

THE UNIVERSITY
OF TENNESSEE
AT CHATTANOOGA

GRADUATE SCHOOL

CATALOG 2005-2006

UTC Graduate School



Correspondence Directory

The course offerings and requirements of the University are continually under examination and revision. This catalog presents the offerings and requirements in effect at the time of publication, but does not guarantee that they will not be changed or revoked. Current information may be obtained from the following sources:

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Business Office

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Check out the UTC Homepage

<http://www.utc.edu>

The Graduate School site

<http://www.utc.edu/graduateschool>

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The University of Tennessee at Chattanooga does not discriminate on the basis of race, sex, color, religion, national origin, age, handicap, or veteran status in provision of educational opportunities or employment opportunities and benefits. The University does not discriminate on the basis of sex or handicap in the education programs and activities which it operates, pursuant to the requirements of Title IX of the Education Amendments of 1972, Pub. L. 92-318; Section 504 of the Rehabilitation Act of 1973, Pub. L. 93-112; and the Americans with Disabilities Act of 1990, Pub. L. 101-336, respectively. This policy extends to both employment by and admission to the University. Inquiries and charges of violation should be directed to the Office of the Director for Affirmative Action, 104 Founders Hall, (423) 425-4124. EO40224-001-05

The University

Mission

The University of Tennessee at Chattanooga will serve as a national model of an engaged metropolitan university whose faculty, staff and students, in collaboration with external partners, employ the intellectual resources of the liberal arts and professional programs to enrich the lives of those we serve.

Guiding Principles

The University of Tennessee at Chattanooga interprets the land grant spirit of service for the 21st century through people, partnerships, and performance:

People

- We are committed to preparing educated men and women for meaningful and productive lives.
- We educate students for life in a global society.
- We promote and celebrate the diversity of people and ideas.
- We provide reasonable and affordable access to higher education.

Partnerships

- We embrace active and collaborative learning through partnerships among students, faculty, staff and the community.
- We encourage frequent, respectful and collegial interaction among students, faculty, staff and community.
- We provide opportunities for our students to augment intellectual development through participation in artistic, cultural, social and athletic activities.
- We develop partnerships that strengthen the university and our community.

Performance

- We prepare our students and alumni to apply knowledge to the challenges of a changing society.
- We use the interconnected activities of teaching, research and service to promote learning, problem solving and innovation.
- We use technology to enhance teaching, research, operations and community outreach.
- We use our resources in a prudent manner to accomplish our mission.
- We use multiple measures to evaluate the performance of our students, faculty, staff and programs.

Campus Overview

The University of Tennessee at Chattanooga educates students to assist in the enlightening and disciplining of their minds and their preparation for ethical and active leadership in civic, cultural, and professional life. To achieve this, the University engages in the complementary and mutually supportive activities of teaching, research and service.

The University combines the advantages of a strong private tradition with those of a state-assisted institution. Dedicated to providing quality education to a diverse population approaching 9,000 students, UTC seeks to meet its responsibilities as an emerging metropolitan university, actively involved with regional municipalities, schools, business and industry and offering expanded instructional opportunities that respond to area needs. The University's ability to fulfill this role is enhanced by continuing support from its alumni, community, and the University of Chattanooga foundation, a public, nonprofit organization which administers most of UTC's private endowment.

The hallmark of the University is outstanding teaching by a talented and committed faculty. Small classes, personalized advising, and frequent opportunities to interact with faculty provide a student-oriented learning experience.

Research is a priority for the campus. Effective teaching and faculty involvement in scholarship, research and creative activities are interdependent. These activities foster the intellectual growth of the faculty, provide students with opportunities to participate in the development and application of new knowledge and enhance the region's growth. A program of well-endowed centers and chairs, (including a significant number of chairs of Excellence) and professorships builds upon a tradition of faculty research.

The University's programs provide both a firm grounding in the liberal arts and strong professional preparation. Bachelor's and master's degrees, post-master's specialists degree, and two doctoral degrees are awarded through our Colleges of Arts and Sciences, Business Administration, Health, Education and Professional Studies, and Engineering and Computer Science.

Education at UTC goes beyond the traditional classroom and laboratory as befits an institution where service is also a high priority. UTC faculty members continue to bring their professional expertise to bear on the concerns of the larger community. Moreover, the University takes advantage of its metropolitan location to provide firsthand learning experiences to students through career-related work experience. Innovative programs, such as our University Honor Program, serve exceptionally talented students. Off campus, the University offers credit and noncredit instruction for professional and intellectual development, extending its educational mission to an even broader range of citizens.

UTC has taken the land grant spirit and applied it in Tennessee and the surrounding region to effect positive social and economic change. In its constant pursuit of academic excellence, UTC is committed to several strategic imperatives:

- Claiming the assets of technology
- Recruiting, retaining and celebrating diversity in faculty, staff and students
- Demonstrating accountability
- Enhancing the learning environment
- Using evaluation to drive change.

As UTC looks to its future and the emerging needs of the metropolitan region, it will continue its commitment to quality education, excellent research, and dedicated service.

Accreditations

The University of Tennessee at Chattanooga is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097. Telephone: 404-679-4501; Fax: 404-679-4558) to award bachelor's, master's, specialist, and doctoral degrees. It is also accredited by the National Council for Accreditation of Teacher Education, the National Association of Schools of Music, the American Chemical Society, the Engineering Accreditation Commission/Accreditation Board for Engineering and Technology, the American Assembly of Collegiate Schools of Business, the National League for Nursing, the American Physical Therapy Association, the National Association of Schools of Public Affairs and Administration, and the International Association of Counseling Services. It is approved by the American Association of University Women. The University is a charter member of the Southern University Conference and is a member of the American Association of Colleges for Teacher Education, American Alumni Council, American Council on Education, Association of American Universities, Association for Continuing Higher Education, Association of Urban Universities, American Association of State Colleges and Universities, Council of Graduate Schools in the United States, Conference of Southern Graduate Schools, The Tennessee Conference of Graduate Schools, National University Extension Association, and the Tennessee College Association.

History

When the Methodist Episcopal Church began to explore the possibilities of developing a central university in the South, Chattanoogaans came forward to work with the church in this effort. Since its founding as Chattanooga University in 1886, The University of Tennessee at Chattanooga has developed an institutional excellence which rests on an unusual blend of the

private and public traditions of American education.

For 83 years the University was a private school. Three years after its founding, the University was consolidated with another church-related school, East Tennessee Wesleyan University at Athens, under the name of Grant University. In 1907 the name University of Chattanooga was adopted.

In 1969 the University of Chattanooga and a junior college, Chattanooga City College, merged with The University of Tennessee, one of the oldest land-grant universities in the nation, to form the UTC campus. Pledged to the service of the entire state, The University of Tennessee has emerged as a statewide system consisting of four primary campuses. The new campus was given the mandate to devote the major portion of its resources to the development of excellence in undergraduate education and in selected areas of graduate study.

The University's wide diversity of degree programs has attracted a current enrollment of more than 8,600 students representing all Tennessee counties, all states, and many foreign countries.

Community

The University is located only a few blocks from the urban area of Chattanooga, a city that is both highly industrial and rich in natural beauty. Claiming more than 600 industries, Chattanooga lies at the foot of Lookout and Signal Mountains where the Tennessee River forms Moccasin Bend. These sites possess historical significance as well as beauty in a city steeped in the heritage of the Civil War.

The cultural environment of Chattanooga is enhanced by contributions from the University and the many civic organizations that support the arts through dramatic productions, concerts, and art exhibits. The city also benefits from an unusually large number of private foundations which call Chattanooga home. Ten city parks, seven public golf courses, and a 35,400 acre lake provide a variety of recreational activities.

With a population of about 162,170 in a metropolitan statistical area of over 466,647, Chattanooga is easily accessible from all parts of the nation by air and bus and is a pleasant two-hour drive from Atlanta, Nashville, Knoxville, and Birmingham.

The University's 101-acre urban campus is located within easy walking distance of the business section of Chattanooga as well as the 21st Century Waterfront. Students also enjoy the close proximity of the Bluff View Art District, the Tennessee Aquarium, the Walnut Street Bridge, and Coolidge Park.

The Graduate School

Mission Statement

The mission of the Graduate School is to provide rigorous advanced instruction, applied research opportunities, financial support, and other support services for graduate students. The Graduate School upholds high program and academic standards in serving the needs of the region, state, and nation. The Graduate School also takes into account the increasing availability of information and the resultant creation of knowledge made possible by advances in technology.

Vision Statement for Distance Education

The vision of graduate distance education is to provide high-quality courses and services so that students may access learning opportunities through the use of appropriate technology and alternative methods of delivery.

Graduate Degree Programs

Degree	Major	Admission Test	Other Admission Requirements
DOCTORAL			
Ph.D	Computational Engineering	GRE (TOEFL int'l students)	Master Degree, 2 years work for experience, 3 letters of recommendation, statement of purpose, interview, admissions workshop
Ed.D	Learning and Leadership		
D.P.T.	Physical Therapy		PT Application
SPECIALIST			
Ed.S.	Advanced Educational Practice Educational Technology School Psychology	GRE	Score of 1350 with no section less than 400; GPA of 3.25 or higher on master's degree work; written statement of personal intent; three references; resume; interview; computer literacy
MASTER'S DEGREES			
M.A	English Literary Study Professional Writing	GRE	3.0 in English major or in 21 hours of English above 100 level
M.Acc. M.B.A.	Accountancy Business Administration	GMAT	Business Administration or accounting major or equivalent
M.Ed.	School Leadership	MAT/GRE	Professional teacher certification; teaching experience recommended; portfolio (three recommendations letters, resume, leadership essay); portfolio review Interview
	Elementary Education Art Early Childhood Elementary Education Education Technology Inclusion Reading Research Licensure Urban Specialist	PPST/CBT (Praxis I)	
	Counseling Community School	GRE/MAT MAT/ GRE	Three letters of recommendation; writing proficiency test; interview; personal statement

	Secondary Education Art Educational Technology English Health Education History Inclusion Licensure Mathematics Physical Education Sciences and Environmental studies Social Sciences Research/Thesis	PPST/CBT (Praxis I)	
	Special Education Early Childhood Emotional/Behavioral Disabilities Gifted Mild Disabilities Moderate/Severe Disabilities	GRE or PPST/CBT (Praxis I)	Two letters of recommendation
M.M.	Music Education Performance		placement exam; teacher certification placement exam; division jury.
M.P.A.	Public Administration Nonprofit Administration	GRE	Three letters of recommendation; Supplemental form
M.S.	Computer Science Engineering Chemical Sciences Civil Computational Engineering Electrical Industrial Mechanical Engineering Management Environmental Science	GRE	Letter of recommendation 2.75 GPA; Three letters of recommendation; research proficiency; personal statement; resume.
	Health and Human Performance Entry level Advanced Health & Productivity Management	GRE	Supplemental data; 3 letters of recommendation; resume; cover letter Post certification, NATA certification also required.
	Psychology Industrial/Organizational Research	GRE	Three letters of recommendation; supplemental form.

M.S.C.J.	Criminal Justice	MAT/GRE	Supplemental form; writing proficiency; Two letters of recommendation
M.S.N	Nursing Administration Anesthesia Anesthesia Clinical Specialist Education Nurse Practitioner	MAT	Bachelor's degree in nursing; 3.0 average in nursing courses; R.N. licensure or eligibility for licensure in Tennessee; at least one year's patient care experience; three letters of recommendation; supplemental written materials

Certificate Programs

Computer Science
Computer Networking
Internet Application Programing

English
Writing/Rhetoric

Education
School Leadership
Urban Specialist (Elementary)

Engineering Management
Project Management
Quality Management
Fundamentals of Engineering Management

Nursing
Family Nurse Practioner
Health Care Informatics
Nurse Anesthesia

Public Administration
Non profit management

The Graduate School coordinates and supervises activities relating to the graduate degrees offered by UTC.

For information concerning a specific program, refer to the appropriate department and the *Graduate Catalog*. For application materials, write to:

The Graduate School Office, Dept 5305
615 McCallie Avenue; Chattanooga, Tennessee 37403-2598

Admissions and Regulations

ADMISSION PROCEDURES

GRADUATE SCHOOL REQUIREMENTS

An applicant for admission to The Graduate School must: (1) hold a baccalaureate degree from a regionally accredited college or university or foreign equivalent and (2) have a minimum grade point average of 2.5 (based on a 4.0 scale) on all undergraduate work taken prior to receiving the baccalaureate degree or a 3.0 in the senior year. Students who do not meet this admission requirement should contact the staff of the Graduate School office to discuss alternative requirements. Applicants who are seeking admission to a degree program must submit scores on the appropriate standardized test as required by the proposed major department.

Applicants for the *Education Specialist* degree must have earned a master's degree from a regionally accredited college or university.

Applicants for *Doctoral* degrees often must have earned a master's degree.

An applicant who graduated from an unaccredited institution may be considered for admission with a 3.0 cumulative average. Scores must be submitted from the appropriate admissions test if the applicant is seeking admission to a degree program.

To ensure adequate consideration, the applicant should submit the completed application and supporting credentials to the Graduate School office at least one month prior to the beginning of the semester or summer term for which admission is desired. In addition, some departments and programs have established application deadlines. Please refer to the appropriate college or department for this information. Those filing applications after the established submission dates cannot be assured their credentials

will be processed in sufficient time to secure admission for that term. Financial aid may also be delayed. An applicant for admission must furnish the following materials to the Graduate School office:

1. A completed, signed application form provided by UTC.
2. Payment of the \$25 nonrefundable application fee.
3. An official transcript from each college or university previously attended. These transcripts must be sent directly from the institution to the Graduate School office.
4. An official report of the applicant's score on the prescribed test for admission.
5. Supplemental application materials as required by program.

DEGREE PROGRAM REQUIREMENTS

An applicant for admission to a degree program should refer to the appropriate college or department for specific admission requirements since some degree programs require a higher academic average, and additional admission requirements or utilize a formula for determining admission.

If an applicant does not enter UTC in the semester or summer term for which application was made, the applicant's file will be destroyed after one year unless he or she requests and is granted permission to enter at a future date.

All application credentials become the property of the University and are not returnable nor forwardable to other institutions.

International Students

The University wishes to encourage qualified graduate applicants from other countries. The foreign applicant must submit the following materials to the Graduate School office:

1. A preliminary application form.
2. An application for admission on the form provided by the University.
3. A draft drawn on a U.S. bank or money order for the \$25 U.S. *nonrefundable* application fee.

4. Copies of authorized school or university records with certified translations if the records are in a language other than English. Translations must include descriptive titles of courses studied and grades gained in final examinations.
5. Official scores on the Test of English as a Foreign Language (TOEFL). An official score of 550 or above is required. (A score of 213 or above is required for a computer-based test.)
6. Official scores on the admission test required by the major department. International students seeking admission to the M.B.A. program must submit scores of 450 on the GMAT.
7. Evidence of financial resources sufficient to provide adequate support (as determined by the University) during the applicant's period of residence as a student.
8. International students will be required to take an English proficiency examination after arriving at the University and all English courses recommended as a result of the test.
9. All international students are required to purchase health insurance through UTC.

All materials must be received by The Graduate School office approximately three months prior to the semester in which the applicant hopes to enroll. An accepted applicant will receive a certificate of acceptance and an I-20 form, which must be shown to the consular officer of the United States to whom the student applies for a student visa. The I-20 form states that each student must attend UTC one full-time semester upon arrival. By fee payment, each international student must purchase health insurance through UTC.

UTC Students Eligible for Graduate Credit

Students who are within 30 semester hours of completing requirements for the bachelor's degree at The University of Tennessee at Chattanooga may apply for admission to graduate courses if they have an overall grade point average of 3.00 or higher and are recommended by the head of his or her major department. Subject to the approval of the dean of The Graduate School, students may earn up to *nine semester hours* of graduate credit prior to completing the bachelor's degree. These graduate hours do not count toward completion of an undergraduate degree. Approval must be obtained each semester by completing the special application form which is available in the Graduate School office or from the Web site. The approved application must be submitted to the Registration Office at the time of registration.

