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 54 master’s programs, one educational specialist program, nine doctoral programs, and two 1st professional degrees. 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; communication sciences and disorders; educational leadership; psychology; and in aerospace, electrical, industrial, and mechanical engineering. Two 1st professional degrees are also awarded: Doctor of Audiology and Doctor of Physical Therapy. The primary goals of the Graduate School are to encourage independent scholarship and to develop competence in research or other creative activity. Students are expected to master special fields as well as to develop appropriate methods of inquiry for future professional growth. The Graduate School operates according to bylaws approved by the graduate faculty. Current bylaws are available online at 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 major research project. Students admitted to a doctoral program usually spend four to six years of full-time study completing their degree. Depending upon the field of study, the first two to three years involve classes, seminars, and directed readings to provide a comprehensive knowledge of an academic field. During this time, students may also begin independent research projects. As a candidate for a doctoral degree, a student works on a project that involves original research and reports on the research through the production of a dissertation. Depending upon the field, the dissertation project may take one to two years to complete. Students pursuing graduate certificates are scholars, who for academic, personal, or professional reasons desire graduate-level education without the commitment to a graduate degree program, or who desire interdisciplinary 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, theory, 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. 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.

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 faculty request membership on the graduate faculty by submitting an application with a current academic resume. Applications are reviewed and acted upon by the departmental committee, academic dean, and the graduate dean. 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 deserving department or program need exists. Faculty nominated for membership in this category shall be expected to hold the terminal degree or its equivalent in training and/or experience (with criteria and documentation supplied in cases for
which equivalency is claimed) and be judged qualified to bear all designated academic responsibilities of the graduate program(s) in which they serve. It is expected that significant scholarly and/or artistic or creative achievement will be evident in the academic and professional resume presented in support of nominations and renewals for full membership in the graduate faculty. Full members of the graduate faculty are the only faculty eligible to chair thesis committees. Full membership in the graduate faculty is also a prerequisite for doctoral dissertation chairing status. **Doctoral Dissertation Chairing Status** is defined as full membership on the graduate faculty along with a demonstrable departmental or program need for the faculty member to hold dissertation chairing status. Substantial and sustained scholarly and/or artistic or creative achievement over the most recent five to seven years will be evident in the resumes of faculty nominated for this category. The extent of previous experience in serving on and supervising theses and/or dissertation committees, at WSU or elsewhere, will also enter into the consideration of dissertation chairing status and should be reflected in the resume accompanying the nomination.

**Graduate Faculty Associate Membership** is available to adjunct faculty whose relationship with an academic department exceeds the usual visiting or joint appointment type of association. Nominations for membership in this category 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. **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 in matters of graduate education. Although the nature of graduate coordinator appointments and responsibilities varies throughout program areas, they have a primary role in working with students and faculty in their academic programs. As a standard of expectation, graduate coordinators are charged with the responsibility for
overseeing the evaluation of applicants for admission and the transmittal of departmental recommendations for admission, academic performance, degree completion, and exceptions to graduate school regulations. Graduate coordinators also have a primary role in coordinating information between their program and the Graduate School office, working with their departmental chair or other administrators in maintaining the quality and viability of their graduate program, and serving as the local agent for the graduate faculty in their program areas. Graduate coordinators may also serve on graduate committees in their programs or academic colleges.

Admission to Graduate Study
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://webs.wichita.edu/gradsch. Paper application forms may be requested by calling the Graduate School at (316) 978-3095, by e-mail at gradinqu@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 must be received in addition to the application and application fee. 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. Handcarried or “issued to student” transcripts cannot be accepted. Credentials other than official transcripts will be considered only for application as a visiting 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 graduate school’s application, certain program areas will also require a program application. Records required for admission to programs without application deadlines, and from applicants not requiring visa status, should reach the Graduate School at least three weeks before registration for the semester when admission is desired. Materials received after this date will be processed as the time of staff and faculty permits. Since 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 is usually given to degree-seeking applicants. All application materials in the folders (at the Graduate School and departmental levels) may be reviewed by the applicant upon request, except recommendation forms/letters where the applicant has waived his/her right to see the recommendations. 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. Students may not apply to more than one program at a time. Submission of a second application will result in the cancellation of the first application.

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 $55 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, communication sciences and disorders, liberal studies, psychology, social work, and special education. Applicants to the program areas identified above should consult their program’s Graduate School admission deadlines in this Catalog for admission deadlines. Citizens or International Permanent Students Residents Fall semester 2005 April 1 June 1 Spring semester 2006 August 1 December 1 Applicants who submit applications after these dates, if accepted, should be prepared to register during late registration and to pay a late registration fee.

