechnic Institute, 1984; MS, 1985; PhD, Brown University, 1989.

Schneider, Philip H., Professor and Director of Creative Writing, English (1967). BA, State University of New York College at Oneonta, 1965; MFA, University of Iowa, 1967.


Scudder, Rosalind R., Professor, Communicative Disorders and Sciences (1972). BA, Wichita State University, 1964; MA, 1972; PhD, 1978.

Shaw, Carolyn M., Assistant Professor, Political Science (2001). BA, Dickinson College, 1993; PhD, University of Texas-Austin, 2000.


Smith, Bert L., Professor, Aerospace Engineering (1966). BSME, University of Missouri at Rolla, 1953; MSME, 1960; PhD, Kansas State University, 1966.

Smith, Martha, Associate Professor, School of Community Affairs (2002). AB, Brown University, 1978; JD, New York University, 1981; MA, Rutgers University, 1995; PhD, 1996.


Smith-Campbell, Betty, Assistant Professor, School of Nursing (1998). Nursing Diploma, Hurley Medical Center School of Nursing, 1973; BSN, University of Michigan, 1980; MN, University of Kansas, 1987; PhD, University of Colorado, 1996.


Soles, David E., Professor and Chairperson, Philosophy (1974, 1982). BA, University of Pittsburgh, 1969; PhD, Johns Hopkins University, 1977.


Steck, James E., Associate Professor, Aerospace Engineering (1990). BS, University of Missouri at Rolla, 1980; MS, 1984; PhD, 1989.

Steinke, Elaine, Professor, School of Nursing (1990). BSN, Wichita State University, 1979; MN, 1982; PhD, Kansas State University, 1987.


Straitman, Katherine H., Assistant Professor and Clinical Supervisor, Communicative Disorders and Sciences (1985). BA, Midland Lutheran College, 1970; MA, Wichita State University, 1971; PhD, 2001.


Talaty, Erach R., Professor, Chemistry (1969). BSc (Honors), Nagpur University, India, 1948; PhD, 1954; PhD, Ohio State University, 1957.


Thomas, Phillip D., Professor, History (1965, 1984). BA, Baylor University, 1960; MA, University of New Mexico, 1964; PhD, 1965.


Tong, Benson, Assistant Professor, History (1998). BA, Science University, Malaysia, 1980; MA, University of Toledo, 1991; PhD, 1996.

Toops, Gary H., Professor, Modern and Classical Languages and Literatures (1989). BA, McGill University, 1975; MA, University of British Columbia, 1979; MA, Yale University, 1980; MPhil, 1982; PhD, 1985.

Torbenson, Craig L., Associate Professor, History (1989). BS, Brigham Young University, 1982; MA, 1985; PhD, University of Oklahoma, 1992.


Tuck, Randall L., Associate Professor, Administration, Counseling, Educational, and School Psychology (1994). BS, Butler University, 1965; MEd, Seattle University, 1988; PhD, Texas A&M University, 1994.


Van Stipdonk, Michael J., Assistant Professor, Chemistry (2000). BA, University of Detroit, 1989; PhD, Texas A&M University, 1994.

Vanderburgh, William L., Assistant Professor, Philosophy (2001). BA (Hons), University of Western Ontario, 1993; MA, 1994; PhD, 2001.

Weheba, Gamil S., Associate Professor, Industrial and Manufacturing Engineering (2000). BS, Menoufia University, 1981; MS, 1987; PhD, University of Central Florida, 1996.

Whitman, Lawrence E., Assistant Professor, Industrial and Manufacturing Engineering (1999). BSEET, Oklahoma State University, 1984; MS, 1986; PhD, University of Texas-Arlington, 1999.

Williamson, L. Keith, Associate Professor, Elliott School of Communication (1977). BA, Wichita State University, 1965; MTh, Southern Methodist University, 1968; PhD, Temple University, 1975.


Wine, Thomas R., Associate Professor, School of Music (1995). BAME, Aldershot-Broadbreads College, Philippines, 1980; MME, Duquesne University, 1982; PhD, Florida State University, 1994.

Withrow, 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, Christopher, Assistant Professor, Mathematics and Statistics (2003). Diploma in Mathematics, University of Munich, 1994; PhD, Technical University of Munich, 1999.

Wolff, 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.