Admission Classifications

Several admission classifications are utilized by The Graduate School. Applicants should apply for admission according to the one classification which applies to their educational objectives. International students, however, must apply for admission as degree students only.

Conditional Student

An applicant who does not have the requisite grade point average may be classified as a conditional student. In this classification, a degree-seeking student takes six or nine graduate hours as specified by the graduate program coordinator. Non-degree seeking students must have the approval of the director of The Graduate School. Within two semesters of initial enrollment, the applicant must earn a grade of B or better in each graduate course and a cumulative 3.0 grade point average on all graduate courses

taken during this time, or the applicant will be dismissed. At the completion of the conditional work, as specified in the admission letter, the program coordinator and dean of The Graduate School will review the student's application materials and make a final admissions decision. If the student is accepted as a degree-seeking student, courses taken during conditional admission may, with the recommendation of the program coordinator, be accepted into the degree program.

Conditional admission is a one-time opportunity extended to students who are United States citizens or permanent residents to prove that, despite a low grade point average in undergraduate studies, they can now perform satisfactorily in graduate classes. *Enrollment in graduate courses under a conditional admission status does not, however, imply admission into a degree program.* It should also be understood that fully admitted graduate students will be given priority in enrollment. Students classified with conditional admissions are not eligible for financial aid.

Provisional Graduate

An applicant who meets the admission requirements but whose file is incomplete may be admitted as a provisional graduate student. *Students holding any kind of provisional admission are not eligible for financial aid.* This type of admission is valid for one semester and may not be renewed. Further, the provisional graduate must have his or her file completed by the end of the first semester or summer term he or she enrolls. If the student fails to complete the graduate file on the specified date, the student will not be permitted to register for a future term.

Degree Graduate

Admission as a degree student to a master's specialist or doctoral program is by departmental recommendation and graduate school approval only. Thus, an applicant who wishes to be admitted as a degree graduate must file an application, transcripts, specified test scores and supplemental application materials far enough in advance to allow for evaluation by the department or school. The evaluation will include a review of the applicant's undergraduate program and the specification of any prerequisite courses needed to ensure adequate background for the graduate program. In addition to the above requirements, students whose native language is not English are required to submit scores on the Test of English as a Foreign Language (TOEFL).

Nondegree Graduate

An applicant who meets admission requirements and wishes to enroll in graduate or undergraduate courses and earn credit without reference to a degree program may be admitted as a nondegree graduate student.

A student classified as nondegree who subsequently wishes to be admitted to a degree program must file a formal request for this change with The Graduate School office. In addition, the student must submit supplemental application materials as required for the proposed degree program. A maximum of nine semester hours earned as a nondegree student will be accepted toward degree requirements. The Graduate School cannot assure a student classified as nondegree that all or any work completed in this status will apply toward a degree.

Auditor

Adults who wish to attend classes without earning credit or receiving grades may be admitted as auditors. A graduate applica-

tion and transcripts are required. (Elder scholars do not need to submit transcripts.) Individuals may register as auditors provided space is available in the class desired and the instructor accepts auditors. Fees for audit are the same as for credit registration.

Auditors are under no obligation of regular attendance, preparation, recitation, or examination, and academic records are maintained only for audited courses in which the student attends at least 75 percent of the class sessions. They receive no grades and no credit. The degree of their participation in class discussion, laboratory, or field work shall be determined by the instructor of the class. (Please see pages 24-27 for fees.)

Post-master's Graduate

An applicant who has a master's or terminal degree from an accredited institution and who is not working toward a degree may be admitted as a non-degree graduate student. A graduate application, application fee and transcripts from the university which awarded the master's or terminal degree are required.

Teacher Licensure

Individuals who already have a bachelor's degree may enter the master's program in elementary or secondary education and complete course work leading to licensure at the same time

Students seeking only endorsement or renewal of certification may be classified as post-baccalaureate or non-degree students. The post-baccalaureate classification restricts the student to undergraduate coursework, while the non-degree classification permits a qualified student to take both undergraduate and graduate classes.

Transient Graduate

An applicant who has been admitted to a graduate program at another institution and wishes to take UTC courses for transfer to that institution may be admitted as a transient student. A graduate application, application fee, and letter of good standing or certificate of transient admission are required. The letter of good standing or certificate of transient admission must be signed by the graduate dean or major adviser at the institution where the student is pursuing his or her graduate degree.

Upon completion of approved courses, *the student should request that the UTC Office of Records forward a copy of his or her transcript to the appropriate institution.*

Post-Baccalaureate Admission

Post-baccalaureate is an undergraduate admission classification which indicates that the applicant has a baccalaureate degree. A student in this category may take only *undergraduate* classes.

Second Bachelor's Degree

A student who has received one bachelor's degree may receive a second bachelor's degree provided that all specific requirements for both degrees are met, that the curriculum for the second degree includes at least 30 hours (with a 2.0 average) not offered for the first degree, and that an additional year is spent in residence. Students should contact the Adult Services Office in the University Center.

Readmission

Any student whose attendance has been interrupted one or more semesters (excluding the summer session) must apply for readmission to the University. An application for readmission must

be submitted prior to the beginning of the semester or summer term in which admission is desired.

Due to the competitive nature of some degree programs, readmission as a degree graduate may require departmental recommendation. In addition, students who have not been admitted to candidacy must follow the regulations in effect at the time of readmission.

Graduate Admission Tests

All applicants who request admission to a specific degree program must submit scores on the appropriate admission test. Scores must be no more than five years old. Admission tests are administered online several times each year. (TOEFL still has paper versions of the test.) Applicants should schedule all examinations well in advance of the date on which they wish to begin graduate study. Information about the tests is available in the UTC Testing Center, 258 Hooper Hall, 425-4288 as well as in the graduate school office.

The Miller Analogies Test (MAT) is required for applicants to master's programs in criminal justice, guidance and counseling: school, nursing and school leadership. Students may schedule this test by group or individual appointment with the Testing Center at 425-4288. Additional information is available from the Psychological Corporation, 555 Academic Court, San Antonio, Texas 78204. Phone: 210-921-8802.

The Graduate Record Exam (GRE) is required for applicants to the master's in English, guidance and counseling: community, health and human performance and Learning and Leadership, nursing, psychology, and public administration programs and for the Education Specialist degree. Information and applications are available from Educational Testing Service, P.O. Box 6004, Princeton, New Jersey 08541-6004. Phone: 1-800-GRE-CALL. Website: www.gre.org

The Graduate Management Admissions Test (GMAT) is required for applicants for graduate study in accountancy and business administration. A score of 450 is required for international students seeking admission to the master's of accountancy program and the M.B.A. program. Information about this test and application forms are available upon request from the Counseling Center and the Graduate Office or Educational Testing Service, P.O. Box 6103, Princeton, New Jersey 08541-6103. Phone: 1-800-GMAT•NOW. Website: www.gmat.org

The Pre-Professional Skills Test (PPST) or Computer Based Test (CBT) also known as PRAXIS I is required of applicants for the master's in elementary, secondary, and special education.* Prospective students must take the reading, writing and math sections. Information, bulletins, and applications for the Praxis I are available from the testing supervisor located in 258 Hooper Hall, 755-4288, Phone: 1-800-772-9476. Website: www.ets.org/praxis

The Test of English as a Foreign Language (TOEFL) is required of all applicants whose native language is not English. A score of 550 (213 on the computer test) must be submitted before action can be taken on the application. Information about this test and application forms are available upon request from Educational Testing Service, Box 6154, Princeton, New Jersey 08541.6154, USA. Website: www.toefl.org

All applicants should note that Educational Testing Service reports GRE, GMAT, and TOEFL scores to institutions named by the applicant at the time he or she applied for the test. A fee is charged for later requests.

*The GRE may be substituted for the PPST/CBT in Special Education.

Doctoral Degree Programs

Policies and Procedures

This section of the Graduate Catalog describes the policies and procedures for students who wish to earn a doctoral degree. Unless this section states otherwise, students wishing to pursue a doctoral degree shall abide by all policies and procedures established for graduate students enrolled at The University of Tennessee at Chattanooga.

Introduction

Currently, the University offers three doctoral programs: a D.P.T. in Physical Therapy, an Ed. D. in Learning and Leadership, and a Ph.D. in Computational Engineering. For complete descriptions of the programs and their respective admission criteria, review the program descriptions provided in this Catalog.

The doctoral degree indicates superior academic achievement and professional competence. Consequently, the doctoral degree program includes a course of study, examination procedures, and other requirements that ensure students achieve the highest level of proficiency for the discipline. In many cases, the policies and procedures governing the doctoral degree are different from those governing the master's degree. These differences reflect the scope and expectation of the two degrees.

Admission Requirements

The following sections describe the general application procedures and minimum application requirements for admission to all doctoral programs offered by the University. Applicants should recognize that a graduate program may specify additional procedures and requirements for admission to the program.

Bachelor's or Master's Degree as Prerequisite

Admission to all doctoral degree programs requires at least a bachelor's degree from a regionally accredited institution or international equivalent. Students admitted to a doctoral program before receiving the baccalaureate degree must complete the bachelor's degree and have met all other admission requirements before they may register for graduate courses.

Some degree programs may also require a master's degree from a regionally accredited institution or international equivalent as a requirement for admission. Students who have received a master's degree from UTC must reapply for admission as a doctoral degree student.

Grade Point Average

The applicant must have a baccalaureate cumulative grade point average (GPA) no less than 2.7 on a 4.0 scale, or a 3.0 cumulative GPA earned during the applicant's senior year, for admission to The UTC Graduate School. The minimum cumulative GPA for specific programs may be greater; therefore, applicants should consult the description of the doctoral program for specific information.

If an applicant has earned a master's degree, then the applicant's graduate-level GPA and not the baccalaureate cumulative GPA will serve as evidence for minimum GPA. Applicants who have earned a master's degree must have a cumulative GPA of 3.0 on a 4.0 scale for graduate level coursework. This rule may not apply for doctoral programs that use different criteria for determining the cumulative GPA. Applicants should refer to the admission requirements for the program they wish to enter to determine whether the program requires the master's degree or other specific minimum requirements.

Students who do not meet minimum admission standards may petition the faculty of the doctoral degree program for temporary admission under the conditional admission status. Some departments may automatically refuse such petitions as a part of their program policies and procedures. International students must seek regular admission as a graduate student and may not receive temporary admission status.

Admission to all doctoral programs reflects the academic credentials of the applicants to the program, the number of applicants, and the resources of the program. Consequently, meeting the minimum admission requirements for the University or a doctoral program does not ensure admission to a doctoral program.

Admission Examinations

Each doctoral program has identified the appropriate admission examination process required for admission. Please consult the program description for a list of these requirements.

Other Materials

Each doctoral program has identified additional application materials (e.g., letters of recommendation, portfolios, departmental interviews, or other evidence of academic achievement) that the student must submit. The purpose of these materials is to provide evidence that the student has the potential to succeed in the program and that the student's professional and research interests are compatible with those of the faculty. Please refer to the program for a list of the specific requirements.

International Students

Students who are not native English speakers must submit scores from the Test of English as a Foreign Language (TOEFL). Students must have a score of 550 or greater for admission. (The Doctorate of Physical Therapy program requires a score of 560.) Students completing the computer version of the test must earn a score of 213 or greater. The student must complete the TOEFL test no more than six (6) months before the application for admission.

Some degree programs may require a greater TOEFL score for admission into the program. Please consult the program description for specific requirements.

Applicants may ask the prospective doctoral program for an exemption from the TOEFL requirement if they: 1) have received a bachelor's or master's degree from a regionally accredited institution in the United States, or 2) have worked full time in the United States for a period of one year after receiving the bachelor's or master's degree.

Some degree programs may require that international students also demonstrate the ability to speak English effectively. Programs with this requirement will list the specific testing procedures that will indicate proficiency in English oral communication.

Delayed Admission

Students who want to start course work for a doctoral program after the normal matriculation date must notify The UTC Graduate School and the Coordinator of the doctoral program of his or her intent. Some departments may require that all new students begin their course work during a specific semester and may not allow students to delay their entry into the program. Students who wish to delay the start of their course work for more than one year must reapply for admission to the program unless exempted by the faculty of the doctoral program.

Admission of Faculty and Staff Members

Faculty and staff employed by The University of Tennessee at Chattanooga may apply for admission to graduate study in order to enroll in graduate level courses. Because of the demands required of graduate level courses and potential for conflict of interest, faculty and staff must demonstrate that their enrollment in graduate courses will not adversely affect their job responsibilities or create a conflict of interest. The employee's supervisor, the Dean of The UTC Graduate School, and the Provost shall approve all applications for full-time faculty and staff to enroll in graduate courses while employed by the University. Faculty and staff will be classified as non-degree graduate students and may complete no more than nine (9) hours of graduate work toward the doctoral degree under this designation. Under extraordinary circumstances, full-time faculty and staff employed by The University of Tennessee at Chattanooga may apply for admission into a doctoral degree program with the approval of the employee's supervisor, the Dean of The UTC Graduate School, and the Provost of the University.

Application Procedures

All applicants, regardless of doctoral program, must use the following application procedures. Applicants should contact a representative of the doctoral program for details regarding critical dates and procedures.

The UTC Graduate School receives all application materials for all doctoral programs. (Some programs may have additional application materials specific to their respective programs.) Send all materials to:

The UTC Graduate School
The University of Tennessee at Chattanooga
615 McCallie Ave.
Department 5305
Chattanooga, TN 37403

General Procedures

Application for admission to UTC Graduate School. Forms are available at www.utc.edu/graduateschool or by contacting The UTC Graduate School.

Application fee: Submit a \$25 non-refundable application fee with the application form.

Request that the registrar of each institution of higher education (colleges and universities) attended send an official transcript directly to The UTC Graduate School.

Graduate Student Classifications

The UTC Graduate School uses the following classifications to distinguish among the types of doctoral graduate student.

Doctoral Degree Student

This classification includes students in good standing who have been admitted by the UTC Graduate School upon the recommendation of the faculty of the doctoral program. Admission to a degree program requires that the student meet the minimum admission requirements of The UTC Graduate School and the doctoral program and be prepared to complete the degree requirements in a timely manner. In addition, students admitted to the degree program must continually meet the minimum academic standards described in the Academic Standards for Graduate Students section of this Catalog.

Students may not simultaneously enroll in two doctoral degree programs. Students wishing to change doctoral degree programs must apply for admission to the new degree program.

Doctoral Degree Candidate

Students enrolled in doctoral programs that require a dissertation for completion of a program of study will receive this designation when they have satisfactorily completed the necessary course work identified on the Doctoral Program of Study Form (or ILLP for Ed. D. students), passed preliminary examinations that the program may administer, and have successfully completed the dissertation prospectus.

Transient Graduate Student

This classification includes students who are enrolled in a graduate degree program at another regionally accredited institution, who are in good standing at that institution, and who wish to enroll in courses offered by the University.

Transient graduate students who wish to be reclassified as doctoral degree students and complete their degree work at The University of Tennessee at Chattanooga must apply for admission to The UTC Graduate School and the doctoral program. A transient graduate student who is reclassified as a doctoral degree student must complete 50% of the required degree work at The University of Tennessee at Chattanooga.

Non-Degree Graduate Student

This classification represents students who may wish to enroll in graduate level courses but do not intend to complete the doctoral degree. Faculty and staff working for The University of Tennessee at Chattanooga will receive this classification unless they are admitted into a degree program as a doctoral degree student.

Admission to The UTC Graduate School does not automatically allow students to enroll in graduate courses. All students must comply with the prerequisites and corequisites of all courses in which they wish to enroll. In some cases, graduate courses are open only to students admitted to the doctoral program. In these cases, the non-degree graduate student must receive the permission of the instructor to enroll in the course.