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, prerequisites, may be granted admission on a fullstanding 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 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. In order to clear the probationary status, students must complete their first 9 hours of graded graduate-level coursework at Wichita State University with a minimum 3.00 grade point average. Only courses numbered 500 and above which are letter graded (A, B, C, D, F) can be used toward the 9-hour requirement. S/U courses and Cr/Ncr courses will not count toward the 9-hour requirement. Students admitted on probation or placed on academic probation following admission are not eligible for assistantship awards or federally funded financial aid.
Admission Requirements Degree Admission
To pursue a graduate degree at WSU, students must be admitted to the specific program for which they are seeking a degree. Students may not be admitted to more than one degree program at a time. Specialist and Master’s Programs Applicants for full-standing degree admission to the specialist and master’s programs must 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 or the award of such credit at Wichita State.
2. A grade point average of at least 2.750 based upon the last 60 hours of coursework (or nearest semester or term break to this), including any postbachelor’s graduate work, 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 or 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).

Nondegree Admission
Persons who already possess a graduate degree, who do not want to seek a graduate degree at this time, or who wish to take graduate courses for professional advancement or personal satisfaction, should apply for nondegree admission. Students originally admitted to a nondegree category may later request the program to consider a transfer to degree status or reapply for degree admission if the degree sought 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 level of graduate coursework for which they have the prerequisites. Nondegree applicants seeking graduate certificates must be admitted under this category. Upon satisfactory completion of a course, credit is placed on a Wichita State University graduate transcript. However, only credit earned in courses numbered 500 and above is counted as graduate credit work. Students applying for admission in this category must meet the following requirements:
1. A bachelor’s degree from a regionally accredited institution.
2. A grade point average of at least 2.750 based upon the last 60 hours of coursework (or nearest semester or term break to this), including any postbachelor’s graduate work. Some programs require higher grade point averages and other admission credentials. Students who do not meet the 2.750 grade point average requirement may be admitted to this category on probation if reasonable evidence exists to indicate their ability to perform satisfactorily in 800-level or above coursework. Although there is no application deadline for nondegree, category A admission, applicants are encouraged to provide the following items no later than three weeks prior to the start of the semester in which they wish to enroll:
   1. A completed and signed application form;
   2. Application fee; and
   3. Two (2) official transcripts sent directly 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 wish to take graduate courses for professional advancement or personal satisfaction. Some programs may require a minimum grade point average. Although there is no application deadline for nondegree, category B admission, applicants are encouraged to provide the following items no later than three weeks prior to the start of the semester in which they wish to enroll:
1. A completed application packet must contain the following:
   1. A completed and signed application form;
   2. Application fee;
   3. Two (2) official transcripts sent directly from the institutions, of a bachelor’s degree from a regionally accredited institution or a copy of a teaching certificate.
   4. A completed and signed application form;
   5. Application fee;
   6. Two (2) official transcripts sent directly from the institutions, of a bachelor’s degree from a regionally accredited institution or a copy of a teaching certificate.

Nondegree, Category B
This category is specifically for students who are not seeking a graduate degree but who want to continue personal and professional development beyond the bachelor’s level through enrollment in certain graduate-level courses, including workshops. Students in this category are restricted to enrollment in courses numbered through 799 and for which they have the prerequisites. Credit earned in category B status is placed on a Wichita State University graduate transcript; graduate credit is awarded for courses numbered 500 through 799. Students applying for admission in this category must meet the following requirements:
1. A bachelor’s degree from a regionally accredited institution. Some programs may require a minimum grade point average. Although there is no application deadline for nondegree, category B 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. Application fee; and
   3. A completed and signed application form;
   4. Application fee;
   5. Two (2) official transcripts sent directly from the institutions, of a bachelor’s degree from a regionally accredited institution or a copy of a teaching certificate.

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,
$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 3.00 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 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 3.00 or above in their major field and a grade point average of 3.00 or higher in their major coursework 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. Both forms are due in the Graduate School no later than two weeks before the semester in which the student intends to enroll under the Senior Rule option. Approval is needed from the student’s major advisor, the chairperson or graduate coordinator in the program in which the work is to be taken, the undergraduate dean 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. The tuition for graduate courses will be assessed at the graduate rate.

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 4 months are placed in an inactive status on the Registrar’s computer database. To enroll again, such students need to call the records section of the Registrar’s office, (316) 978-3055, 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.

Information for International Applicants
1. All Graduate School policies relative to the admission criteria mentioned above apply. The formal admission of international students is a two-part process. The first part evaluates academic admissibility based upon the application form and transcripts or mark sheets provided. Applicants recommended for admission will be notified by the Graduate School of their eligibility for admission and the application will begin the second part of the admission process. The second part requires the demonstration of sufficient English proficiency (TOEFL) and financial resources (WSU Statement of Financial Responsibility) to support graduate work in America.
2. The first semester enrollment at WSU of all graduate international students must be in the program to which the student is admitted.
3. 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.