Wong, John D., Associate Professor, Hugo Wall School of Urban and Public Affairs (1990). BBA, Wichita State University, 1982; MA, 1984; JD, Western State University, 1991; PhD, 1994.
bamm University, 1986; PhD, Northeastern University, 1990.


Wright, David W., Associate Professor, Sociology, (1993). BA, Indiana University-Purdue University at Indianapolis, 1987; MA, Purdue University, 1989; PhD, 1992.

Wynn, Tor, Assistant Professor, Sociology (2000). BA, Oakland University, 1993; MA, University of Iowa, 1996; PhD, 2001.

Yang, C. Charles, Associate Professor, Mechanical Engineering (1997). BS, National Taiwan University, 1985; MS, 1987; PhD, Louisiana State University, 1993.

Yang, Wan, Assistant Professor and Graduate Coordinator, Geology (1999). BS, Northwestern University, 1986; PhD, Northwestern University, 1993.

Yang, Wen, Assistant Professor and Graduate Coordinator, Geology (1999). BS, Northwestern University, 1986; PhD, Northwestern University, 1993.

Yang, Zettle, Robert, Associate Professor and Graduate Coordinator, Computer Science (2000). BS, Kansas State University, 1987; MS, 1989; PhD, 1997.


Beldona, Shiram (Sam), Assistant Professor, Management, and Assistant Director, for International Business (2001). BS, Karnataka University, 1988; MBA, 1985; MS, Temple University, 1992; PhD, 1994.

Bieberly, Cliff, Assistant Professor, Elliot School of Communication (2001). BA, Wichita State University, 1972; MA, 1982.

Bohan, Michael, Visiting Research Assistant Professor, Psychology (2002). BA, University of South Florida, 1993; MS, Florida Institute of Technology, 1996; PhD, Wichita State University, 2001.

Belin, Brian L., Assistant Professor and Graduate Coordinator, School of Social Work (1999). BS, Oklahoma State University, 1985; MS, 1988; MSW, Walla Walla College, 1998; PhD, Oklahoma State University, 1994.

Brown, Alison McKenney, Assistant Professor, School of Community Affairs, Criminal Justice Program (1998). BS, Kansas State University, 1986; MPA, Wichita State University, 1993; JD, University of Kansas, 1993.

Cavarozzi, Joyce P., Associate Professor, School of Performing Arts (1965). BSE, Ohio University, 1953; MA, Ohio State University, 1963.

Cetinkaya, Coskun, Assistant Professor, Electrical and Computer Engineering (2003). BS, Ankara University, 1994; MS, University of Southern California, 1998; PhD, Rice University, 2002.

Lott, Peter T., Associate Professor, English, and Associate Vice President, Academic Affairs (1973). BA, University of San Francisco, 1965; MA, Claremont Graduate School, 1966; PhD, 1970.

Associate Membership

Ackerman, Paul D., Assistant Professor and Assistant Chairperson, Psychology (1968). BA, University of Kansas, 1964; MA, 1966; PhD, 1968.


Barbich, Judith, Associate Professor, School of Performing Arts (1984). BA, Edgewell College, 1974; MA, University of Cincinnati, 1976; PhD, University of California, 1981.


Barut, Mehmet, Assistant Professor, Finance, Real Estate, and Decision Sciences (2000). BS, Istanbul Technical University, 1988; MS, 1991; PhD, Clemson University, 1999.

Bates, Rodney, Assistant Professor and Graduate Coordinator, Computer Science (2000). BS, Kansas State University, 1987; MS, 1988; PhD, 1997.


Beldona, Shiram (Sam), Assistant Professor, Management, and Assistant Director, for International Business (2001). BS, Karnataka University, 1988; MBA, 1985; MS, Temple University, 1992; PhD, 1994.

Bieberly, Cliff, Assistant Professor, Elliot School of Communication (2001). BA, Wichita State University, 1972; MA, 1982.

Bohan, Michael, Visiting Research Assistant Professor, Psychology (2002). BA, University of South Florida, 1993; MS, Florida Institute of Technology, 1996; PhD, Wichita State University, 2001.

Belin, Brian L., Assistant Professor and Graduate Coordinator, School of Social Work (1999). BS, Oklahoma State University, 1985; MS, 1988; MSW, Walla Walla College, 1998; PhD, Oklahoma State University, 1994.