Students admitted under this classification must maintain a 3.0 grade point average to maintain their non-degree status. Non-degree graduate students may not complete more than nine (9) semester hours of course work toward a doctoral degree unless they receive an exemption from the doctoral program. The Department Head and/or Program Coordinator will forward the exemption to The UTC Graduate School as an information item.

After completing nine (9) semester hours of coursework in a degree program, the non-degree graduate student must request reclassification as a doctoral degree student or petition the doctoral program for permission to retain the classification as a non-degree graduate student and enroll in additional courses. The Department Head and/or Program Coordinator will forward the petition to The UTC Graduate School.

International students on a F-1 visa may not be classified as non-degree students.

Post-Doctoral Admission

This classification includes persons who have earned a doctoral degree from a regionally accredited institution or international equivalent and who wish to enroll in graduate courses offered by the University. The policies and procedures for a non-degree admission shall apply for the post-doctoral admission.

Conditional Admission

This classification includes students who receive temporary admission because they do not meet the minimum admission requirements for The UTC Graduate School. International students may not apply for conditional admission. Under extraordi-

nary circumstances, the faculty of a doctoral program may wish to admit a student who has not met these standards but demonstrates by other means the potential to succeed in the program. These students may be admitted on a conditional basis after they have submitted all required application materials. Students granted conditional admission may enroll in graduate courses for only one semester. The faculty of the doctoral program will prepare, in writing, the rationale for the admission of the student and the specific objectives the student must achieve by the end of the semester as the condition for admission.

The student must earn a 3.0 grade point average for all course work completed during the first semester. At the end of the first semester, the faculty of the doctoral program will report, in writing, to the Dean of The UTC Graduate School the extent to which the conditionally admitted student successfully completed the specified objectives and whether the faculty wish to reclassify the student as a doctoral degree student. Upon the approval of program faculty, the student's status will be revised to that of doctoral degree student. Students who do not receive such approval will be withdrawn from The UTC Graduate School and the doctoral program.

Admission of International Students

The University wishes to encourage qualified graduate applicants from other countries. International students should contact the International Students Services Office for necessary application materials. Send all inquiries to:

International Student Services Office
Dept. 4755
The University of Tennessee at Chattanooga
615 McCallie Avenue
Chattanooga, TN 37403

All international students must follow the admissions procedures described above and for each doctoral program. All applications from international students must be hand written; international students may not apply on-line. International students must submit the following materials to International Student Services Office:

1. A preliminary application form.
2. An application for admission on the form provided by the University.
3. A draft drawn on a U.S. bank or money order for the \$25 U.S. nonrefundable application fee. An international bank check is accepted when the bank lists a US affiliate.
4. Copies of authorized school or university records with certified translations if the records are in a language other than English. Translations must include descriptive titles of courses studied and grades gained in final examinations.
5. Official scores on the Test of English as a Foreign Language (TOEFL). An official score of 550 or above required. (A score of 213 or above is required for computer-based test.) Please note that some doctoral programs may require a higher TOEFL score.
6. Official scores on the admission test required by the doctoral program.
7. Official evidence of financial resources sufficient to provide adequate support (as determined by the University) during the applicant's period as a student. Students must demonstrate that they have access to financial resources that will pay for academic and living expenses for one full-time academic year. All documentation must include original materials. The University cannot accept photocopies or materials printed from the Internet.

8. All international students are required to purchase health insurance through UTC when they pay their enrollment fees.
9. Other fees which may be required by the University or United States at the time of admission.

All materials must be received the UTC International Student Services at least three (3) months prior to the semester in which the applicant wishes to enroll. An accepted applicant will receive a certificate of acceptance and an I-20 form, which must be shown to the Consular Officer of the United States to whom the student applies for a student visa. The I-20 form states that each student must attend UTC one full-time semester upon arrival.

Readmission

Any student whose attendance has been interrupted one or more semesters (excluding the summer session) must reapply for readmission to the University. An application for readmission must be submitted prior to the beginning of the semester or summer term in which admission is desired.

Due to the competitive nature of some degree programs, readmission as a doctoral degree graduate may require departmental approval. In addition, students who have not been admitted to candidacy must follow the regulations in effect at the time of readmission.

Academic Standards for Graduate Students

Graduate education requires continuous evaluation of the student. Each doctoral program has developed a policy for student evaluation. The Doctoral Program of Study Form will list the criteria the faculty will use to determine the student's progress and potential for success. This evaluation includes periodic review of performance in required and elective courses, the cumulative GPA, and performance on other evaluation procedures required of students enrolled in the doctoral program. This evaluation may include written and oral formal examinations, professional portfolios, or supervised practica. The evaluation may also include the program faculty's evaluation of the student's progress and potential for success as a professional working in the discipline. Therefore, a student's continuation in a doctoral program depends upon maintenance of satisfactory academic performance and a positive faculty evaluation of the student's progress.

Cumulative GPA

The faculty of the program and the Graduate School dean review the academic records of all graduate students at the end of each semester, including the summer terms. Graduate students must maintain a cumulative GPA of at least 3.0 for all courses evaluated with a letter grade of A-F. Grades of S/NC, SP/NP, IP, and I, which have no numerical equivalent, are excluded from this computation. Students may not use grades less than C, or evaluations of NC or NP to fulfill the requirements listed on their Doctoral Program of Study Form.

Additional Requirements

A doctoral program may require students enrolled in the program to meet additional requirements as evidence of satisfactory progress. These requirements may include research; completion of coursework and other specific projects within an identified time frame; demonstration of specific professional competencies; and other objectives germane to the doctoral degree. The faculty of the program will list these requirements as a part of the student's Doctoral Program of Study Form. It is the student's responsibility

to understand these requirements. If the student does not fulfill the program's additional requirements, he or she will be placed on academic probation, regardless of his or her cumulative GPA.

Continuous Enrollment

All students shall be continuously enrolled for no fewer than two (2) credit hours upon their matriculation until their graduation. Students may petition The UTC Graduate School for an exception to this rule.

Academic Probation

Cumulative GPA

A student will be placed on academic probation when his or her cumulative GPA falls below 3.0. While on academic probation, the student may continue his or her graduate study so long as each semester's GPA is 3.0 or greater. Upon achieving a cumulative GPA of 3.0, the student will be removed from probationary status.

Additional Requirements

A student will be placed on academic probation for failing to meet the degree program's requirements for satisfactory progress. Evidence of failure to meet the requirement for satisfactory progress may include earning a semester grade point average less than 3.0, receiving an excessive number of I, NC, or NP course evaluations, or failure to pass a required evaluation procedure. Should a student be placed on academic probation for failure to meet the program's requirements for satisfactory progress, the student shall receive, in writing, the requirements he or she must meet in order to be removed from academic probation. Unless otherwise stated, the student shall meet these requirements before the end of the following semester. Failure to meet these objectives will lead to the student's dismissal from The UTC Graduate School and the doctoral program.

Dismissal

Cumulative GPA

A student will be dismissed by the Graduate School dean if he or she earns a semester GPA below 3.0 while on academic probation for low cumulative GPA.

Failure to Make Timely Progress

A student may also be dismissed should the program faculty find that the student has failed to complete degree requirements in a timely manner, received an excessive number of I, NC or NP course evaluations, or failed to pass examinations required by the doctoral program. The criteria for timely progress shall be defined by each doctoral program and will be listed in the student's Doctoral Program of Study Form.

Ethical Violations

A student may also be dismissed should the program faculty find that the student's behavior directly violates the ethical code of conduct governing members of the professional organization for the program's discipline, or whose personal conduct leads the faculty to conclude that the student is unfit to assume a role as a professional in the discipline. A majority vote of the program faculty will serve as basis for dismissal if the student violates the guidelines for ethical conduct.

A student may also be dismissed for cause if found to have violated The University of Tennessee at Chattanooga's code of conduct. Refer to the Student Handbook for a review of these expectations.

All students conducting research with human participants or animal subjects must comply with the policies and procedures of the University's Institutional Review Board or the Animal Review Board. Violation of these regulations shall be considered a violation of ethical behavior.

Failure to Achieve Professional Skills/Behavior

A student, regardless of academic performance, may be dismissed should he or she fail to demonstrate mastery of essential professional behaviors, which include those skills essential for work in the profession. These skills shall be defined by each doctoral program and will be listed in the student's Doctoral Program of Study Form. A majority vote of the program faculty will serve as basis for dismissal if the student fails to demonstrate proficiency of professional achievement.

Procedures

The Dean of The UTC Graduate School, upon the recommendation of the doctoral program faculty, shall notify the student in writing of the dismissal. Students who are dismissed may appeal the action in accordance with the general rules defined in the Graduate Catalog and UTC Student Handbook. Students who wish to appeal their dismissal should contact The UTC Graduate School office for the necessary forms and to review the procedures of the appeal.

Programs of Study

Doctoral Committee

Each doctoral degree student will have a doctoral committee. For those programs not requiring a dissertation, the doctoral committee shall be the doctoral graduate faculty of the program. Subject to Graduate Council policies and individual program requirements, the doctoral committee must approve all coursework applied toward the degree, certify the student's mastery of the necessary skills and knowledge of the profession, and assist the student in completing the requirements of the program. The Department Head and/or Program Coordinator, Dean of the College, and the Dean of The UTC Graduate School shall approve each doctoral committee for each student.

Doctoral Program of Study Form

Each doctoral degree student shall prepare a program of study that will be described in writing using the Doctoral Program of Study Form (or ILLP form) (copies of which are available in The UTC Graduate School office). The Doctoral Program of Study Form must be approved by student's Doctoral Committee and the Dean of The UTC Graduate School. The Doctoral Program of Study Form will list all courses and other academic experiences (e.g., extracurricular or qualifying exams, internships, practica, or dissertation) the student must complete to fulfill the requirements of the doctoral degree. The student will submit the Doctoral Program of Study Form to The UTC Graduate School Office before completing 18 semester credit hours in residence as a doctoral graduate student at UTC.

Students With Master's Degrees

Students admitted to a doctoral program who have completed a master's degree, or its equivalent, may petition the faculty of the doctoral degree program to accept all or parts of the relevant graduate course work to count as fulfilling a portion of the doctoral degree requirements. A student with a master's degree may substitute no more than 50% of the doctoral degree requirements with graduate work completed at another institution or within another degree program offered by UTC unless the course work is

included in the Doctoral Program of Study Form. Students submitting such a petition must understand that the professional accreditation guidelines governing a doctoral program may limit the number of transfer courses.

Students entering a doctoral degree that requires the master's degree as a condition of acceptance may not apply the master's degree course work toward the completion of the doctorate.

Although previously completed graduate courses may be used to satisfy a portion of the requirements for the degree listed on the student's Doctoral Program of Study Form, those courses will not be officially transferred to The University of Tennessee at Chattanooga and will not be placed on the student's UTC transcript.

Doctoral Examinations

Each doctoral program requires its degree students to complete one or more examinations as a portion of the degree requirements. These evaluations may include various formats including standardized multiple-choice exams, essays or papers, oral presentations, clinical performance evaluation, or other methods of evaluation appropriate for the academic discipline or profession. Please refer to the program's degree requirements for a complete description of these exams. Students must be registered for no fewer than two (2) semester hours in the semester during which they complete these examinations. The student is responsible for paying the cost of extracurricular exams (e.g., professional certification exams) that the faculty of the doctoral department does not administer but requires as partial fulfillment of the degree requirements.

The faculty of the doctoral program, as a part of their doctoral program policies, may limit the number of times a student may retake an exam or a portion of an exam that he or she failed. Failure to pass these exams may be used as grounds for dismissal. The faculty of the doctoral program may also require that a student retake all or portions of a specific examination when the student has not completed the degree requirements within five (5) calendar years of completing the examination.

Completion of Doctoral Degree

All doctoral students shall complete the requirements for the degree within the time limits specified within the Doctoral Program of Study Form. This time limit shall include the semesters set aside for the dissertation, if one is required of the student. Students may petition the faculty of the program for an extension. If the student receives the extension, the dissertation committee may require that the student enroll in previously completed courses to ensure that the student receives a timely review of specific content or conceptual topics.

Dissertations

Some doctoral programs require students to submit a dissertation as a requirement for completion of the degree. The dissertation represents a high quality scholarly project that allows the student to demonstrate his or her mastery of the research and analytic skills currently applied by scholars in the discipline. Consequently, the dissertation should represent the highest quality of intellectual endeavor expected of persons earning a doctoral degree in a particular field of study.

Dissertation Committee

The chair of the degree candidate's doctoral committee and at least three (3) additional members of the faculty will evaluate the student's progress on the research and the final dissertation. The committee chair must be a member of the doctoral graduate

faculty. Typically, the committee chair supervises the student's dissertation research. In addition, the committee chair ensures that the members of the committee abide by the policies and procedures of The UTC Graduate School and the academic program offering the degree and provides collegial assistance to the degree candidate. Under special circumstances, a member of the doctoral graduate faculty from another degree program may supervise the student's research with the approval of the program faculty and Graduate Council.

The additional members of the committee may include members of the faculty from the student's program and other programs, members who the committee chair and student believe can make substantive contributions to the student's dissertation.

At least one member of the committee must be from an academic unit other than that of the student's major field and be a member of the doctoral graduate faculty. The Department Head and/or Program Coordinator and the Dean of The UTC Graduate School shall approve the membership of the dissertation committee.

The coordinator of the doctoral program may petition the Graduate Council to allow a person who is not a member of the faculty and who, because of relevant professional experience and academic training, can serve on the dissertation committee. Such a person will receive temporary and honorific status as a member of the doctoral graduate faculty while serving on the student's committee.

Defense of Dissertation Prospectus

The student must prepare and defend a prospectus for the dissertation research. The dissertation prospectus shall include a complete description of the proposed research project and the methods to be used to complete the project. The dissertation committee shall determine the extent to which a proposed project meets the standard for a high quality scholarly project. The student must be enrolled for at least two (2) semester hours during the semester in which he or she defends the prospectus.

When the dissertation committee has approved the dissertation prospectus, and other requirements specified in the Doctoral Program of Study Form, the student will be reclassified as a doctoral degree candidate. The student will continually enroll in at least two (2) semester hours during each semester until he or she has completed the research and is ready to defend the dissertation.

Compliance with Institutional Review Board

All graduate students engaged in research that uses human participants or animal subjects must obtain approval from The University of Tennessee at Chattanooga's Institutional Review Board (IRB) or the Animal Subjects Review Board. There are no exceptions to this requirement. Graduate students engaged in any research, regardless of venue or academic requirement, must ensure that they comply with the policies and procedures established by the review boards. Students may not initiate any research that involves the use of human or animal participants without prior consent of the review board. Disregard of board policies and procedures may result in forfeiture of any data collected and disciplinary action.

Completion of the Dissertation

The dissertation is an important educational experience that allows the student to demonstrate his or her mastery of disciplinary scholarship. Consequently, the dissertation represents a lengthy and deliberate engagement with an intellectual problem germane to the academic discipline.

Each doctoral program has established the time limit in which the student must complete the dissertation once the dissertation

committee has approved the prospectus. Students may petition the faculty of the program and the Graduate Council for an extension of the time limit. Students shall continually enroll in no fewer than two (2) semester hours during each semester while completing the dissertation

Defense of Dissertation

The student must prepare a written dissertation for examination by the dissertation committee. When the dissertation committee chair is satisfied with the quality of the written work, the committee will officiate an oral examination of the student. The dissertation must be distributed to the committee at least ten (10) working days before the dissertation defense. The dissertation defense must be scheduled through The UTC Graduate School at least two weeks prior to the defense and must be conducted in University-approved facilities unless extenuating circumstances require otherwise. The UTC Graduate School shall publicly announce the date, time, and location of the defense.

The typical defense consists of a public forum that is open to the entire University community. When extraordinary circumstances arise (e.g., the research represents classified work), the chair of the dissertation committee may request that the Dean of the UTC Graduate School waive the public forum portion of the defense. Immediately following the public presentation, the members of the dissertation committee will conduct a private dissertation examination of the doctoral candidate. The members of the committee will then meet privately to evaluate the status of the dissertation. The chair of the committee will communicate the findings of the committee to the degree candidate.