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 have two (2) official transcripts showing that work sent directly from the institution. 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. In most instances, this will be the 7th semester of study. 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 diploma 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 213 for the computer-based test or 79 for the internet-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 (for equivalent paper-based test scores, please contact the graduate school): Computer-Internet-based based Business Administration 230 88 Chemistry 230 88 Communication 250 100 Computer Science 250 100 English 250 100 Gerontology 230 88 History 250 100 Physical Therapy 250 100 Public Administration 250 100 Applicants interested in studying English at WSU prior to beginning their graduate studies should write to the 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.

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 such resources. Bank statements or letters from relatives or employers will not be considered as a substitute for this form.
An electrical and computer engineering professor and a student conduct an experiment in the ECE department’s Optical Laboratory.

**International Transfer Students**
International students transferring from universities in the United States must present the following items:
1. A completed and signed application for admission.
2. An 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 page 13.
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 nonimmigrant 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 coverage’s:
- Basic injury and sickness benefits amounting to at least $10,000.
- Major medical coverage in an amount of at least $100,000.
- Coverage to provide for medical evacuation of the student’s home country.
- Coverage to provide for repatriation of the student’s remains to the student’s home country in the case of death.

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

**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.
Enrollment

Audit Credit
Students are permitted in credit courses on a noncredit basis with appropriate approval under an auditor classification. To be enrolled as auditors, students must enroll in the same manner and pay the same fees as for credit courses at the University. Auditors may participate fully in the class and expect instructor evaluation of their work. Auditors are expected to attend class regularly. The audited course will appear on the transcript with the grade notation of AU. A student’s load (total credit hours) does not include audit enrollments. Courses taken on 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.

Grade Reports
At the end of each semester, students may access their grades through the Shocker One Stop (SOS) option on the university website (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 must meet the undergraduate requirement for certification as a full-time student (12 hours). Graduate students may not enroll for more than 16 hours in the fall or spring semester (doctoral dissertation credit excluded), or 10 hours during an eight-week summer session. Exceptions will be considered for students admitted to programs requiring more than the maximum hours allowed. International students must enroll as full-time students (at least 9 hours of graduate credit coursework) each semester. Students placed on probation after admission are not allowed to enroll in more than 12 credit hours during semesters in which they are on probation. While the Graduate School sets no official maximum number of hours, other than the 16-hour limit, students holding assistantships should work with their advisors to arrive at a load appropriate to their situations. Graduate students holding assistantships during a fall or spring semester are expected to enroll in at least 9 credit hours of graduate coursework. Exceptions to allow graduate assistants to be enrolled in 6-8 hours may be approved by the program where the student is admitted. Special consideration for thesis and research enrollments may be obtained by petitioning the Graduate School.

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

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.

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 program 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 withdraw from the University must process a drop form for each class. Fees given in this Catalog were proposed for 2005-2006 and may be changed by the Kansas Board of Regents or the Kansas Legislature.

Basic Fees: Proposed 2005-2006
Basic fees for off-campus regular enrollment and continuing education credit courses follow:

<table>
<thead>
<tr>
<th>Resident</th>
<th>Nonresident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate tuition*</td>
<td>$125.55</td>
</tr>
<tr>
<td>Graduate tuition*</td>
<td>$170.55</td>
</tr>
<tr>
<td>University registration fee—all students</td>
<td>Per semester……$17.00</td>
</tr>
<tr>
<td>Facilities Use fee*—all students</td>
<td>Per credit hour…..$3.60</td>
</tr>
</tbody>
</table>
* Tuition and fees are for the Fall and Spring semesters and Summer session. **Facilities Use Fee will be assessed per semester and summer session capping the charge at 15 credit hours ($54.00).

Workshop and Off-Campus Fees
On-campus credit workshops cost $136.05 tuition and student fees, per credit hour. In addition, there is a $17 registration fee per semester and a facilities fee of $3.60 per credit hour. A specific course fee of $125.00 (undergraduate) or $178.00 (graduate) per credit hour is assessed for off-campus regular enrollment and continuing education credit courses or workshops. Non-credit workshops on campus include a facilities use fee ($5.00 for workshops of 7 or fewer consecutive days and $10.00 for longer-term workshops). Noncredit workshops off campus will not pay a facilities use fee unless they choose to do so for the purpose of having a vehicle on campus.

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 sufficient funds to make payments can apply for a loan through the financial aid office. 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.

Assessment and Collection
The University Controller is responsible for the assessment and collection of fees. The Associate Controller, two associate deans, an admissions officer, and a representative of the Vice President for Student Affairs assess, collect, and disburse all fees. A special assessment fund is established for the collection and disbursement of fees. The Assessment and Collection committee distributes the funds to departments for specific purposes as outlined in the University’s constitution and bylaws.
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.