Brown, Alison McKenney, Assistant Professor, School of Community Affairs, Criminal Justice Program (1998). BS, Kansas State University, 1986; MPA, Wichita State University, 1993; JD, University of Kansas, 1993.

Cavarozzi, Joyce P., Associate Professor, School of Performing Arts (1965). BSE, Ohio University, 1953; MA, Ohio State University, 1963.

Cetinkaya, Coskun, Assistant Professor, Electrical and Computer Engineering (2003). BS, Ankara University, 1994; MS, University of Southern California, 1998; PhD, Rice University, 2002.


Chang, Chih-Chih, Assistant Professor, Computer Science (2001). BS, Tamkang University, 1988; MS, National Cheng Kung University, 1990; PhD, Oklahoma State University, 2000.

Chang, Doris, Assistant Professor, Women's Studies (2003). BA, University of North Carolina-Chapel Hill, 1992; MA, Bowling Green State University, 1994; PhD, Ohio State University, 2002.


Clausen, Thomas, Assistant Professor, Accounting (2003). BBA, Iowa State, 1985; MAcc, Arizona State University, 1993; MS, University of Illinois, 1995; PhD, University of Connecticut, 2002.

Close, Dan E., Associate Professor, Elliott School of Communication (1999). BA, Wichita State University, 1981; MA, 1993.

Cochran-Black, Diana L., Assistant Professor, Medical Technology (1987). BS, Emporia State University, 1979; MHS, Wichita State University, 1986; DPhE, University of Oklahoma, 1998.


Conrad, Mary Elaine, Associate Professor and Chairperson, Medical Technology (1980). BS, Kansas Newman College, 1957; MS, Kansas State University, 1974; PhD, 1991.

Corriigan, Mary, Assistant Professor, School of Community Affairs (2002). BS, Kansas State University, 1973; MA, Wichita State University, 1978; PhD, Virginia Commonwealth University, 2002.


Day, David, Assistant Professor and Assistant Director, Physician Assistant (1997). AAS, Seward County Community College, 1986; BS, Wichita State University, 1995; MPAS, University of Nebraska, 1999.

Distler, Donald A., Associate Professor, Biological Sciences (1963). BA, University of Louisville, 1952; MS, 1958; PhD, University of Kansas, 1966.


Elder, Betty, Assistant Professor, Nursing (2003). BA, Wichita State University, 1974; BSN, University of Missouri-KC, 1999; MS, University of Nebraska-Omaha, 2001.

Emery, Sandra L., Assistant Professor, Curriculum and Instruction (1999). BSEd, State University of New York, 1980; MSED, University of Kansas, 1987; PhD, 1997.

Ferguson, Jason W., Assistant Professor, Physics (2000). BS, Wichita State University, 1990; MS, 1992; PhD, University of Kentucky, 1997.

Flippen, Paul, Assistant Professor, Art and Design (2002). BA, University of Texas-Austin, 1995; BFA, 1995; MS, Pratt Institute, 2000; MFA, 2000.

Flores, Michael, Assistant Professor, Accounting (2002). BBA, University of Texas-El Paso, 1981; MA, New Mexico State University, 1982; PhD, Texas Tech University, 2002.

Forlaw, Loreta, Assistant Professor, School of Nursing (2001). BSN, Pacific Lutheran University,

Fowler, Thomas A., Associate Professor, School of Music (1979). BME, Wichita State University, 1968; MME, 1979.


Griffin, Audrey, Assistant Professor and Clinical Supervisor, Physician Assistant, 2002. BS, Wichita State University, 1999.

Haack, Constance, Assistant Professor, Curriculum and Instruction (2001). BA, Fort Hays State University, 1971; MA, University of Tulsa, 1990; PhD, University of Oklahoma, 2000.

Hackett, Donald W., Associate Professor, Marketing and Entrepreneurship, and Director, Center for Entrepreneurship (1973). BBA, University of Oklahoma, 1967; MBA, 1970; DBA, 1974.

Hager, Kevin, Assistant Professor, Elliott School of Communication (1999). BA, Fort Hays State University, 1982; MS, 1983.

Hammon-Paulson, Carol, Assistant Professor, Nursing (2002). BSN, University of California, 1981; MN, 1984; MA, University of Kansas, 1987; PhD, 1989; D.Min, University of Creation Spirituality, 2001.