The student must successfully defend his or her dissertation at least two weeks before the date of submission and acceptance of the dissertation by The UTC Graduate School Office. The chair of the dissertation committee must submit the results of the defense by the dissertation deadline.

Each program has established the minimum standards for the format of the dissertation and for the editorial guidelines the student will follow in preparing the manuscript. Each program has also established standard procedures for the conduct of the defense. The dissertation committee chair will review these procedures with the student.

Evaluation of Dissertation

The evaluation of the dissertation will consist of one of three outcomes, Pass, Re-examination, and Failure. The evaluation of Pass indicates that a majority of members of the dissertation committee concluded that the student met or exceeded the requirements set forth in the dissertation prospectus, but may be required to make minor editorial modifications to the dissertation. The members of the dissertation committee will sign the final draft of the dissertation once the student has made the required changes to the dissertation.

An evaluation of Re-examination indicates that the majority of the members of the committee found substantive problems in the work or the defense of the dissertation. The members of the committee will prepare a list of modifications or improvements required of the student's work before a second dissertation defense will be scheduled. The re-examination will occur in the subsequent semester unless the dissertation committee and the Dean of The UTC Graduate School grant additional time for the student to effect the necessary changes.

An evaluation of Failure indicates that the majority of the dissertation committee judged the quality of the student's dissertation and the defense of the dissertation to be below the standards expected of doctoral level scholarly performance. Failure of the dissertation shall be grounds for the student's dismissal.

Classified Research

A basic principle in graduate education is that research and dissertations produced by graduate students will be published and made available to other researchers in the field. When a graduate student is involved in classified or proprietary research, and such research is intended to lead toward a dissertation, prior approval must be secured from the Department Head and/or Program Coordinator, and from the Dean of The UTC Graduate School. Should the research become classified in the course of a project, the Department Head and/or Program Coordinator, and Dean of The UTC Graduate School must be notified immediately so that proper procedures can be followed. Failure to comply with these requirements may lead to rejection of a thesis or dissertation manuscript.

Dissemination of Final Copies of Dissertation

Paper copies approved for final submission will be sent to the University Libraries bindery two weeks before conferral of the graduate degree. One of the bound copies will be placed on the shelf in Lupton Library for circulation; the second bound copy will be placed in Library Archives. The circulation copy will appear in the library catalog and on the shelf approximately one year after conferral of the graduate degree.

Students retain copyright privileges immediately upon creation of their work. Students are not required to register their copyright, but registration does establish a public record of the dissertation and ensure additional legal rights.

A student must, as a condition of a degree award, grant royalty-free permission to the University to reproduce and distribute copies of the thesis or dissertation within the University of Tennessee System, on a noncommercial basis including by electronic and digital technologies. The student may also elect to allow distribution outside the University of Tennessee System.

All students must submit their dissertations to ProQuest Information and Learning Company for publication in University Microfilms International (UMI). Procedures for this submission are published in the Graduate Catalog and are further explained in a separate letter sent to doctoral candidates upon initial enrollment in dissertation hours.

PROCEDURES SUMMARY FOR GRADUATE DEGREES

Procedure	Under Direction of	Deadline
Apply for admission to the Graduate School	The Graduate School office staff	Prior to initial registration
Secure admission to degree program	Coordinator of graduate programs in major department and director of The Graduate School	Deadline published in program description Prior to completing more than 9 hours of graduate coursework
Take qualifying examination (not required in all programs) Ed.D. 3 separate examinations	Adviser and chair of graduate committee	Prior to admission to candidacy at the end of semesters 2/4/6
Apply for admission to candidacy in order to establish requirements for the degree	Adviser, coordinator of graduate program and dean of The Graduate School	After completing 9 hours and before completing more than 18 hours of UTC graduate coursework Failure to do so requires approval from Graduate Council to proceed and may result in loss of credit hours
For Ph.D., Computational Engineering, Ed.D. Learning and Leadership: Select a major adviser and form a supervisory committee.	Major adviser	Before completing 12 hours.
Apply for comprehensive examination or waiver (not required in all programs)	Adviser, coordinator of graduate program and director of The Graduate School major advisor, committee	One month prior to scheduled examination date Six months before anticipated graduation
Take preliminary exam (Ph.D. students)	Major adviser, committee	Six months before anticipated graduation.
Submit thesis/ or dissertation (not required in all programs)	Research adviser, chair of graduate committee, and dean of	Draft version must be submitted to the dean of The Graduate School for review at least one month prior to first scheduled day of final examinations . When graduation is anticipated, final version is due before final exams.
Schedule thesis or dissertation defense	Major advisor, dean of Graduate School	Two weeks before intended defense.
Apply for graduation	Registrar	One semester prior to that in which the student expects to graduate

GENERAL REGULATIONS

A graduate student must assume full responsibility for knowledge of rules and regulations of The Graduate School and departmental requirements concerning the individual degree program.

Note: Policies and procedures specified to doctoral programs are listed on page 10.

Adviser

The dean of The Graduate School is the general adviser for graduate students on procedural matters.

On substantive matters relating to the academic program and particular courses, each student is counseled by a member of the faculty of his or her major department or school. In programs with related area(s) of study, a representative of the respective department or school should also be consulted.

Appeals Procedure

The Graduate Council will hear appeals in accordance with the general rules defined in the *UTC Student Handbook* and in this catalog. See page 19.

The appeals form is available in the Graduate School office or from its Web site: www.utc.edu/graduateschool

Continuation Standards

A student admitted to graduate study must maintain a 3.0 grade point average on all courses taken for graduate credit. In the event the student fails to meet this standard, one of the following actions will be taken.

Probation — A student will be placed on academic probation whenever the grade point average falls below a 3.0 on courses completed for graduate credit. (See discussion under *Dismissal*.)

Dismissal — Decisions regarding continuation will be made by the dean of The Graduate School. Students admitted to graduate study must maintain a 3.0 cumulative grade point average (GPA) in all courses taken for graduate credit.

Graduate students will be placed on academic probation when their cumulative GPA falls below a 3.0. By the end of the next two terms of enrollment (counting the entire summer session as one term), students must raise their cumulative GPA to 3.0 or higher. *Students will be academically dismissed if they fail to achieve this cumulative GPA within the two semester probation OR if they fail to achieve a 3.0 or higher for either probationary semester.*

Dismissed students may appeal to the Graduate Council for readmission. Upon readmission, students may resume graduate study on probation with the same continuation standards. NOTE: Some programs have professional fitness standards that may also cause dismissal.

Correspondence Study

Correspondence and on-line courses will be subject to all regulations related to transfer credit as found on page 24.

Credit by Special Examination (Proficiency/Challenge/Competency)

Any person admitted as a graduate student is eligible to receive credit by special examination for competence gained through

study and/or experience primarily independent of University class activities. Credit by special examination may be given for courses offered in the *Graduate Catalog* with the exception of:

1. Courses described as directed research, tutorial, directed independent study, and practica or internships.
2. Any course from which the student has been exempted by placement examination or which he or she has presented for admission purposes.
3. Courses in which the student has received a final grade.
4. Portfolio-based experiential learning accomplished prior to entry into a graduate program.

A fee of \$66 per semester hour will be charged for graduate credit. Graduate students in programs which are not competency based may apply a maximum of six semester hours credit earned by special examination toward the degree.

Students seeking credit by special examination should use the forms provided by The Graduate School to request approval from the permanent-committee on special examinations established by the department under which the course is described in the catalog. The departmental committee will grant or deny the request pursuant to the standards stated on the request form. The departmental committee will deny the request if it determines that the student would realize substantial benefits only from participating in the activities of the course in question. Where the student has at any time enrolled in a course for credit or audit, the committee will presume that the student gained competence through class-related work. In such circumstances, the student faces a heavy burden of proving to the satisfaction of the committee that he or she has gained competence in the subject by pursuing a program of study independent of class activities.

The method for designing, administering, and evaluating the special examination will be determined by the departmental committee on special examinations. The examination will be comparable in scope and difficulty to a comprehensive final examination in that course. Normally, a student will not be allowed to repeat a special examination in a given course within one year.

Upon demonstrating that he or she has developed the abilities and attitudes of students who have taken the course, the student will receive a grade of A, B, or C, with the notation "credit by examination" to be placed on the transcript. Examination results judged inadequate will be recorded as "no credit" on the student's transcript. Graduate credit grades earned by special examination will be used in computing the grade point average.

Special examinations may not be used to raise the grade in a course previously completed; nor may such a course be repeated.

Graduate credit is not awarded for portfolio-based experiential learning which occurs prior to the student's matriculation into a graduate program and which has not been under the supervision of the institution.

Drug-free Environment Statement

The University of Tennessee is committed to ensuring that it is safe and free from the illegal use, manufacture, possession, distribution, or dispensing of controlled substances (as defined in the Controlled Substance Act, 21 U.S.C. Section 812). To accomplish this, the University has established a student drug abuse prevention program through the Office of Student Development. Further, students are subject to a Code of Conduct pertaining to use or possession of controlled substances, and recipients of certain federal financial assistance such as Pell Grants will be required to certify that they will be drug-free during the dependency of the Grant.

Email Guidelines

The University of Tennessee at Chattanooga adopts email as an official means of communication with students.

Each student, upon enrolling, is issued a UTC email account with an address on the utc.edu domain. This is the account used for University business and official University communications to students. Students may use the UTC account for personal communication at their discretion.

Students may also, at their discretion, routinely forward email from their UTC account to a personal account. They should keep in mind that UTC email may be more secure than other email systems.

UTC accounts remain the property of the State of Tennessee. The University reserves the right to disable accounts after graduation or other severance from the University.

The expanding reliance on electronic communication among students, faculty, staff, and administration at The University of Tennessee at Chattanooga (UTC) is motivated by the convenience, speed, cost-effectiveness, and environmental advantages of using email rather than printed communication. Because of this increasing reliance and acceptance of electronic communication, email is considered an official means for communication.

Implementation of these guidelines ensures that students have access to this critical form of communication. These guidelines seek to ensure that all students can access email as the need arises.

These student email guidelines regard the following aspects of email as an official means of communication: University use of email; assignment of student email addresses; and student use of and responsibilities associated with UTC email.

1. University use of email

Email is an official means for communication within UTC. Some communications may only be made by email. Therefore, the University has the right to send communications to all students via email and the right to expect that those communications will be received and read in a timely fashion.

2. Assignment of student email addresses

UTC will assign all students an official University email address. It is to this official address that the University will send email communications; this official address will be the address listed in the University's records database for that student.

3. Redirecting of email

A student may have email electronically redirected to another email address. If a student wishes to have email redirected from his or her official UTC address to another email address (e.g., @aol.com, @hotmail.com, etc.), they may do so, but at his or her own risk. The University will not be responsible for the handling of email by outside providers. Having email redirected does not absolve a student from the responsibilities associated with communication sent to his or her official email address. For assistance in this process contact the Help Desk at 425-4000.

4. Expectations regarding student use of email

Students are expected to check their official email address on a frequent and consistent basis in order to stay current with University communications. The University provides a limited amount of storage space so students are expected to manage (read, delete, file, etc.) their accounts accordingly. The campus recommends checking email several times a week at a minimum, in recognition that certain communications may be time-crucial.

5. Educational uses of email

Faculty expect that students' official email addresses are being accessed, and faculty may use email for their courses accordingly. Faculty members determine how email will be used in their classes. Faculty may have email requirements and expectations that they specify in the course syllabus.

6. Appropriate use of student email

Email is not appropriate for transmitting sensitive or confidential information. All use of email will be consistent with the Administrative Guidelines Statement on Use of Electronic Email and UTC's Acceptable Use Practice. Confidentiality regarding student records is protected under the Family Educational Rights and Privacy Act of 1974 (FERPA). All University use of email will be consistent with FERPA guidelines.

The Office of the Assistant Vice Chancellor for Information Technology will review these guidelines as needed. Changes will be authorized by the approval of the Information Technology Coordinating Council and the Chancellor's Executive Council. Students with questions or comments about these guidelines should contact the UTC Help Desk at 425-4000.

Full-time Enrollment Equivalents

Graduate students will be considered full time students if they meet one of the following criteria:

- 1) Enrolled in nine or more semester hours for graduate credit.
OR
- 2) Enrolled in one of the following graduate courses for at least one graduate credit hour:
 - ENGR 590 project
 - EPSY 650, 655
 - ESC 597
 - NURS 507, 509, 547, 553, 557, 559
 - PSY 536
 - Any 598 research course
 - Any 599 thesis course
 - Any 699 dissertation course

Note: This list of courses revises the original list from Spring 1998 and has been approved by the graduate program coordinators and Graduate Council.

Grades

Grades in the Graduate School have the following meaning:

- A — is given for work of distinctly superior quality and quantity accompanied by unusual evidence of enthusiasm, initiative, thoroughness and originality.
- B — is given for work showing the above qualities to a lesser extent.
- C — represents fulfillment of the minimum essentials of a course.
- D — represents a passing grade
- F — indicates unqualified failure.
- S — is given for courses completed on a satisfactory/no credit basis. The hours are not computed in the grade point average. Satisfactory grades are limited to elective courses and must be designated as such by course and not by individual student. No more than six hours of satisfactory credit may be applied toward a graduate degree.
- NC — represents failure to complete the requirements in satisfactory/no credit courses. The attempted hours are not computed in the grade point average.
- SP — is given for thesis or dissertation credits to indicate satisfactory progress. The hours are not computed in the grade point average. Upon completion of the thesis, a letter grade is assigned to six hours, which may entail changing grades of some SP credits. No letter grades are given for dissertation hours.
- NP — represents failure to make satisfactory progress when registered for thesis credit. These hours are not computed in the grade point average.
- I — may be given to a student whose work has been of passing quality and who has valid reason for not completing some requirement of the course. Removal of an *Incomplete* must be submitted by the instructor to the Office of Records no later than three weeks before the last day of classes in the next regular semester, or the *Incomplete* will become an *F*. The *Incomplete* grade will not be computed in the grade point average during the interim. An *Incomplete* may not be used to allow the student to do additional work to bring up a grade.
- IP — is used as an interim grade to indicate work in progress requiring more than the normal limitations of a semester except for thesis. *It is restricted to graduate level courses (500 and above) and has a one-year limitation for removal.* The instructor will determine the IP designation in the first half of the semester or term. *A student may not register for additional courses if he or she has earned two incomplete (I or IP) grades.* The IP grade may not be given for thesis.
- W — indicates official withdrawal from one or more classes after the first two weeks of classes and up to the last six class weeks before the final examinations. Comparable deadlines apply to each of the summer terms.

The UTC Graduate Council has a policy that states that students may take only six hours of graduate credit utilizing satisfactory/no credit grading. However, students enrolled in the Doctor of Physical Therapy may be allowed to earn 28 credits of clinical education: PHYT 514 (7 hours); PHYT 532 (six hours); PHYT 534 (six hours); and PHYT 536 (seven hours).

Grade Point Average Computation

Continuation in the University, rank in major and eligibility for graduation and honorary organizations are based on the grade point average. This average is computed by totaling the number of attempted graduate hours and dividing this total into the number of quality points earned in graduate courses.

No credits earned with grades below *C* will be accepted for graduate degree requirements. However, grades of *D* and *F* are computed into the graduate grade point average. When a course is repeated, all grades are included in computing the graduate grade point average. Satisfactory (*S*) grades and Satisfactory Progress (*SP*) grades and grades earned in courses taken for undergraduate credit are not used in computing the graduate grade point average. No grade below *B* will be accepted for transfer credit.

Grade Appeal

Each faculty member has the prerogative and responsibility to determine in accordance with his or her best judgment the grade for each student. Whenever a student feels that his/her rights and interests have been seriously jeopardized by unfair, arbitrary, or malicious exercise of faculty grading prerogative, the student may appeal a grade. Failure to receive the grade desired or expected is not sufficient reason to appeal a grade. If at any step in the appeals process the University fails to respond to the student within the time specified, this shall be treated as a denial of the appeal and the student may proceed to the next step of the process.