Special Fees and Refunds

The student fees and facilities use fees, required of all students enrolled on the Wichita State campus, support the Educational Opportunity Fund, parking, student union, athletics, Heskett Center, Student Health Services, forensics, Student Government Association, University Forum Board, student publications, and other student activities. Prior to each semester, the Registrar establishes enrollment dates. Late registration is a special service resulting in extra costs for special staff and facilities. Students who register late are assessed late registration fees as published in the Schedule of Courses.

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

Students who drop and add credits will not be required to pay additional tuition/fees if the following conditions are met:
(a) The drop and add occurs in one transaction.
(b) There is an equal number of credit hours added as are being dropped.
(c) The credits being added are taken during the same period of the semester as the credit being dropped. Credit hours from workshops and other irregular courses cannot be offset against regular semester courses or vice versa. Refunds of tuition and fees will be granted for withdrawals in accordance with the dates and regulations published in the Schedule of Courses for a given semester. Requests for refunds which occur after the close of the regular refund period must be submitted on the Refund Waiver Form presented to the Office of the Registrar, (316) 978-3672.

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 Admissions Office 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. Request forms are available from the Registrar’s website. 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 extending classes begin for the upcoming semester/term. A $10 fee for immediate service will be charged for all requests that require same-day service. 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 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 requirements and to fulfill the program requirements for their graduate degree, advisors’ knowledge and expertise can assist students in their progress toward the degree. An advisor assigned at the time of admission to a doctoral program will assist the student in completing initial tasks such as enrollment, coordination of examinations, submission of a Plan of Study, and the formation of a Supervisory Committee. Depending on individual program procedures, the advisor may chair an Advisory Committee which also will be involved in the advising activities above. It is possible for the advisor to be named as Chairperson of the Supervisory or Dissertation Committee. Students with assigned advisors should consult their advisors for information on course prerequisites, content, and similar matters.

Graduate Courses
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 800-999 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 Role of the Graduate Dean 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 noncredit basis with appropriate approval under an auditor classification. To be enrolled as auditors, students must enroll in the same manner and pay the same fees as for credit courses at the University. Auditors may participate fully in the class and expect instructor evaluation of their work. Auditors are expected to attend class regularly. The audited course will appear on the transcript with the grade notation of AU. A student’s load (total credit hours) does not include audit enrollments. Courses taken on 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.

Grading System
A. Distinguished achievement. Credit given; four credit points per semester hour.
B. Superior achievement. Credit given; three credit points per semester hour.
C. Average achievement. Credit given; two credit points per semester hour.
D. Below average achievement. Credit given; one credit point per semester hour.
F. Failing work. No credit points assigned.

Incompletes
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 placed on probation after admission are not eligible for assistantship awards or federally funded financial aid during the semesters in which they are on probation. Students placed on probation after admission will automatically be moved off probation (to full standing) upon completion of their first 9 hours of graded graduate level coursework at Wichita State University with a minimum 3.00 grade point average. Only courses numbered 500 and above which are letter graded (A, B, C, D, F) can be used toward the 9-hour requirement. S/U or Cr/NCr courses will not count toward the 9-hour requirement. Students placed on probation after admission are not allowed to enroll in more than 12 credit hours during semesters in which they are on probation.

Dismissal
Students in any category may be dismissed from the Graduate School if they fail to maintain a grade point average of at least 2.00 in all work taken (including undergraduate courses) after admission. Students may be dismissed from their degree program or nondegree category A and placed in nondegree category B if they fail to attain a cumulative grade point average of at least 3.00 upon the completion of 9 graduate credits after admission on probation or placement on probation after admission. Students also may be dismissed from a graduate degree program if, in the opinion of the graduate faculty offering the program, they are unable to carry on advanced work or make satisfactory progress toward the degree. Students dismissed for this reason may be transferred to a 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 4.00 scale or higher for the readmission application to be considered. Meeting this standard, along with both Graduate School and program specific requirements, will permit readmission to a graduate program. Previously dismissed students who are recommended for admission under this policy will 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 admission and degree completion (in calculating initial and subsequent admission GPAs, in certifying the student’s eligibility for graduation, in certifying completion of certificate programs, and in computing the WSU grade point average). Although the last grade earned becomes the grade of record (replaces original grade), the original course grade remains on the graduate transcript. Within existing departmental and university guidelines, WSU courses repeated at another institution may be used to complete program requirements, but the repeat grade will not be counted in the WSU grade point average (as transfer courses are not counted in the WSU grade point average). A student must declare, at the time of enrollment, that the course is being repeated.