Hayes, William C., Associate Professor, School of Community Affairs, Gerontology Program (1973). BS, Ball State University, 1967; MA, 1968; PhD, University of Missouri, 1973.

Hellman, James, Assistant Professor, School of Art and Design (1989). BA, Wichita State University, 1972; MA, 1975.


Hillmer, David, Assistant Professor, School of Art and Design (1999). BFA, Wichita State University, 1993; MFA, Syracuse University, 1997.

Hind, Emily, Assistant Professor, Modern and Classical Languages and Literature (2001). BA, University of Kansas, 1999; MA, Pennsylvania State University, 1997; PhD, University of Virginia, 2001.

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 (ASC), 1965; BB (ASC), 1972; MED, Wichita State University, 1977.

Hrycak, Tomasz, Assistant Professor, Mathematics and Statistics (2002). MS, Technical University of Wrocław, Poland, 1988; MS, 1988; PhD, Yale University, 1995.


Hunley, Diane E., Associate Professor, Dental Hygiene (1976). BA, University of Bridgeport, 1968; MA, State University of New York at Buffalo, 1971; PhD, Kansas State University, 1985.

Jacovetta, Ronald G., Associate Professor, School of Community Affairs, Criminal Justice Program (1973). BS, Colorado State University, 1965; MS, 1967; PhD, University of Connecticut, 1972.


Koppenhaver, John H., Associate Professor, Modern and Classical Languages and Literatures (1966, 1972), BA, Wichita State University, 1964; MA, University of Iowa, 1966; PhD, 1974.

Lane, Robert, Instructor, Curriculum and Instruction, and Director, Transition to Teaching, (1996). BA, Friends University, 1962; MA, Wichita State University, 1966; EdD, University of Kansas, 1976.

Langrall, Rebecca, Assistant Professor, Curriculum and Instruction (2000). AB, Smith College, 1975; MAL, Dartmouth College, 1984; EdD, University of Massachusetts-Amherst, 1997.

Lewandowski, Cathleen A., Assistant Professor and Director, School of Social Work (1995). BA, Blackburn College, 1975; MSW, St. Louis University, 1981; PhD, University of Kansas, 1997.

LeZotte, Annette, Assistant Professor, School of Art and Design (2000). BA, University of Illinois-Champaign-Urbana, 1992; MA Florida State University, 1995.


Maslyn, John, Assistant Professor, Management (2002). BA, Hobart College, 1978; MS, Rensselaer Polytechnic Institute, 1980; PhD, Georgia Institute of Technology, 1996.


May, Phillip T., Professor, School of Accountancy (1974). BA, Lawrence University, 1957; MBA, Indiana University, 1959; PhD, University of Wisconsin, 1967; CPA-Wisconsin.

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.

Merriman, Kimberly K., Assistant Professor, Management (2002). BBA, Temple University, 1996; ABD.

Messier, Jodi, Assistant Professor, Economics (2002). BA, Coe College, 1995; MS University of Kentucky, 1999; PhD, 2000.


Muthitacharoen, Achita, Assistant Professor, Finance, Real Estate, and Decision Science, (2002). BA, Thammasat University, 1994; MBA, University of Memphis, 1997; PhD, 2002.


Orchard, Louis, Assistant Professor, Accounting (2003). BA, University of Washington, 1978; MBA, 1992; PhD, University of Arizona, 1996.

Perez, Kathleen O., Associate Professor, Sociology (1983). BA, Clarke College, 1979; MA, Miami University, 1980; PhD, Purdue University, 1984.


Pfannestiel, Maurice, Associate Professor, Economics (1966). BA, Fort Hays State University, 1968; MS, Oklahoma State University, 1966; PhD, 1967.


Price, Jay M., Assistant Professor, History (1999). BA, University of Mexico, 1991; MA, College of William and Mary, 1992; PhD, Arizona State University, 1997.

Proctor, Curtis, Assistant Professor, School of Social Work (2003). BS, University of Oklahoma,

Rogers, Ben E., Associate Professor, Philosophy (1966). BA, University of Tennessee, 1958; MAT, Vanderbilt University, 1961; MA, Indiana University, 1966; PhD, 1970.


Shawver, Martha M., Assistant Professor, Nursing, and Associate Vice President, Academic Affairs and Research (1975). BSN, Eastern Mennonite College, 1965; MA in Nursing, University of Iowa, 1974; PhD, University of Kansas, 1985.