The appeal procedure is designed to provide graduate students with a clearly defined method for appealing a grade which is deemed to have been assigned unfairly, arbitrarily, or maliciously. The following procedure is to be followed for all grades (including comprehensive examinations) that are included on a student's transcript. In all cases, the instructor shall be presumed to have assigned the proper grade and the student appealing shall have the burden of proof to the contrary.

- Step 1. The student shall consult with the instructor within ten working days after grades are mailed to students. If an agreement is reached, the appeal process ends.
- Step 2. If the student cannot reach the professor or if the complaint is not resolved, the student must contact the department head or director within twenty working days of the date grades were mailed. The department head/director will attempt to resolve the complaint in consultation with the instructor and the student individually or together. Within five working days of the initial contact by the student, the department head/director will notify or confirm in writing to the student the results of this consultation. The department head/director will also notify the graduate coordinator of the program in which the student is enrolled. If an agreement is reached, the process ends. If the department head/director is the instructor of the course involved in the complaint and the problem cannot be resolved through Step 1, the department head/director will notify the student in writing of his/her decision, and the student may proceed with Step 3.
- Step 3. If an agreement is not reached at the departmental level and the student wishes to appeal, the student must obtain, complete, and return to The Graduate School office a grade appeal form within ten working days after

being mailed notification or confirmation by the department head of the departmental decision. The form includes a place for the signature of the department head or director indicating that the first two steps have been followed, the signature of the dean of the appropriate college or school, a request for a hearing before the Grade Appeals Committee, and supporting information to justify the student's appeal.

- Step 4. The dean of The Graduate School will arrange a grade appeals meeting to be held within ten working days after receiving the grade appeal form. Present at the meeting will be the Grade Appeals Committee (the Chair of the Graduate Council and three members of the Council), the student, the faculty member, the dean (or his/her designated representative) of the college or school in which the appeal originated, the dean of The Graduate School, and up to two non-voting faculty members of the department affected. The student will be given time to present his/her case with a question-answer period following. The faculty member will then present his/her response followed by another question-answer period. The student and faculty member may be present during both presentations and during both question-answer periods, and both presentations must adhere to the issues covered in the written appeal. When the committee deems it has sufficient information to determine the case, the student, faculty member, and visiting members of the department will be asked to leave, and the committee will begin its deliberation and make its decision. If the committee decides that additional information is needed, the chair may request such information orally or in writing before the committee makes a decision.
- Step 5. The committee will recommend that 1) the grade previously assigned be upheld; or 2) the faculty member be asked to change the grade; or 3) the grade of I be assigned until completion of specified requirements agreed upon by faculty and student. The dean of The Graduate School will send a copy of the recommendation to the student, the faculty member, the graduate coordinator, the department head/director, and the dean. Within ten working days after being mailed the recommendation, the student and faculty member must each notify the dean of The Graduate School of an intention to accept or reject the recommendation. If both faculty and student agree to accept the recommendation of the committee, the process ends. If that recommendation includes a grade change, the faculty member will make the necessary change and notify the dean of The Graduate School that the change has been made. The graduate dean will then notify the student of the change. If no response is received after ten working days, then the recommendation of the grade appeal committee is upheld as the final decision.
- Step 6. If either the student or faculty chooses to reject the recommendation and wishes to continue the appeal process, the dean of The Graduate School will notify the faculty member as well as the graduate coordinator, the department head or director, and the dean. The dean of The Graduate School will then submit all materials to the Chancellor who may request additional information/materials from either/both parties. The Chancellor's

decision is final, and a copy of that decision will be mailed to the student, the faculty member, the graduate coordinator, the department head/director, the dean, and the dean of The Graduate School.

A copy of the Graduate Student Grade Appeals Form, the results of the hearing, and the chancellor's decision (if applicable) will become a part of the student's file. A permanent record of all grade appeals reviewed by the Grade Appeals Committee shall be maintained in the of The Graduate School office.

Family Educational Rights and Privacy Act

A student's record is regarded as confidential, and release of the record or of information contained therein is governed by regulations of the federal law on "Family Educational Rights and Privacy." Only directory information such as a student's name, address, telephone listing, birthplace and date, major fields of study, participation in officially recognized activities and sports, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student may be released by the institution without consent of the student unless the student has asked UTC to withhold such information. The law also provides for the release of information to University personnel who demonstrate a legitimate educational interest, other institutions engaged in research (provided information is not revealed to any other parties) and certain federal and state government officials.

Honor Code

The Honor Code is based upon the assumption that the student recognizes the fundamental importance of honesty in all dealings within the University community and that education is a cooperative enterprise between student and teacher and between student and student. Any act of dishonesty violates and weakens this relationship and lessens the value of the education which the student is pursuing. The Honor Code, the Honor Court, and its procedures are detailed in the *Student Handbook*.

Compliance with Institutional Review Board

All graduate students engaged in research that uses human participants or animal subjects must obtain approval from The University of Tennessee at Chattanooga's Institutional Review Board (IRB) or the Animal Subjects Review Board. There are no exceptions to this requirement. Graduate students engaged in any research, regardless of venue or academic requirement, must ensure that they comply with the policies and procedures established by the review boards. Students may not initiate any research that involves the use of human or animal participants without prior consent of the review board. Disregard of board policies and procedures may result in forfeiture of any data collected and disciplinary action.

Measles Immunization Requirement

In an attempt to maintain a healthy campus environment, The University of Tennessee campuses now require that all new entering students born after 1956 furnish documented proof of having received two measles (MMR) vaccinations since age 12 months, unless contraindicated because of pregnancy, allergy to a vaccine component, or other valid medical reasons. A verification of immunization, signed by a health care provider, should be sent to the Student Health Service, Metro Building, or to The Graduate School office. An official copy of the "Permanent Tennessee Cer-

tificate of Immunization” (form PH-2414) or a comparable immunization form from another state will also be acceptable.

Effective July 1, 2003, the General Assembly of the State of Tennessee mandates that each private and public postsecondary institution in the state provide information concerning Hepatitis B infection to all students entering the institution the first time. Those students who will be living in University housing must also be informed about the risk of meningococcal meningitis infection. The required information includes the risk factors and dangers of each disease as well as information on the availability and effectiveness of the respective vaccines for persons who are at-risk for the diseases. The information concerning diseases is from the Center for Disease control and the American college Health Association. **Prior to University Housing check-in, documentation of the Meningitis vaccine OR a signed waiver is REQUIRED.**

Petitions

The Graduate Council policy on petitions is as follows:

1. The burden of proof is on the petitioner, and petitions will not be routinely accepted but considered on their merits as exceptions. This basic rule applies at each step of the petitionary procedure.
2. Petitioners are responsible for stating clearly, in writing, what they are petitioning for. They are also responsible for giving, in writing, clear and cogent reasons supporting their request.
3. Each department, or other responsible unit, shall have a committee empowered to receive petitions of graduate students. The committee, consisting of at least three members, should meet formally to consider any petition, and each member of the committee should sign the recommendation of the committee and forward five copies of the petition to The Graduate School office to be placed on the agenda for the Graduate Council. Any dissenting judgment should also be signed. Dissenting judgments may, but need not, be supported by a statement of reasons (see 1, above, relative to burden of proof).
4. The department committee may decline petitions. A student may appeal a declined petition to the Graduate Council and, if declined there, to the chancellor.
5. The petition form is available in The Graduate School office, or it may be downloaded from the web site: www.utc.edu/gradstudies

Records and Transcripts

The Office of Records maintains a permanent record on any student who has ever attended UTC. This record currently includes the student's name, social security number, address, birthdate, sex, admission classification, and credits transferred from other colleges. It includes all courses which a student has taken at UTC with credit hours, grades and cumulative grade point average. Academic suspension or dismissal is recorded as well as academic probation.

A student may inspect and review records and is entitled to challenge the content of records. However, the student may be denied access to the parent's financial

statement and to confidential letters and statements of recommendation which were placed in the University's records prior to January 1, 1975. A more thorough explanation of records maintained on students and copies of records may be obtained from the Office of Records. The registrar or the dean of The Graduate School will further explain and clarify the Family Educational Rights and Privacy Act to students, parents or interested parties upon request.

Transcripts of a student's record are released only on the student's written authorization. A student is entitled to one transcript without charge; thereafter, \$2 is charged for each subsequent transcript. Requests should be made to the Office of Records before the time transcripts are needed. Transcripts are not released for students who have an indebtedness of any type (including nonmonetary debts) or who owe any fines to the University.

Registration

Dates of registration and class offerings are published on the UTC Website (www.utc.edu) for each semester and summer session. Students must consult with their adviser before registering.

Repeated Courses

A graduate student may repeat a course only with approval of the student's major adviser, and all grades earned will be included in computing the grade point average.

Residence Classification for Paying Fees

At the time of admission, each student is assigned a residence classification for fee purposes. A student's residence status will be determined in accordance with the following general rules:

1. Every person having his or her domicile in this state will be classified "in-state" for fee and tuition purposes and for admission purposes.
2. Every person not having his or her domicile in this state will be classified "out-of-state" for said purposes.
3. The domicile of an unemancipated person is that of his or her parent.
4. The spouse of a student classified as in-state shall also be classified in-state.

It is presumed that an emancipated person does not acquire domicile in Tennessee while enrolled as a full-time student at any public or private institution of higher education in this state, as such status is defined by such institutions.

Exceptional cases, including guardianships, are given special consideration and are determined on the basis of the particular circumstances in each case. The regulations, which are used to determine a student's residence classification, are published in the *Student Handbook* and also may be obtained from the Graduate Office.

Students who wish to appeal their residence classification should submit the residency petition form to The Graduate School office. The appeal should include appropriate evidence to support the establishment of domicile in the state of Tennessee.

If students classified out-of-state apply for in-state classification and are subsequently so classified, their in-state classification shall be effective as of the date on which reclassification was sought. However, out-of-state tuition will be charged for any semester during which reclassification is sought and obtained unless application for reclassification is made to The Graduate School office on or before the last day of regular registration of that semester.

Out-of-State Students Employed in Tennessee

Students who are classified as out-of-state residents may take no more than eight hours of graduate credit at in-state rates if they are full-time, regular employees of a business, company, or organization in Tennessee. Each semester, these students must submit a letter on the company's letterhead to The Graduate School office from their employer stating the length of their employment history, position, and hours of employment per week.

Schedule Limit

Full-time graduate students may enroll for a maximum of 16 semester hours in any semester (nine hours are usually considered a full-time class load; students in the doctor of Physical Therapy are exempt from this requirement. See page 10 for other exceptions). During the summer semester, the maximum load is seven hours per summer term with the total for the semester not to exceed 16 hours. A graduate student should not enroll in more than seven hours of course work for any term during which the student will be gainfully employed full time.

Registration for more than 16 hours during any semester is not permissible without prior approval from the dean of The Graduate School.

Undergraduate Courses for Graduate Credit

Selected 400 level courses may be taken for graduate credit. In such cases, the course requirements for the graduate student will be suitable to the graduate level and include additional work.

A student who enrolls in 400 level courses for graduate credit must obtain the form entitled *Graduate Student Requirements in 400 Level Courses* from the Graduate School Office or its website, have the instructor sign the form, and return it to the Graduate School Office. No more than nine hours of graduate credit earned in 400 level courses may be included in any master's degree program, except for Physical Therapy that has received a special exemption for its 3-3 program.

Vehicle Operation and Parking

Each student, faculty, or staff member who operates a vehicle at the University must obtain a parking permit and register that vehicle with the Bursar's Office, 216 Fletcher Hall. A University parking authority determines the parking policy, traffic regulations, and fees. This information is published each year in the *University Traffic and Parking Regulations*.

The large volume of vehicles operated on campus requires strict adherence to the traffic and parking regulations. Therefore, a system of fees for violations of these regulations is enforced by the University. Copies of the *Regulations* are available each semester at the time students, faculty, and staff apply for parking permits.

Veteran's Benefits

A veteran who expects to receive benefits for graduate study must be admitted as a degree graduate student and meet the enrollment equivalents specified on page 10. The only exception is the veteran who is required to complete prerequisite courses. In such cases, the veteran may count the prerequisites specified on the *Admission Status Form* toward the full-time enrollment equivalents *provided the student is enrolled concurrently in a graduate course required for a degree*. In no case, however, will the number of prerequisites exceed 12 hours or carry a 300 level course number. This provision is allowed since these courses are required to meet the student's degree objective.

Any individual who is admitted as a post-baccalaureate student is excluded from all provisions as stated above. Post-baccalaureate students must meet the enrollment equivalents established for undergraduates.

Withdrawal from Graduate Courses

Once a student has registered for a semester or summer term, he or she is considered to be enrolled, is liable for fee payment, and is expected to attend all classes until or unless he or she notifies The Graduate School office or the Registration Office in writing. Appropriate forms are available in The Graduate School office, 103 Race Hall, and the Records and Registration Office, 109 Race Hall. *A student who drops out of classes without officially withdrawing will receive a grade of F.*

During the first two weeks of a semester, a student may officially withdraw without prejudice from any class and no grade will be recorded. After that period and up to the last six weeks of class, a student who officially withdraws will be graded *W*. Except in unusual circumstances, no withdrawals are permitted in the last six weeks of classes. A student who drops out of class during this six-week period is graded *F*. Comparable periods apply to summer terms, and specific dates are printed in the schedule of classes. To change registration in any way after the deadline, a student must present the request, together with documentary evidence of extenuating circumstances, to the director of The Graduate School. If the request is approved, The Graduate School office will notify the Office of Records, which will enter the change on the student's permanent record.

GRADUATE PROGRAM REGULATIONS

Specific requirements for each degree program and certificate programs are given under the degree heading. Regulations applying to all graduate degrees and certificates are stated below.

Admission to Candidacy

Admission to a graduate degree program allows the student to demonstrate ability but does not guarantee the right to continue toward a degree unless he or she is admitted to candidacy.

The application for admission to candidacy should be made after the student has completed in residence nine semester hours of approved graduate courses (excluding transfer credit and any specified prerequisites) and *before completion of more than 18 hours*. The appropriate form may be obtained in the Graduate School office.

In order to be eligible for admission to candidacy, the student must have a *B* average (3.0 GPA) on all courses taken for graduate credit and have completed prerequisite and designated courses as required by the major department or school and no grade below a *C*.

In addition, some departments require that applicants for admission to candidacy successfully complete a qualifying examination prior to admission to candidacy for the degree. Please refer to the appropriate department for specific information regarding qualifying examination requirements or other departmental re-

quirements for admission to candidacy.

On the application, the student must list the courses which have been completed and those which the student plans to complete to fulfill requirements for the degree. The application, reviewed and signed by the major adviser and approved by the coordinator of the graduate program, must be submitted to The Graduate School office and approved by the dean of The Graduate School at least one semester prior to the date on which the degree is anticipated. It is this approved program, rather than any examples that may appear in the *Graduate Catalog*, which will constitute the student's graduation requirements.

A student who fails to submit a candidacy form before completion of more than 18 graduate hours must petition Graduate Council for acceptance of the additional course hours.

Application for the Degree

Commencement is held each year in May, August, and December. Students who expect to receive graduate degrees must file an application for the degree with the Office of Records by the date specified. The application form is available in the Records and Registration Office or on its website (www.utc.edu/UnitsRecordsRegistration)

Catalog Effective Date

Graduate students will comply with the catalog requirements in effect at the time of admission to candidacy.

Certificate Programs

A graduate certificate program is a planned program of graduate-level study comprised of a minimum of nine graduate-level academic courses. Certificate programs—with their flexible, cutting-edge, and concentrated nature—enhance the University's ability to meet the needs of an increasingly technological and sophisticated economy.