Cooperative Education & Work-Based Learning Credit Courses
Cooperative education is an academic program for undergraduate and graduate students who wish to combine classroom studies with academically related employment by being placed locally and nationally in paid work experiences closely related to their academic majors. Enrollment in cooperative education courses for graduate credit can be made only through those programs who have an approved course numbered 781 or 981 and titled Cooperative Education. No other course titles such as independent study, special topics, and so forth can be used for cooperative education enrollment. Course grades are graded Cr/NCr. Graduate students desiring to participate in cooperative education classes should first consult with their program and the Graduate School. The Cooperative Education and Work-Based Learning Program office is located in 223 Grace Wilkie Hall. The telephone number is (316) 978-3688.

Satisfactory/Unsatisfactory Graded Courses
Certain approved courses that carry graduate credit are graded S/U (Satisfactory/Unsatisfactory) for all students enrolled. Such courses are identified in the Schedule of Courses, or students enrolling in special offerings for graduate credit will be informed of the S/U grading by the instructor if the S/U requirement 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 or Credit may be used toward the granting of a graduate degree (excluding dissertation, thesis, and other independent study activities that are terminal degree requirements). Refer to individual program areas as they may differ regarding this 6-hour limit.

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 requirements; (c) the credit is applicable in terms of content to the student’s program of study at WSU, and must carry a minimum grade value of 3.00 on a 4.000 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.
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 as 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.
Workshops, Extension, Correspondence Credit, and Credit by Exam

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

1. The work is approved by the major department.
2. The work is approved by the dean of the Graduate School.
3. The work is an integral part of a program planned by the candidate and the advisor and listed on an approved Plan of Study. Graduate credit cannot be earned under a credit by examination program, and correspondence courses cannot be accepted for graduate credit.

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 readable copy of the degree recipient’s driver’s license or Shocker ID card.

Committee Structure
Communities for program completion exams are recommended by the 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 dean’s representative, must be outside the major program. In addition to guiding the student to successful completion of the dissertation, this committee conducts the final oral examination.

Credits Required
All master’s degrees require a minimum of 30 credit hours of graduate credit work, including 18 hours in courses numbered 700 and above, excluding workshops. Some programs require more than 30 credit hours, in which case at least 60 percent of the courses must be numbered in the 700 level or above, excluding workshops. The total number of hours for the doctoral degree varies with the major department offering the program, including the division between coursework and dissertation hours. At least 60 percent of the hours beyond the master’s degree must be in courses numbered 800 and above. Specific program requirements are listed in the individual program’s section of the Graduate Catalog.

Concentrations in Graduate Programs
Concentrations, consisting of 9-12 credit hours, are offered within existing degree programs where the 9-12 credit hours constitute a coherent academic topic or theme. The concentration may include required and/or elective courses as long as the listing of elective courses (from which the concentration courses are selected) forms a coherent academic topic or theme. The Graduate Council and the graduate dean must approve concentrations. Once approved, the program area may 1) use the word “concentration” in their publications and 2) may have the concentration identified on the student’s transcripts and diplomas (for example, Master of Accountancy/Taxation). The graduate Plan of Study, filed with the Graduate School, must specify the name of the concentration and the courses to be taken as concentration courses.

Certificates in Graduate Programs
Students completing the requirements for a Graduate Certificate must submit the Graduate Plan of Study form and the Application for 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 programs offering Graduate Certificates should have a process for knowing who is completing certificate work. Certificate and hours are expected to inform students that a plan of study, certificate degree form, and 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.

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 nine years for doctoral degrees). Some departments may 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 study and application fee must be filed with the Graduate School office.

**Residency Requirement**

Doctoral students are required to spend at least two continuous semesters (summer excluded) as 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 semester of admission. If, in these programs permitting admission directly after the bachelor’s degree, the doctorate must be completed within nine years from the effective 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 Exception to Graduate Regulations must be filed and approved to waive the time limits for the course in question. To have courses validated, students must submit a Validation Request Form to the Graduate School for validation approval. The instructor must identify on the form the process that will be used to certify B or better performance by the student. Transfer courses and work that originally received a grade of C or below may not be validated. Courses completed 10 or more years before the degree is granted, even if previously validated, may not be used to meet degree requirements.

**Thesis or Research Credit**

When a thesis is part of a student’s master’s degree program, and for all doctoral students, thesis or dissertation or research project credit must show on their graduate transcripts. The transcript will normally carry the grade of I (incomplete) until the thesis or dissertation is completed and the student has met the requirements of the supervisory committee and the Graduate School. An S (satisfactory) or grade of B or better is required for an acceptable thesis or dissertation. Thesis or dissertation hours in excess of the minimum required for the degree will be graded S. Students writing a thesis or dissertation or engaged in research must be enrolled in courses entitled Thesis, Dissertation, or Research each semester in which they receive advice, counseling, or research direction from their advisors. This includes the semester of graduation. Enrollment is for the number of hours that accurately reflects 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. 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.