Sheffield, James E., Associate Professor and Chairperson, Political Science (1974). BA, Mississippi State University, 1969; MS, Florida State University, 1970; PhD, 1973.


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 and Graduate Coordinator, 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.

Tesfame, Asrat, Associate Professor, Electrical and Computer Engineering (2003). BS, Addis Ababa University, 1965; BS, 1974; MS, Cornell University, 1976; PhD, 1980.

Thompson, Johnnie, Associate Professor, Curriculum and Instruction (1993). BS, University of Kansas, 1968; MS, Central Missouri State University, 1975; EdD, Kansas State University, 1992.


Town, Robert L., Associate Professor, School of Music (1965). BM, Eastman School of Music, 1960; MM, Syracuse University, 1962.

Tran, Anh, Assistant Professor, Curriculum and Instruction (2003). BA, Saigon University, 1973; MA, Wichita State University, 1993; PhD, Kansas State University, 2002.

Widener, Russell D., Associate Professor, School of Music, and Coordinator, General Education Program (1981). BM, Baylor University, 1968; MM, Catholic University, 1972.


Wilson, Camilla, Associate Professor and Chair, Physical Therapy (2003). BS, University of Kansas, 1970; MS, 1979; PhD, 1992.


Wood, Michael A., Assistant Professor, Elliott School of Communication, and Executive Director, Media Resources Center (1985). BS, Kansas State University, 1969; MS, 1973; MFA, University of Southern California, 1979.


Yildirim, Mehmet, Assistant Professor, Industrial and Manufacturing Engineering (2002). BS, Bogazici University, 1994; MS, Bilkent University, 1996; PhD, University of Florida, 2001.

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
Abalah 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)
Elliott 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)
Garvey International Center (A)
Geology Building (C)
Golf Course Maintenance Building (E)
Golf Pro Shop (F)
Grace Memorial Chapel (C)
Grace Wilkie Hall (D)
Greenhouse (D)
Henrion Hall (C)
Hesker Center (D)
Hesker 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)
Koch Arena (B)
Lindquist Hall (C)
Lutheran Student Center (D)
Marcus Welcome Center (F)
McKinley Hall (B)
McKnight Art Center (B)
Media Resources Center (D)
Memorial '70 (B)
Metropolitan Complex, Eugene M. 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)
Printing Services (D)
Rhatigan Student Center (C)
Sheldon Coleman Tennis Complex (C)
Tyler Field (E)
Ulrich Museum of Art (B)
Visual Communications (D)
Wallace Hall (D)
Warehouse (E)
Welcome Center (proposed) (E, F)
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.
Key to Course Descriptions

Symbols

When two course numbers are joined by a hyphen (-), the first semester is prerequisite to the second; when the numbers have an ampersand (&) between them, the two semesters may be taken in either order. Unless specifically noted otherwise, the first course listed is offered in the fall semester and the second in the spring.

The number of hours of credit for each course is indicated in parentheses following the course title. The number of class meetings per week is normally the same as the number of credit hours. Two hours of laboratory work usually are required for 1 hour of credit. In courses involving meetings other than lectures, the following symbols are used: R, lecture; L, laboratory; C, conference; D, demonstration; and P, practicum/clinical, with the hours of practicum/clinical per week given in front of the letter (6-8P means six to eight hours of practicum/clinical per week).

Abbreviations

The following abbreviations of academic departments and areas are used in references to courses offered by those departments.