A candidate for a graduate certificate of credit program must be a fully admitted student who has satisfactorily completed the minimum requirements for the certificate as described elsewhere in the Catalog. These minimum requirements include achieving a 3.0 grade point average in the program itself as well as a cumulative 3.0 GPA on any prior work taken at the University. The candidate must be a graduate student in good standing and in compliance with all other applicable policies.

Once the course work has been completed, the student should submit an Application for Certificate form to the Graduate School office. When the program has been approved and finished, the program will be noted on the student's transcript.

Comprehensive Examinations

A candidate for a graduate degree must follow the policy of the department concerning administration of comprehensive examinations. In some degree programs, comprehensive examinations are waived or options are given. Where applicable, the examination is administered by the major department or school but includes the related areas of study. The mode of this examination may be oral or written with the approval of the appropriate graduate committee. To be eligible to take the exam, the student must have a cumulative 3.0 grade point average and had his or her candidacy form accepted. The examination is normally taken in the semester in which the candidate is completing course requirements. *An application indicating the appropriate date and option requested for the examination must be submitted to and approved by the dean of The Graduate School at least one month prior to the date of the comprehensive examination.*

A student who fails the comprehensive examination may re-take the examination once if recommended by the major department. In unusual circumstances a student, with the approval of the major department, may petition the Graduate Council for a third examination.

Comprehensive Examination Dates

Fall	Spring	Summer
November 5, 2005	March 4, 2006	July 8, 2006

Dissertation

Please see the discussion under Doctorial Policies and procedures on page 14

Course Requirements

The total minimum credit required for a master's degree varies from 30 to 52 semester hours as specified for the particular degree program. At least one-half of the total hours must be in the major area. Credits in elective areas are specified in the degree program or are approved by the department or school.

The total minimum credit required for an Education Specialist degree is 36 semester hours.

The total minimum credit required for the Doctorate of Physical Therapy is 121 semester hours.

A maximum of nine hours of approved graduate credit earned in 400-level courses may be included in any master's degree program. In such cases, the course requirements for the graduate student will be suitable to the graduate level and will be stated on the appropriate form which must be submitted to The Graduate School office.

Graduation

In order to be eligible for degree conferral, the candidate must have completed all coursework as specified on the approved Application for Admission to Candidacy form, with no course with a grade below *C* presented for the degree and with a minimum average of *B* on each of the following: a) all coursework taken for graduate credit at UTC; b) all coursework transferred to UTC for graduate credit and; c) all coursework completed to fulfill the program approved on the Application for Admission to Candidacy. *The same credits may not be used toward two master's degrees.*

Prerequisite Courses

Graduate study in any department or school must be preceded by sufficient undergraduate work to satisfy the department or school that the student can continue at the graduate level in the chosen field. Each student's undergraduate record is examined by the appropriate department or school before admission to a degree program is granted. Since undergraduate courses differ in content and extent, not all prerequisites can be listed in the *Catalog*. Specified prerequisite courses may be taken for undergraduate credit or challenged by special examination. Undergraduate prerequisites do not count toward degree requirements.

Residency Requirement

Graduate degree students may be required to complete one or more semesters of full-time study as determined by the major department.

Thesis

The thesis represents the culmination of an original research project completed by the student. The organization, method of presentation, and subject matter of the thesis are important in

conveying to others the results of such research. The thesis must be prepared according to the established requirements of The Graduate School. Students required to write a thesis must continue to register for 599r Thesis each fall and spring semester after the initial registration until the thesis is accepted for binding. The student must be enrolled for at least two semester hours of thesis during the semester the thesis is submitted. (Students graduating in August must register for thesis hours in the summer term.)

If, through unusual circumstances, the student cannot work continuously on the thesis, the student may request in writing a one-time stop-out. This request must be made no later than the end of the enrollment period of the succeeding semester. The stop-out is not to exceed four continuous fall and spring semesters. The stop-out request must be approved by the thesis advisor and the dean of The Graduate School.

NP grades for thesis hours will be recorded during semesters when, in the judgment of the thesis advisor, the student fails to demonstrate adequate progress on the thesis. SP grades will be recorded for those semesters during which adequate progress occurs.

A full draft of the thesis must be submitted to the dean of The Graduate School for review no later than one month prior to the first day of scheduled final examinations for the term in which the student expects to graduate. When the thesis has been successfully defended, the original and two copies of the approved thesis (three copies) must be submitted to the dean of the Graduate School for final approval by the last day of classes for the term during which the student plans to graduate.

Graduate Council strongly recommends that thesis students pay an additional \$45 fee so that a fourth copy of their abstract and thesis can be submitted to University Dissertation Publishing Co. for listing in *Master's Abstracts International*, for copyright, and for submission to the Library of Congress. (*Master's Abstracts International* is University Dissertation Publishing Co's, formerly known as University Microfilms, Inc., authoritative source of current graduate research.)

MAI is available in practically every university and research library in North America as well as through Europe and the Far East. Citations for tens of thousands of master's theses are included with 10,000 master's theses added to the database each year.

Before a thesis is deposited in the library, it is the responsibility of the thesis committee to examine the materials and to make sure that the report is mechanically accurate and attractively presented, is free of technical errors in format, is suitable for binding and reflects credit upon the University and its graduate program. If the form of the thesis is not thus approved, the student must make whatever corrections are necessary and submit the materials again. The thesis must include the standardized approval sheet, signed by the members of the committee, which certifies to the dean of The Graduate School that the committee has examined the final copy of the thesis and found its contents to be satisfactory. A binding fee of \$18 must be paid to the Lupton Library before the papers are presented for binding.

A final grade for the thesis course will not be recorded until the thesis has been deposited in the library. At that time, up to six of the most recent semester hours of previously SP graded thesis credit will be recorded as A or B on the student's transcript. NP grades and SP grades for thesis in excess of the thesis hours required will remain on the transcript.

Thesis Committee

The thesis committee shall consist of a chairperson and at least two other persons. The chairperson must be a full-time faculty member in the thesis student's department in a tenure-track position and should have full graduate faculty status. One other member of the committee must be a full-time faculty member in the thesis student's department. The remaining members of the committee must either be full-time faculty members in the student's department or must possess qualifications that are deemed suitable for committee membership by the student's department.

Time Limit of Candidacy Program

All credit applied toward a graduate degree must be earned within a six-year period beginning with the registration for the earliest course counted. On appeals for a one-year or less extension of the time limits for the degree, and on such appeal *only*, the departmental committee may grant a one year extension of the time limit. The Graduate Council shall be notified promptly and in writing of all such appeals being granted.

Transfer Credit

A maximum of six semester hours may be transferred into a student's graduate program from work taken at regionally accredited institutions. At least one-half of all coursework in a student's program must be taken for graduate credit at UTC. One-half of a student's program may be transferred from within The University of Tennessee system. Such work must have been taken in residence for graduate credit and passed with a grade of B or better, must be part of an otherwise satisfactory graduate program (*B average*), and must be approved by the major department or school.

Initiation of procedures to have transfer credit accepted is the responsibility of the student, who must have one official transcript sent to The Graduate School directly from the institutions at which the work was taken. If the program coordinator approves the transfer credit, the course(s) is listed on the candidacy form and submitted to the dean of The Graduate School for final evaluation and approval. If approved, the credit is incorporated into the student's official record.

STUDENT FEES AND EXPENSES

Tuition is free to residents of Tennessee. Out-of-state students must pay the tuition charge. Any student who is classified as an out-of-state student may, at any time, request that a residence classification be reconsidered. When additional information concerning a student's residence classification is available, the student should provide the Graduate School with this information in order for a reappraisal of residence status to be made.

Tuition and Maintenance Fees

The following fees are accurate for 2005-2006 academic year.

In-state undergraduate/special student maintenance fees

Per Semester Hour	\$150
Maximum Charge	\$1,800

In-state graduate student maintenance fees

Per Semester Hour	\$240
Maximum Charge	\$2,155

Out-of-state undergraduate/special student tuition/maintenance fees

Per Semester Hour	\$527
Maximum Charge	\$6,312

Out-of-state graduate student tuition/maintenance fees

Per Semester Hour	\$742
Maximum Charge	\$6,667

Debt Service Fee

All students registered will be assessed a debt service fee.

Per Semester Hour	\$9
Maximum Charge	\$110

Facilities Fee

All students registered will be assessed a facilities fee.

Per semester Hour	\$50
Maximum Charge	\$50

Program and Service Fee

All students registered will be assessed a program and service fee.

Per Semester Hour	\$8
Maximum Charge	\$90

Technology Fee

All students registered will be assessed a technology fee.

Per Semester Hour	\$12
Maximum Charge	\$100

Athletic Fee

All students registered will be assessed an athletic fee

Per Semester Hour	\$8
Maximum Fee	\$100

Student fees are established by The University of Tennessee Board of Trustees and are subject to change without notice.

The above fees apply to courses taken for credit or audit.

Auditor's Fees

Fees for courses being audited are the same as those for courses taken for credit. Auditors do not take examinations, receive credit or grades, and may or may not participate in the class activities as determined by the instructor.

Fees for Students with Disabilities

Tennessee residents who are physician certified with 100% total disability and meet admission requirements may enroll for credit for a fee of \$7.50 per semester hour to a maximum of \$75 per semester.

Tennessee residents who are 100% total disabled may audit classes on a space available basis at the University without paying a fee.

For fee information call the Bursar's office at (423) 425-4781.

Listener's Fee

Tennessee residents considering entering or returning to the University may "listen" in academic courses for a fee of \$10 per course without additional obligations. Participation in this program is limited to two courses per semester for a maximum of two semesters. Only individuals who have not received a baccalaureate degree and who have not had any college courses in the previous five years may participate. For more information call the Bursar's Office at (423) 425-4781.

Music Fee

In addition to the credit hour rate, a music fee is assessed for instructional courses. The fee is due at the regular fee payment dates. The fees are:

Per one-half hour instruction	\$60
Per one hour instruction	\$120

Post-baccalaureate Fees

Post-baccalaureate students pay fees at the undergraduate rate.

Senior Citizens' Fees

Tennessee residents who become 65 years of age or older during the academic semester in which such persons begin classes and who meet admission requirements may enroll for credit for a fee of \$7.50 per semester hour to a maximum of \$75 per semester.

Tennessee residents who become 60 years of age or older during the academic semester in which such persons begin classes may audit classes on a space available basis at the University without paying a fee.

For fee information call the Bursar's Office at (423) 425-4781.

Summer Terms

Fees for the summer sessions are the same as for regular semesters.

Veterans' Fees

(All veterans must confirm attendance by deadline date.) Service members, veterans, and dependents of veterans who are eligible beneficiaries of U.S. Department of Veterans Affairs education benefits or other governmentally funded educational assistance, subject to the conditions and guidelines set forth in Tennessee Code Annotated 49-7-104 as amended, may elect, upon formal application to defer payment of required tuition and fees until the final day of the term for which the deferment has been requested. Application for the deferment must be made no later than 14 days after the beginning of the term, and the amount of the deferment shall not exceed the total monetary benefits to be received for the term. Students who have been granted deferments are expected to make timely payments on their outstanding tuition and fees balance once education benefits are being delivered, and eligibility for such deferment shall terminate if the student fails to abide by any applicable rule or regulation, or to act in good faith in making timely payments. This notice is published pursuant to Public Chapter 279, Acts of 2003, effective July 1, 2003.

Other Fees

Application Fee \$25
A nonrefundable fee payable at the time application is made.

Housing

Room rents vary from \$1,595 to \$2,125 per semester according to the accommodations available. A \$25 nonrefundable housing application fee is required from students applying for housing. In addition a \$225 advance payment is required for fall semester. Fees not paid on regular fee payment will incur a late fee.

Orientation

A \$60 fee for freshman orientation includes meals, as well as overnight dormitory stay. The fee also covers cost of booklets and orientation materials.

Parking

Reserved parking decal	\$80 per semester
Reserved parking decal (summer)	\$54
Reserved parking decal (full year)	\$214
General parking decal	\$88 per year

Returned Check Fee

Any checks received by the University which fail to clear the bank will incur a service charge of \$15. In addition to the service charge, a check written to cover tuition, dorm, and fees which fails to clear the bank will incur the appropriate late and reinstatement fees in effect at the time the student redeems the check. Check writing privileges will be revoked for those students writing three or more returned checks to the University.

Special Examination Fees

Payable for each proficiency or validation examination.	
Undergraduate	\$64 per credit hour
Graduate	\$102 per credit hour

Student Dining Plans

Students may apply for various meal plans through the Aramark Food Service. For complete information regarding available plans, contact Food Services, UTC University Center, 425-4200.

Mocs Express Fee Payment**Special Note-Accounts/Receivable Holds**

A/R holds are prior obligations to the University (library fines, old UC/UTC loans, parking fines, returned checks, accounts receivable, etc.) that must be paid prior to registering for courses. Students will not be allowed to register with a financial hold. Also, obligations which are incurred after registration are required to be paid with current term charges by the cancellation deadline.

Any student who submits registration materials will be obligated for a percentage of the fees even if he/she does not attend classes unless the Registration Office is notified in writing prior to the first official day of classes that he/she wishes to cancel registration.

The University reserves the right to refuse to release to any student their transcript or degree for failure to return UTC property or pay any accounts due at the University.

Mocs Express Fee Payment

Mocs Express combines all fees, charges, fines, and credits into one statement. The University mails a Mocs Express statement to all students who register during the Priority Registration period. Students who owe a balance may write a check or authorize a MasterCard or Visa account to confirm attendance. Students who do not owe a balance or have a credit may simply confirm attendance by returning the bottom portion of the Mocs Express statement by the deadline. Credit and zero balances may confirm by e-mail at Payments@utc.edu. Use **Confirmation** on the subject line. In the text, include your name, student ID number and a phone number. You must meet deadline dates.

The University accepts cash, checks, MasterCard, and Visa for payment of fees. Fees may be paid on line with MasterCard or Visa by accessing the UTC web site at www.utc.edu, click on Current Students, then Pay Fees, select Pay Fees on line.

Avoiding Registration Problems

Act early! If you are late, you will have to wait.

As the deadline gets closer, lengthy lines may form at the Bursar's Office. The Bursar's Office, Financial Aid, Housing, and the Registration Office are often busy with telephone calls. If there is a problem with your Mocs Express Statement, notify the Bursar's Office at (423) 425-4781 immediately.

Every student who has registered during Priority Registration is responsible for the deadline.

Cancellation Policy

Failure to pay fees or set confirmation of attendance with the Bursar's Office by the published deadline will result in automatic cancellation from all classes. This applies to all students regardless of sources of funds and includes those whose fees are billed, deferred, waived, or paid with personal funds, including financial aid and graduate assistantships. All students whose registrations are cancelled will be required to reregister and pay appropriate fees, including late fees.

There is only one cancellation date each semester. Students who register after the cancellation will be held responsible for all fees and will risk receiving failing grades for all classes not dropped prior to the first day of classes in the semester.

The deadlines for the 2005-2006 academic year are:
For fall 2005, the deadline is 5 p.m. on August 11, 2005
For spring 2006, the deadline is 5 p.m. on December 16, 2005.

Prepayment Plan

Under the prepayment plan, students and/or parents choose the academic year expenses they wish to prepay, including room, board, tuition, fees, or books. The expenses can be prepaid over a period of eight months with the first installment due by May 10. The remaining seven monthly installments are payable on the tenth of each succeeding month. Please contact the Bursar's Office for details.

Deferred Payment Plan

A student who is in good financial standing with the University and has an anticipated source of funds may defer up to 50% of fees. A \$10 extension fee and at least 50% of fees are due by deadline date. The balance will be payable on the 45th calendar day of the term. An additional \$50 will be assessed if the installment is not paid on or before the due date. Financial aid recipients must first apply their aid toward payment of fees, regardless of source of funds. This plan is not offered for the summer terms.

Dorm Payment Plan

Housing students may choose to participate in the dorm payment plan. Payment equivalent to 50% of rent is due and payable at fee payment, plus a \$10 extension fee charge. The remaining balance is paid on the 45th calendar day of the term. A late payment charge of \$50 will be assessed on each monthly installment not paid on or before the due date. Financial aid recipients must first apply their aid toward payment of fees, regardless of source of funds.