**Thesis Preparation**

Three copies of the thesis/dissertation must be bound on white 8 1/2 x 11 inch paper. All copies must be on acid-neutral, 20-24 weight bond with a minimum rag content of 25 percent. Digital materials that are considered a part of the document must be included in a pocket attached by the bindery to the spine back cover. The Graduate School will transmit two copies of the document to the University Library. The third bound copy will be presented by the student to the academic department that supervised the work. For additional information about the preparation of the thesis, the student is referred to the Graduate School publication, Guide to the Preparation of Theses and Dissertations, which can be purchased in the WSU Bookstore.

**Tool or Language Requirements**

The Graduate School has no overall 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; (c) the credit is applicable in terms of content to the student’s program of study at WSU, and must carry a minimum grade value of 3.00 on a 4.000 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 an equivalent 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.

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.

Degree Program Regulations
1. To pursue a graduate degree at Wichita State, students must be admitted to the specific program for which they are seeking a degree. Students may not be admitted to more than one graduate program at a time. Submission of a second application will result in the cancellation of the first.

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

6. 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.

7. 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.

8. Graduate students must be enrolled in the semester of graduation. Such enrollment recognizes the use of university resources, including faculty and staff, as part of degree completion.

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

10. 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.
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 Sawan, chairperson and graduate coordinator

Industrial and Manufacturing, (316) 978-3425—Hossein Cherughi, chairperson and graduate coordinator

Mechanical, (316) 978-3402—Hamid Lankarani, 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 of the national Institute for Aviation Research on the Wichita State campus.

Master of Science

Admission Requirements
To be admitted to the MS program, students must have completed the equivalent of an undergraduate degree in an engineering or related field. Students with deficiency in certain areas may be required to take additional courses. Master’s engineering programs require a minimum GPA of 3.000/4.000 for admission to full standing, 2.750/4.000 for admission on probation, and 2.500/4.000 for admission to nondegree, category B. All GPAs are based on the last two years or approximately 60 credit hours of coursework. These standards may be waived at the discretion of the individual department based on an applicant’s other qualifications. Scores for the general test of the Graduate Record Examination (GRE) are recommended for all students applying from non-U.S. institutions. 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 coursework.

Three options are available:

(1) the thesis option requires a minimum of 24 hours of coursework plus a minimum of 6 hours of thesis,
(2) the directed project option requires a minimum of 30 hours of coursework plus a minimum of 3 hours of directed project, and
(3) the coursework option requires a minimum of 33 hours of coursework. 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 pass a written exit exam. Details of the exit exam can be obtained from the department graduate coordinator.

Doctor of Philosophy
PhD programs are offered by the four departments of engineering at WSU. 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 to be able to meet the course breadth requirements. The student is recommended to the graduate dean for admission by the department chairperson in consultation with the graduate coordinator of the department where the graduate student will be housed.

Plan of Study and Advisory Committee
Within the first 12 hours of PhD coursework, the department chairperson, in consultation with the graduate coordinator and the student, recommend to the graduate dean an advisory committee for each student. The committee will be composed of a minimum of five graduate faculty, with at least four having full membership including the chairperson who also must have authorization to chair doctoral committees. A majority of the advisory committee members must be from the major department and at least one member must be outside the student’s major department. The chairperson of the advisory committee should be the student’s dissertation advisor. The student and advisory committee chairperson will formulate a Plan of Study and a tentative dissertation topic for approval by the advisory committee, the department chairperson or graduate coordinator, and the graduate dean. The Plan of Study will include designation of major and minor fields and all graduate-level coursework which is applicable to the degree.

Course Breadth Requirements: To ensure proper breadth of coursework, the Plan of Study must include at least 15 hours in the student’s major field and 18 hours outside the major area. The 18 hours must include a minimum of 6 hours in a minor area (defined by the advisory committee) and a minimum of 6 hours of mathematics/statistics. A Plan of Study normally contains about 60 hours of coursework, including courses from the master’s degree, and should have a minimum of 60 percent of the hours (24 dissertation hours included) beyond the master’s work at the 800-900 level or equivalent.

Comprehensive Examination
After the PhD Plan of Study has been approved and after sufficient coursework has been completed, the student must take the comprehensive examination given by the advisory committee. The comprehensive examination will cover the major and minor fields and any course that the advisory committee deems necessary. The student’s advisory committee is responsible for ensuring that the student takes the comprehensive examination at the appropriate time. No part of the comprehensive examination may be attempted more than twice. Upon passing the comprehensive examination, a student is known as an aspirant for the PhD.

Time Limits and Residency Requirement
From the time the student is admitted to the program, no more than six years may elapse until requirements for the degree have been completed. However, the student may petition the advisory committee for a leave of absence to pursue full-time professional activities related to his/her doctoral program and long-range professional goals. At least two semesters shall be spent in residency on the WSU campus involved in full-time academic pursuits. This may include up to half-time teaching and research. Well-designed plans for obtaining dissertation research experience under the supervision of the student’s advisor will be considered in lieu of the residency requirement.