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<thead>
<tr>
<th>Abbreviation</th>
<th>Department/Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT</td>
<td>Accounting</td>
</tr>
<tr>
<td>AE</td>
<td>Aerospace engineering</td>
</tr>
<tr>
<td>ANTHR</td>
<td>Anthropology</td>
</tr>
<tr>
<td>ART E</td>
<td>Art education</td>
</tr>
<tr>
<td>ART F</td>
<td>Art and design foundation</td>
</tr>
<tr>
<td>ART G</td>
<td>Graphic design</td>
</tr>
<tr>
<td>ART H</td>
<td>Art history</td>
</tr>
<tr>
<td>ART S</td>
<td>Studio arts</td>
</tr>
<tr>
<td>BA</td>
<td>Business administration</td>
</tr>
<tr>
<td>BLAW</td>
<td>Business law</td>
</tr>
<tr>
<td>BIOL</td>
<td>Biological sciences</td>
</tr>
<tr>
<td>CDS</td>
<td>Communicative disorders and sciences</td>
</tr>
<tr>
<td>CESP</td>
<td>Counseling, educational, and school psychology</td>
</tr>
<tr>
<td>CHEM</td>
<td>Chemistry</td>
</tr>
<tr>
<td>CI</td>
<td>Curriculum and instruction</td>
</tr>
<tr>
<td>CJ</td>
<td>Criminal justice</td>
</tr>
<tr>
<td>COMM</td>
<td>Communication</td>
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<td>CS</td>
<td>Computer science</td>
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<td>Dental hygiene</td>
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<td>DS</td>
<td>Decision sciences</td>
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<tr>
<td>EAS</td>
<td>Educational administration and supervision</td>
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<tr>
<td>ECON</td>
<td>Economics</td>
</tr>
<tr>
<td>ECE</td>
<td>Electrical and computer engineering</td>
</tr>
<tr>
<td>ENGL</td>
<td>English language and literature</td>
</tr>
<tr>
<td>ENGR</td>
<td>General engineering</td>
</tr>
<tr>
<td>ENTRE</td>
<td>Entrepreneurship</td>
</tr>
<tr>
<td>ETH S</td>
<td>Ethnic studies</td>
</tr>
<tr>
<td>FA</td>
<td>Fine arts—general</td>
</tr>
<tr>
<td>FIN</td>
<td>Finance</td>
</tr>
<tr>
<td>FREN</td>
<td>French</td>
</tr>
<tr>
<td>GEOG</td>
<td>Geography</td>
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<tr>
<td>GEOL</td>
<td>Geology</td>
</tr>
<tr>
<td>GERM</td>
<td>German</td>
</tr>
<tr>
<td>GERON</td>
<td>Gerontology</td>
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<tr>
<td>HIST</td>
<td>History</td>
</tr>
<tr>
<td>HNRS</td>
<td>Honors Program</td>
</tr>
<tr>
<td>HP</td>
<td>Health professions—general</td>
</tr>
<tr>
<td>HRM</td>
<td>Human resource management</td>
</tr>
<tr>
<td>HS</td>
<td>Health sciences</td>
</tr>
<tr>
<td>IE</td>
<td>Industrial engineering</td>
</tr>
<tr>
<td>KSS</td>
<td>Kinesiology and sport studies</td>
</tr>
<tr>
<td>LAS I</td>
<td>Liberal arts interdisciplinary</td>
</tr>
<tr>
<td>LATIN</td>
<td>Latin</td>
</tr>
<tr>
<td>LEGAL</td>
<td>Legal assistant</td>
</tr>
<tr>
<td>LING</td>
<td>Linguistics</td>
</tr>
<tr>
<td>MATH</td>
<td>Mathematics</td>
</tr>
<tr>
<td>ME</td>
<td>Mechanical engineering</td>
</tr>
<tr>
<td>MED T</td>
<td>Medical technology</td>
</tr>
<tr>
<td>MFG E</td>
<td>Manufacturing engineering</td>
</tr>
<tr>
<td>MGMT</td>
<td>Management</td>
</tr>
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<td>MICT</td>
<td>Mobile intensive care technician</td>
</tr>
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<td>MIS</td>
<td>Management information systems</td>
</tr>
<tr>
<td>MKT</td>
<td>Marketing</td>
</tr>
<tr>
<td>MUS A</td>
<td>Applied music</td>
</tr>
<tr>
<td>MUS C</td>
<td>Musicology-composition</td>
</tr>
<tr>
<td>MUS E</td>
<td>Music education</td>
</tr>
<tr>
<td>MUS P</td>
<td>Music performance</td>
</tr>
<tr>
<td>NURS</td>
<td>Nursing</td>
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<tr>
<td>FA</td>
<td>Physician assistant</td>
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<td>PADM</td>
<td>Public administration</td>
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<td>PHIL</td>
<td>Philosophy</td>
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<td>Public health sciences</td>
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<td>Physics</td>
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<td>Psychology</td>
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<td>PT</td>
<td>Physical therapy</td>
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<td>Real estate and land use economics</td>
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<td>Religion</td>
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<td>Spanish</td>
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<td>Statistics</td>
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<tr>
<td>THEA</td>
<td>Theatre</td>
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<td>WOM S</td>
<td>Women's studies</td>
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