Refund of Fees and Additional Charges**General**

All refund periods are based on the official first day of classes for the University, as published in the catalog and schedule of classes

(Timetable). No refund is due on courses which are dropped unless the charge for the remaining courses plus the percentage charge for the courses dropped is less than the maximum semester charge for tuition and maintenance fees.

All charges and refunds will be made to the nearest even dollar. All charges are subject to subsequent audit and verification. Errors will be corrected by appropriate additional charges or refunds.

Approximately six weeks after the beginning of the semester (except summer), a statement of account will be sent to students who owe additional fees or fines.

Fall and Spring Semesters

	Drop*		Withdrawal**	
	Charge	Refund	Charge	Refund
Prior to first day of class	0	100%	0	100%
1- 7 calendar days***	0	100%	10%	90%
8-14 calendar days	20%	80%	20%	80%
15-21 calendar days	40%	60%	40%	60%
22-28 calendar days	60%	40%	60%	40%
29 or more calendar days	100%	0%	100%	0%

*Drop - Courses dropped which do not result in complete withdrawal.

**Withdrawal - Complete withdrawal from all classes.

***Note: Only seven calendar days to drop with no charge.

FINANCIAL AID

The University of Tennessee at Chattanooga has several financial programs to assist graduate students with the cost of advanced studies. The University provides funds to students who have documented financial need; it also has assistance that is not need-based. Students who want further information about academic merit awards (graduate assistantships) should contact the department of the program to which they are applying for graduate study and obtain applications from The Graduate School office.

Students requesting need-based and non-need based federal and state financial aid from UTC will need to complete the *Free Application for Federal Student Aid (FAFSA)*. These forms and assistance are available online at www.fafsa.edu.gov.

Early application for financial aid is encouraged. The FAFSA should be mailed by February 15 for the Fall semester and September 15 for Spring semester entry. If requested, students must submit the Financial Aid Institutional Verification form and copies of income tax return forms, if filed, in order to complete a Financial Aid file. The Financial Aid Office will process applications throughout the school year for any available funds; however, qualified students who mail the FAFSA by the recommended dates and submit all required documentation by April 1, will receive maximum consideration. Students need to reapply for financial aid each year. Students must regularly check their UTC e-mail, as this is how they will receive official correspondence.

General Information

Students must be accepted for admission to the University or be eligible for continuation before financial aid awards will be made.

To qualify for assistance, a graduate student must normally be enrolled at least half time. Six graduate semester hours equals half time; nine or more graduate semester hours equals full time. Students must also be officially enrolled in a degree-seeking program, taking courses leading toward teacher certification or taking prerequisite courses required for regular admission into a graduate program. *Note:* Awards are calculated according to student enrollment classification. Students receiving financial assistance will need to notify the Financial Aid Office of any proposed changes in their enrollment classification status.

Students who are admitted as provisional or conditional graduate students are not eligible for financial assistance.

To qualify for federally funded programs (Stafford Loans), students must be citizens or permanent residents of the United States.

To maintain eligibility for financial aid, students must be in good academic standing with the University and be making satisfactory progress. For complete details on academic standing and satisfactory progress for financial aid, students should contact the UTC Financial Aid Office, 253 Hooper Hall or online at www.utc.edu/financialaid.

Academic Common Market

The Academic Common Market allows a student to enroll in an undergraduate or graduate program at a university in another state without having to pay out-of-state tuition if that program of study is not offered by the public institutions in the student's home state.

Each participating SREB state has a coordinator for the Academic Common Market. The state coordinator's name and address are listed on the SREB Web site (www.sreb.org)

Any student interested in the Academic Common market should contact the state coordinator in his or her home state. The state coordinator will help the student determine whether he or she is eligible to participate.

Student Financial Aid

Type of Aid	Application	Eligibility
Part-time employment for students who do not meet the federal guidelines for employment under the College Work Study Program	UTC Placement Office Application Student Employment Application, Financial Aid Office	All students
Stafford Loans	UTC, FAFSA	All students enrolled at least half-time
Graduate Assistantships	Graduate School Office	Graduate students who plan to enroll at least one-half time
Black Assistantships Program	Graduate School Office	Full-time Tennessee African American graduate students in specified programs
Scholarships	Graduate School Office	All students meeting donors' criteria.

Graduate Assistantships

To be eligible, a student must be fully admitted to a graduate program and have academic good standing. International students are generally not eligible for a graduate assistantships in their first semester of enrollment.

All awards and work assignments will be made through the director or dean of the respective discipline. Continuation of assistantships will be determined by the dean of The Graduate School and will be contingent upon the student's maintaining a 3.25 or higher graduate grade point average.

Assistantships serve to facilitate graduate students in the prompt and successful completion of an advanced degree program and to provide work experience in a setting under the supervision of a faculty or administrative mentor.

Research assistantships are general awards; the student assists with a range of duties, including library research, preparation of reports, field studies, and laboratory research.

In administrative assistantships, the graduate student works in an administrative office, gathering, organizing, and analyzing information. Such work may be clerical, computer-based, and/or editorial in nature. To allow maximum professional development, the student should be given the opportunity to apply his/her academic skills to the assigned tasks and develop new administrative skills.

Instructional assistantships recognize that graduate students make valuable contributions in laboratory settings and supportive activities. Graduate students should not be teachers of record unless they have earned their master's degree and meet all SACS criteria. Accordingly, students with instructional assistantships should work in limited settings under the close supervision of a specific faculty member.

The priority deadline for applying for a graduate assistantship is April 1.

Scholarships

The Graduate School has a limited number of scholarships, most of which are single course scholarships. To be eligible, students must have a minimum 3.0 cumulative GPA.

The priority deadline for applying is April 1.

- Black Scholarships provide single course awards to Tennessee residents with financial need.
- Channel 3 Scholarships provide \$1,000 awards to two African-American students in the M.B.A. program who are interested in the broadcast industry.
- Civitan Club Scholarship provides a \$1,000 award to a special education student with financial need.
- Community Development Work Study Program Fellowships are awarded by the U.S. Department of Housing and Urban Development to students with economic need majoring in Public Administration.
- Dr. John A. Dyer book scholarships provide \$500 awards to students in the Public Administration Program.
- Fincannon Scholarships are awarded to previously married women.
- Finley Scholarships are awarded to single parents, especially women.
- Stanton P. Fjeld Scholarships are awarded to Criminal Justice students with high academic achievements.

- Geraghty Scholarship is for a student in the M.B.A. program with a humanities undergraduate major.
- The Graduate School Scholarship recognizes a student in any discipline who has need and shows unusual merit.
- Lebovitz Scholarships are awarded to students of the Jewish faith.
- Music performance grants are available for the bands, singing groups and orchestra. Applications are made to the head of the Music Department.
- Radin Scholarship
- Rotary Club of Chattanooga Scholarships are awarded to graduate students who are alumni of Chattanooga City or Hamilton County public schools.

Note:

There may be special awards for students in Nursing or Physical Therapy.

Student Loans

Subsidized Stafford Loans (formerly Guaranteed Student Loans)

These student loans are government-insured loans with no interest charged while the student is in college and are repayable after graduation or withdrawal from college.

Eligible graduate students may borrow a maximum of \$8,500 per academic year.

To qualify for Stafford Loans, students need to file the *Free Application for Federal Student Aid* and have a complete Financial Aid file. Students must be enrolled on at least a half-time basis (six hours for fall, spring, or summer terms).

Unsubsidized Stafford Loan

These non-need based loans are available to students enrolled on at least a half-time basis. (Six hours for fall, spring, or summer terms.) Graduate students may borrow up to \$8,500 per year. These loans are not linked to family income; and, therefore, all students who have not previously defaulted on a student loan are eligible.

To have unsubsidized Stafford Loans processed, students need to file the Free Application for Federal Student Aid and have a complete Financial Aid file. Applications are available from the UTC Financial Aid Office or online at www.utc.edu/financialaid.

Students admitted as provisional or conditional graduate students are not eligible for loan assistance.

Additional Unsubsidized Stafford Loans

These non-need based loans are available to students who need additional funding beyond the \$8,500 annual limit. Students may apply for an additional \$10,000 per year if they have sufficient educational costs.

Student Employment

The Chattanooga Symphony offers an orchestral apprentice program for a limited number of qualified orchestral performers. Eligible students receive wages equal to the prevailing union contract. Interested students should contact the head of the music department.

Student Life and Educational Services

EDUCATIONAL SERVICES

Accommodations and Assistance

The University of Tennessee at Chattanooga is strongly committed to complying with the Americans with Disabilities Act and assuring that no qualified individual is by reason of disability, excluded from participation in or denied the benefits of any services, programs, or activities provided by the University. The Office for Students with Disabilities (OSD) provides reasonable accommodations to persons with disabilities whenever necessary to afford otherwise qualified students access to services, programs, or activities. The Director of Affirmative Action, Dr. Barbara Wofford, holds the responsibility of ensuring University compliance with ADA. For more information, please come by the OSD office located at 110 Frist Hall, or call (423) 425-4006.

Adult Services Center

The Adult Services Center, located on the first floor of the University Center, is open from 11 a.m.–7 p.m., Monday through Thursday; 11 a.m.–5 p.m., Friday, and 10 a.m.–noon Saturday, for the convenience of non-traditional students, most of whom work full time. The center provides individualized advisement, registration, fee collection, and other University services for non-traditional students. All admissions for second baccalaureate degree-seeking students are processed in the center. Workshops and seminars related to educational opportunities and transitions are conducted regularly for current students or individuals who are interested in either entering or returning to college.

Asia Program

The purpose of the Asia Program is to enhance understanding of Asia by the general public and the University community through a variety of educational services including courses, exchanges, summer institutes, and publications such as *Education About Asia*.

Bookstore

The University Bookstore is operated by Barnes & Noble Bookstores, Inc. The store is located in the University Center and offers new and used textbooks for all courses and all required supplies for class along with UTC merchandise - T-shirts, sweatshirts, fraternity and sorority items, etc. Services provided include daily book buy back with price paid on wholesale basis. Prices are higher at the end of the semester, and many fluctuate depending on inventory needs of the bookstore for the next semester.

The Bookstore accepts checks, cash, Mocs Cards, MasterCard, Visa, American Express, and Discover cards. For more information, please contact the bookstore at (423) 425-4107.

Cadek Conservatory of Music

The Cadek Conservatory has as its goal the education of music students of all ages who are not enrolled at the University level. The conservatory offers applied music courses in virtually all instruments and voice in a curriculum which includes theory, chamber music, and other ensemble activity. This comprehensive curriculum has special courses for young children including Suzuki violin and piano.

The conservatory is an accredited institutional member of the National Association of Schools of Music and the National Guild of Community Schools of the Arts. The faculty ranges from full-time conservatory teachers to public school music teachers who serve part-time. The faculty includes many University music faculty and other prominent performing musicians as well.

For further information, please consult the *Cadek Conservatory of Music Bulletin* or call (423) 425-4624.

Center for Applied Engineering and Technology, Cranston Pearce

The Cranston Pearce Center for Applied Engineering and Technology provides research and development opportunities for both faculty and students. Projects include basic design and product development, power distribution analysis, and environmental technology applications. The basic purpose of the center is to help stimulate economic development of the region through an infusion of technology into the marketplace. This center works in con-

junction with the Center of Excellence for Computer Applications and with the Burkett Miller Chair of Excellence in Management and Technology to pursue appropriate technology applications. The center actively cultivates and participates in partnerships with industry and government agencies.

Center for Economic Education, The Probasco Chair of Free Enterprise

The Probasco Chair of Free Enterprise and its associated Center for Economic Education design and implement research projects and educational programs to educate UTC students, secondary and elementary school teachers, and the general public, including the clergy, media, employees, and business executives, about basic economic principles and the unique features of the free enterprise system.

Center of Excellence for Computer Applications (CECA)

The Center of Excellence for Computer Applications (CECA) is one of the original centers of excellence in Tennessee. Its mission is to conduct multidisciplinary research in the development and application of computer-based technologies, to support innovative research projects, and to provide exemplary dissemination, training, and support in advanced technology. CECA funds a variety of grant programs to support teaching, research, and outreach related to technology.

Children's Center

The UTC Children's Center is an early childhood program and learning lab operated by the Department of Human Ecology in the College of Health, Education and Professional Studies. The center serves children from six weeks of age through prekindergarten in two sites located at Brown and Battle Academies. The Tennessee Department of Human Services licenses the center which has attained a Three Star Rating at each site. The center is accredited by the National Association for the Education of Young Children. The prekindergarten program is approved by the Tennessee Department of Education. The center provides a clinical laboratory environment for early childhood education majors and students in other fields related to children and families.

Priority for enrollment is given to children of UTC faculty, staff and students, faculty and staff of Brown and Battle and attendance zone families. The center maintains a waiting list. Waiting list applications are available by calling the center at 209-5735 (Battle) or 209-5740 (Brown). The Coordinator at each site maintains the waiting list and provides tours of the facility.

Computing Resources, UTC Campus

UTC's computing resources maintain and manage campus hardware and software through campus laboratories, administrative and academic mainframes, and data communication networks.

Computing Services

Computing Services supports and provides facilities to handle the student records database, which includes recruiting, admissions, registration, fee payment, and graduation. It also supports such auxiliary functions as continuing education, parking, telephone services, and housing. The computing facilities available on the UTC campus include an HP3000/969/120, 4-way HP9000/K570 and 4 Sun UNIX machines, all of which are used for instruction

and research. The UTC campus computer network is connected to the Internet, supporting world wide web access for UTC computer users. In addition, this unit handles computerized test grading.

Continuing Education and Public Service, Division of

The Division of Continuing Education and Public Service offers a variety of credit courses in locations other than the UTC campus. Convenient for students and the community at large, off-campus courses carry the same credits as their on-campus counterpart. Offerings are available from the Division via interactive video, Web-based delivery and cable television.

The Division provides lifelong learning opportunities to meet the needs of individuals in UTC's service region, including professional certification programs, workshops and conferences.

Counseling and Career Planning

The Counseling and Career Planning Center at The University of Tennessee at Chattanooga offers a variety of services to students. These services include personal, vocational, academic counseling, and crisis intervention, for individuals and groups. Consultation services, workshops and other programs are developed and available for the university community.

The staff of the center includes professionally trained counselors and a psychologist, who have achieved appropriate certification and/or licensure at the state and national levels. The center serves as a practicum site for graduate students who work under the supervision of the center's professional staff.

Programs and services include: career planning; personal counseling; outreach programs/workshops; consultation; and testing. Information on a wide variety of careers, opportunities, graduate schools, and career development is available from books, pamphlets, audio and video resources, and computers. The resources are provided without charge. There is, however, a minimal charge for testing materials.

The services of the Counseling and Career Planning Center are confidential. New clients come to the center on a walk-in basis. The initial session generally takes about 15 minutes. Location and hours: Counseling & Career Planning Center, University Center, (423) 425-4438, is open Monday through Friday 8 A.M. – 5 P.M.

Dining Plans

Aramark Campus Services manages the food services on UTC's campus. The Crossroads opens each weekday and offers flexible meal plans to meet personal needs. The MocsCard food point plans are the best way to purchase meals on campus by providing a secure, convenient method of payment at any of the UTC Dining Services locations. The Mocs Card can be used at The Crossroads, located next to the UTC Lupton Library, featuring Subway, Starbucks coffee, Grilleworks, Bené Pizzeria, and more. The card may also be used at the Java City coffeehouse located in Fletcher Hall, as well as the Mocs Express Convenience Store in the UTC Place apartments. To place points on Mocs Card, visit the UTC Bursar's Office in Fletcher hall. Employment opportunities are also available. For more information, please contact Aramark at (423) 425-4200 or visit the ID Card Center located in Fletcher Hall.