Dissertation Approval Examination (DAE)
When the PhD aspirant has completed the major portion of the coursework, the advisory committee can petition for permission to administer the DAE. The aspirant 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.

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: Larry D. Paarmann, Ravindra Pendse, Steven R. Skinner, Asrat Teshome, John M. Watkins
Assistant Professors: Coskun Cetinkaya, Sudharman Jayaweera, 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, computer and network science, 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 of 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: departmental consent.

ECE 585. Electrical Design Project I (2). 3L. A design project under faculty supervision chosen according to the student’s interest. Prerequisites: COMM 111 and departmental consent. May not be counted toward a graduate electrical major.

ECE 586. Introduction to Communication Systems (4). 3R; 3L. Fundamentals of communication systems; models and analysis of source, modulation, channel, and demodulation in both analog and digital form. Reviews Fourier Series, Fourier Transform, DFT, Probability, and Random Variables. Studies in Sampling, Multiplexing, AM and FM analog systems, and additive white Gaussian noise channel. Additional topics such as PSK and FSK digital communication systems covered as time permits. Prerequisites: ECE 383 and either STAT 471 or IEN 254.

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

ECE 594. Microprocessor Based System Design (4). 3R; 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 gives hands-on experience. Prerequisites: ECE 394, or 238 and 294.

ECE 595. Electrical Design Project II (2). 3L. A continuation of ECE 585. 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 383, IE 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 signaling. 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 count towards an electrical engineering degree. Prerequisites: ECE 594 and 599.

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 intrusions. 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 programming-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 138 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 688. Power Electronics (4). 3R; 3L. Deals with the applications of solid-state...
electronics for the control and conversion of electric power. It presents an overview of the role of the thyristor in power electronics applications and establishes the theory, characteristics, and protection of the thyristor. It covers controlled rectification, static frequency conversion, and voltage control and harmonic reduction techniques. It also presents requirements of forced commutation methods as applied to DC-DC control and firing circuit requirement and methods. It 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). An introductory course which covers fundamental digital telecommunication networks and systems. Includes both passive and active filters. Discusses fundamental concepts and techniques of digital signal processing. Time domain operations and techniques include difference equations and convolution summation. Covers Z-transform methods, frequency-domain analysis of discrete-time signals and systems, 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 736. Data Communication Networks (3). Presents the theoretical and practical aspects of digital and data communication systems. Includes the modeling and analysis of information sources as discrete processes; basic source and channel coding; multiplexing and framing; spectral and time domain considerations related to ASK, PSK, DPSK, QPSK, FSK, MSK, and other techniques appropriate for communicating digital information in both base-band and band-pass systems; intersymbol interference; effects of noise on system performance; optimum systems; and general M-ary digital systems in signal-space. Prerequisites: ECE 586 and 754.

ECE 737. Wireless Networking (3). Covers topics ranging from physical layer to application layer in the wireless and mobile networking fields. Explores physical layer issues of wireless communications, wireless cellular telephony, ad-hoc networks, mobile IP and multicast, wireless LAN (IEEE 802.11), security, Bluetooth and WAP, etc. Imparts general knowledge about wireless communication technologies and ongoing research activities. Prerequisite: ECE 736.

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 594 or equivalent.

ECE 744. Introduction to VHDL (3). An introduction to VHDL hardware description language. Includes different types of modeling techniques using state-of-the-art CAD tools. Covers extensively structural modeling, structural modeling, and data-flow modeling. Design assignments include design and simulation of both combinational and sequential circuits using VHDL. Prerequisites: ECE 138 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 IENG 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 736 or departmental consent.

ECE 765. Routing and Switching II (4). 3R; 3L. Discusses different bridging techniques, including SBR, SRB, 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). Provides basic concepts in information assurance and security including encryption, digital certificates, security in networks, operating systems, and databases. Topics in intrusion detection, legal and ethical issues in information assurance will also be discussed. Prerequisites: ECE 736 or 764, or departmental consent.

ECE 777. Selected Topics in Electrical Engineering (1-4). An advanced study of topics in electrical engineering. 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 the approximation of various filters, the use of power system component modeling, and the use of power system power system models. Emphasizes the frequency response of discrete-time systems and the relationship to analog systems. Prerequisite: ECE 383 or departmental consent.

ECE 782. Digital Signal Processing (3). Presents the theoretical and practical aspects of digital signal processing. Time domain operations and techniques include difference equations and convolution summation. Covers Z-transform methods, frequency-domain analysis of discrete-time signals and systems, 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. Emphasizes the steady-state 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 power systems problems.
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 stability, and system protection. Prerequisite: ECE 598.

Courses for Graduate Students Only

ECE 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: ECE 510.

ECE 816. Advanced Signal Processing for Wireless Communications (3). Introduces the role of statistical signal processing in wireless communications and studies various signal processing techniques. Begins with an overview of the fundamentals of wireless communications and physical properties of the wireless channel. Covers topics such as adaptive filtering, interference suppression, space-time processing and MIMO techniques. Corequisites: ECE 726 and 754.

ECE 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, analysis of optimum detectors, elements of parameter estimation and signal estimation. These ideas are basic to statistical signal processing and communications transceiver design. Prerequisite: ECE 754.

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

ECE 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 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 are fantom variables, and are subject to the same types of statistical analysis as data obtained from real systems. Prerequisites: ECE 754.

ECE 844. Advanced Computer Architecture I (3). Covers advanced architectural subjects—microprogramming, economics of chip design, instruction set performance, and pipelining. Prerequisites: ECE 594 or equivalent.

ECE 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 nor the noise. Concerned with the design, analysis, and application of recursive filtering algorithm that operate in an environment of unknown statistics. Content includes least mean-square (LMS) filters, recursive least-square (RLS) filters, and recursive least-squares lattice (LSL) filters. All are adaptive and self-designing. Includes concepts of convergence, tracking ability, and robustness. Prerequisite: ECE 754.

ECE 864. 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, voice digitization and coding, quality of service issues, and current research. sandbox lab allows students to design, troubleshoot, and test different VOIP scenarios. Prerequisites: ECE 764 and graduate standing in ECE.

ECE 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.

ECE 886. 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, voice digitization and coding, quality of service issues, and current research. sandbox lab allows students to design, troubleshoot, and test different VOIP scenarios. Prerequisites: ECE 764 and graduate standing in ECE.

ECE 887. Special Topics in Electrical Engineering (3). New or special courses are presented under this listing on sufficient demand. Repeatable for credit. Prerequisite: departmental consent.

ECE 888. MS Directed Project (1-3). A project conducted under the supervision of an academic advisor for the directed project option. Requires a written report and an oral presentation on the project. Graded S/U only. Prerequisite: consent of academic advisor.

ECE 889. Speech Digital Signal Processing (3). An introductory study in speech signal generation and digital speech signal processing. Includes speech generation and perception, acoustic phonetics, models of speech signals and speech production, analysis methods of digital speech signals, digital representations of speech signals, short-time Fourier transforms and the application to spectograms, pitch and formant estimation, parametric and nonparametric methods of signal representation, linear prediction methods, speech data compression, some methods of speech synthesis and recognition, and speech signals in the presence of noise. Prerequisites: ECE 754.

ECE 893. Digital Filters (3). A study of digital filter design methods. Includes both IIR and FIR filters. Discusses software and hardware implementations; introduces two dimensional digital filters. Prerequisite: ECE 782 or departmental consent.

ECE 897. Operation and Control of Power Systems (3). Acquaints electric power engineering students with power generation systems, their operation in economic mode, and their control. Introduces mathematical optimization methods and applies them to practical operating problems. Introduces methods used in modern control systems for power generation systems. Prerequisite: ECE 598.

ECE 960. Advanced Selected Topics in electrical Engineering (1-3). Presents new or specialized advanced topics in engineering. Repeatable for credit Prerequisite: instructor’s consent.

ECE 975. PhD Dissertation (1-16). Graded S/U only. Repeatable for credit. Prerequisite: admission to doctoral aspirant status. ECE 981. Co-op (1). A work-related placement with a supervised professional
experience to complement and enhance
the academic program. Intended for
master’s-level or doctoral students in
Electrical Engineering. Repeatable for up
to 8 hours. May not be used to satisfy
degree requirements. Prerequisites:
departmental consent and a graduate GPA
of at least 3.0. S/U only.

ECE 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 or
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 vs.
large vocabulary models. Prerequisite:
ECE 882 or departmental consent.

ECE 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-95 forward and reverse
wireless communication links under multi-
path mobile fading environment using
analysis techniques and simulation.
Analyzes pseudo-noise (PN) signal
generation, the band-limited waveform
shaping filter, convolutional coding,
interleaver, Walsh code orthogonal
modulation, Rake finger receivers, non-
coherent Walsh orthogonal sub-optimal
demodulation, other simultaneously
supportable subscribers, and third
generation CDMA. Prerequisite: ECE 726.

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

ECE 993. Large Scale Control Systems
3). Sensitivity analysis of deterministic
and stochastic systems; sources of
uncertainty in control systems, e.g., plant
parameter variation, time delays, small
nonlinearities, noise disturbances, and
model reduction; quantitative study of the
effects of uncertainties on system
performance; low-sensitivity design
strategies, state and output feedback
design; sensitivity function approach,
singular perturbation, and model education
techniques; adaptive systems; and near-
optimal control. Prerequisite: ECE 893.