Health Services

Student health services are provided by a certified family nurse practitioners under the medical direction of a group of local physicians. Clinic hours are 8:30 a.m.– 1:00 p.m., Monday through Friday, 1:00–5:00 p.m. by appointment. Emergency first aid is available to the entire University community from 8:30 a.m.– 5:00 p.m., Monday through Friday. The scope of services includes office visits for general illnesses, allergy injections, flu immunizations, hepatitis B immunizations, TB skin testing, physical exams, lab services, educational programs, counseling, and referrals. All currently enrolled University students are eligible for health services. The student is responsible for all fees for referral services such as emergencies, hospitalization, surgery, X-rays, lab work, and medicines. The University recommends that a student obtain separate hospitalization and medical insurance. A health insurance policy is available through the University and covers a schedule of expenses for surgery and hospitalization in case of accident and illness. All international students are required to enroll in the insurance program. Information about this policy is mailed to students in the summer. The insurance policy is also available in Student Health. For other information concerning Student Health Services or to schedule an appointment, please contact the director at (423) 425-4453.

Housing

The University offers a program of differentiated housing which allows students the option of living in facilities with different kinds of programming and supervision. Facilities include traditional style units and apartments housing. Further information concerning the details of these plans is available from the Housing Office, (423) 425-4304, or you can find information online at www.utc.edu and is sent upon request.

Mocs ID Cards

The University provides each student with an official University ID card, the Mocs Card. This card is used to gain admission to athletic events, check out books from the library, obtain special rates and privileges at many University functions, and to indicate the individual's right to use University facilities. Mocs Cards are also a debit card for purchasing at the following locations:

- Food Services
- Bookstore
- Parking/Bursar's Office
- University Ticket Office
- Fine Arts Ticket Office
- Arena Ticket Office and Concessions
- Select copy and vending machine locations.

Students deposit a minimum of \$50 to open a debit card balance. Additional monies can be added at anytime in \$20 increments. UTC deposits can be made in the form of cash, check and Visa or Master Card in the UTC Bursar's Office, 216 Fletcher Hall.

The Mocs Card Center is located in 216 Fletcher Hall at the corner of Douglas and McCallie Avenue. Office hours are Monday-Friday, 8:00 a.m. to 5:00 p.m. Hours are extended the first two weeks of each semester, 8:00 am to 6:00 p.m. The telephone number is 423-425-2218, fax: 423-425-4795, or email address is UTCID@utc.edu.

One card is intended to last throughout a student's entire stay at UTC. Lost or stolen ID cards should be reported immediately to the bookstore, food services, campus security or ID office. Replacement cards are made at the ID office for a cost of \$10. No fee is charged for first ID card or to use the ID card as a debit card.

Instructional and Computing Support Services

The primary function of Instructional and Computing Support Services is to provide support for technology across the campus. The unit is composed of the Help Desk, Microcomputer Training, Campus Student Microcomputer Labs, and Media Resources.

The Help Desk provides technical hardware and software support for faculty and staff and coordinates the set up of microcomputers on campus. The Help Desk also installs and supports general campus site-licensed software applications, including operating systems, word processing, database, spreadsheets, e-mail, anti-virus, and Internet software. Hardware support includes troubleshooting and isolation of equipment problems, memory upgrades, and battery changes.

Media Resources provides instructional audiovisual support to faculty and staff. Services include the delivery of audiovisual equipment to the classroom, videotaping of classroom lectures or demonstrations, and technical support for satellite teleconferencing.

The Microcomputer Training unit provides training and short courses to faculty and staff. Courses can also be arranged by departments or to individuals to cover specific applications that are supported by the campus.

There are several Campus Student Microcomputer Labs on campus. The labs provide students with access to common application packages as well as applications that are specific to disciplines, printing, scanning, and access to the Internet. Faculty may also reserve the student labs a maximum of twice a semester to teach particular application packages to their students.

Lupton Library

The Lupton Library is the center of many of the teaching, learning, and research activities of the students, faculty, and staff of UTC, as well as members of the metropolitan Chattanooga community. The library maintains a collection of over 473,000 books; 2,700 current periodical subscriptions; 24,000 reels of microfilm; and 14,000 audiovisual items. Total holdings comprise over 1.7 million physical pieces of material.

The Lupton Library's on-line catalog enables users to locate items in the library's collections. Anyone with an Internet connection can access the online catalog by visiting the library's Web page at <http://www.lib.utc.edu>. In addition, electronic access to databases which index and abstract magazine and journal articles in business, medicine and health, education, psychology, sociology, environmental studies, and many other areas is available in the library. The electronic indexes can be accessed in the library and on campus. Students, faculty and staff who have a Moccasun or Cecasun account can access the electronic indexes from off-campus. Reference librarians staff the Reference Desk on the first floor of the Lupton Library during almost all hours of operation. They are available for individual instruction on the use of the many resources owned and accessed by the library. They are also the best resource for service details and policy clarifications. Reference librarians also work with graduate students who would like to search the more than 400 off-site databases

available through Dialog Information Services. However, this service is available only to those who are willing to assume the cost of the transactions.

To borrow circulating materials from the Lupton Library, individuals must present a valid, barcoded identification card. The standard loan period for graduate students is 28 days. Along with the collections of UTC's Lupton Library, UTC students, faculty, and staff with valid identification are granted reciprocal borrowing privileges at all libraries of The University of Tennessee and Tennessee Board or Regents Systems. In addition, UTC students may borrow from other libraries materials not owned by Lupton Library. This Interlibrary Loan Service sometimes has charges associated with it. Charges are paid by the student making the request.

UTC faculty members may reserve certain items for special use by students in their classes. These items are listed in the online catalog as "on reserve" and are shelved behind the Circulation Counter. The loan period for these items ranges from two hours to one week. The use of some reserved items may also be limited to within the UTC Library building.

Library materials which are lost or returned late are subject to fines. Fines accrue at a rate of 20 cents per day, per item. Fines will accrue to a maximum of \$5 per item. If fines are not paid as required, responsible individuals will be blocked from use of the library. These individuals will also not be permitted by the business office and the registrar either to register or to receive course credits and transcripts until the outstanding obligations are fully cleared.

Minority Affairs

The Office of Minority Affairs provides academic and social support to minority students attending UTC. The office works in conjunction with other student groups and the community to encourage cultural diversity. The office sponsors programs such as the Pre-Labor Day Picnic, Black History Month, Littleton H. Mason Singers, Horace J. Traylor Minority Leadership Award, Littleton H. Mason Scholarship; Tennessee Pre-Professional Fellowship Program, and the National Pan-Hellenic Council.

Oak Ridge Associated Universities

The University of Tennessee at Chattanooga is a sponsoring institution of Oak Ridge Associated Universities (ORAU), a not-for-profit consortium of 62 colleges and universities and a management and operating contractor for the U.S. Department of Energy (DOE) with principal offices located in Oak Ridge, Tennessee. Founded in 1946, ORAU identifies and helps solve problems in science, engineering, technology, medicine, and human resources, and assists its member universities to focus their collective strengths in science and technology research on issues of national significance.

ORAU manages the Oak Ridge Institute for Science and Education (ORISE) for DOE. ORISE is responsible for national and international programs in science and engineering education, training and management systems, energy and environment systems, and medical sciences. ORISE's competitive programs bring students at all levels, precollege through postgraduate, and university faculty members into federal and private laboratories.

ORAU's office for University, Industry, and Government Alliances (UIGA) seeks out opportunities for collaborative alliances among its member universities, private industry, and federal

laboratories. Current alliances include the Southern Association for High Energy Physics (SAHEP) and the Center for Bio-Electromagnetic Interaction Research (CBEIR). Other UIGA activities include the sponsorship of conferences and workshops, the Visiting Scholars program, and the Junior Faculty Enhancement Awards.

Contact the director of research for the Center of Excellence for Computer Applications at (423) 425-4787 for more information about ORAU programs.

Placement Services

Located in the University Center, the Placement and Student Employment Center assists degree candidates, alumni, and students in securing full- and part-time employment. The service is free and available year round. Degree and nondegree job orders are placed on the bulletin board in the Placement Center for students to peruse at their convenience. Part-time jobs as well as temporary opportunities are posted.

Students should register with the center early in their final year to take advantage of the employment recruiting season, the center's *Job Opportunities* bulletin, and various seminars and workshops. Individual employment counseling is also available.

Southeast Center for Education in the Arts

The Southeast Center for Education in the Arts is an umbrella for three institutes in arts education that focus on music, theatre, and visual arts. Since 1988, the Center has operated intensive professional development programs to help administrators, arts specialists, classroom teachers, artists and parents understand the nature of art, music, and theatre as they discover exciting ways to integrate the arts into the curriculum.

SECA has leveraged more the \$7 million in support of local and regional education efforts.

Beginning with two local school districts, the work of the Center has grown to encompass more than 450 elementary and secondary schools representing 85 districts in eight states (Alabama, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Tennessee, Virginia). School teams consisting of administrators, arts specialists, classroom teachers, artists, and parents interact to develop unique and exciting arts education programs that are integrally linked to the overall school curriculum.

One-week Core Institutes are held simultaneously each summer on the UTC campus and four satellite institutes. Choosing either dance, music, theatre, visual art, or arts administration, participants investigate the historic and cultural context in which works of art were made, engage in critical and aesthetic discussions and interrelating curriculum. A school participating for the first time is encouraged to send a team comprised of an administrator and at least two teachers for one or more arts areas.

Educators who have previously attended a core institute can continue their professional development through a one-week Multi-Arts Institute. Participants explore a combination of dance, music, theatre, and visual art. Collaboration with the South East Center for Dance Education at Columbia College in Columbia, SC, provides the dance component.

Summer Institute participants can register for two hours of graduate or undergraduate credit for the Core Institute and the Multi-Arts Institute. They must complete extracurricular projects after the institutes end. UTC students can also attend by

special arrangement.

For more information, see the Center's homepage: <http://www.utc.edu/SCEA>.

Student Handbook

Distributed at the beginning of each academic year, the *Student Handbook* provides detailed information on student services. It also contains information on the Student Government Association and specific rules for the purpose of regulating campus life. These rules are stated in the Honor Code, Student Conduct Code, and other codes regulating groups.

Student Support Services

Student Support Services provides free academic support to eligible UTC students. Services include:

Peer Tutorials— The Peer Tutorial program provides additional assistance to students having difficulty grasping specific course skills. The subjects for which assistance is offered are core courses taken by freshman and sophomores. Students may select a single appointment or work with a peer tutor on a weekly basis throughout the semester.

Writing Skills —The Writing Services' instructional approach assumes that reading, writing, and computer literacy are related communication skills. Peer tutors offer advice and instruction concerning problems in content, structure, and mechanics. One-on-one tutoring or work on computer-generated exercises is used to enhance computer and reading skills.

Peer Mentoring — The Peer Mentoring program provides opportunities for freshmen to build relationships with successful upperclass students. The goal of the program is to help students bond with the University and develop close relationships with peers.

Teaching Resource Center, Grayson H. Walker

The Grayson H. Walker Teaching Resource Center staff works with faculty to improve teaching and learning, and to integrate technology into the classroom. The Walker Teaching Resource Center provides campus-wide faculty development seminars, workshops, and individual consultations on methods to improve teaching, learning, and to integrate technology into the classroom. Virtual workshops on topics are also available through the Walker Teaching Resource Center website at <http://www.utc.edu/Teaching-Resource-Center/>. The Walker Teaching Resource Center provides instructional design consultation for faculty who wish to produce multimedia and other instructional materials.

Writing Center

The Writing Center helps students from all disciplines at all stages of their educational development to become more skillful, more aware, and more independent writers.

Toward that end, the Center works in co-operation with the UTC Department of English and under the supervision of the Dean of Arts and Sciences to complement and extend students' classroom experience by providing professional and peer tutoring and consultation. Tutors are trained in the practice of collaborative learning, a teaching/learning venue in which writers become actively engaged in the process of finding their own answers and developing the skills necessary to become their own critics

and editors, rather than relying on outside sources for answers. The objectives of the Center are to:

- Supplement and complement instruction students receive in writing classes.
- Provide assistance for writing tasks associated with non-writing courses.
- Provide resources and an environment in which to work on any writing task, whether it be for a writing class, another class, or personal need.
- Provide current references, including handouts, exercises, software, handbooks, and internet resources for use in training writing center personnel, for use in tutoring sessions, for quick reference for walk-in clients, and for use by faculty across the curriculum.
- Provide one-on-one assistance through regularly scheduled help sessions or walk-in sessions; small group instruction; work shops; and classroom consultations.
- Provide grammar review and help writers develop their own editing/proofreading strategies, rather than proofreading for writers.
- Serve as a resource for all faculty both in their own writing needs and in their use of writing in their classes.
- Provide workshops on specific topics of general interest or to meet instructors' particular needs for their classes.
- Provide assistance with work processing or use of software used in writing courses.

Wheeler Center for Odor Research

The William H. Wheeler Center for Odor Research is a cross-disciplinary program established by a gift from the Wheeler estate. The center supports the study of the objective relationships between various substances and their effect upon olfaction.

Youth Educational Assessment & Research Center

The Youth Educational Assessment & Research Center (YEAR) is located in Room 308 of Hunter Hall. This center was established primarily to serve as a teaching/learning laboratory for College of Education and Applied Professional Studies preservice and graduate teacher education programs but also offers clinical experiences to students in school psychology and related disciplines.

Staffed by a school psychologist and graduate students, the YEAR Center provides the campus with a demonstration model for training in the multidisciplinary approach to consultation, psychoeducational assessment, program planning, and interventions. The center also houses a library of test materials and resources and offers faculty and students a variety of research opportunities. Additionally, youths within the greater Chattanooga area are accepted as clients upon referral by their parents, legal guardians, or school system. For additional information, please contact the coordinator of the YEAR Center at (423) 425-4175.

Academic Colleges

The College of Arts and Sciences

Dr. Herbert Burhenn, *Dean of Arts and Sciences*
(423) 425-4635 or email at Herbert-Burhenn@utc.edu
www.utc.edu/artsci/

Dr. Robert Swansbrough, *Associate Dean of Arts and Sciences* (423)
425-4635 or email at Bob-Swansbrough@utc.edu

In the College of Arts & Sciences at The University of Tennessee at Chattanooga, these words express a shared commitment to students—to their education, to their personal growth, to their success in their careers and their lives.

Small classes, careful advising, and lots of personal attention make this commitment work for students majoring in the fine arts, the humanities, the sciences, and the behavioral sciences, and for all the students who prepare for professional study through the liberal education opportunities the college provides.

UTC offers its undergraduates a special advantage: the benefits of a traditional campus atmosphere in combination with the opportunities only a major state university can provide. Graduate students have opportunities to engage in research and work with practitioners in a metropolitan environment.

In the College of Arts & Sciences, about 180 full-time faculty, most having earned a Ph.D., hold major responsibilities for undergraduate instruction. Professors with national and international reputations in their fields routinely teach freshmen and sophomores, usually in small classes.

Many students have the opportunity to work with faculty in the pursuit of undergraduate and graduate research projects. Internships, practicums and cooperative education opportunities give students “hands-on” professional experiences to enhance their resumes prior to entering a graduate school or the job market.

The College offers master's degrees in Criminal Justice (MSCJ), English (M.A.), Environmental Science (M.S.), Music (M.M.), and Public Administration (M.P.A.)

Certificate Programs

- English
 - Writing/Rhetoric
- Public Administration
 - Nonprofit Management

Master's Degrees

- Criminal Justice (MSCJ)
- English (M.A.)
 - Literature
 - Writing
- Environmental Science (M.S.)
- Music (M.M.)
- Public Administration (MPA)

The College of Business

Dr. Richard Casavant, *Dean of the College of Business*
(423) 425-4313 or email at Richard-Casavant@utc.edu

Dr. John Fulmer, *Associate Dean of the College of Business*
(423) 425-4101 or email at John-Fulmer@utc.edu

Assistant Professor Kimberly Turner, Executive Director of Graduate Programs (423) 425-4210 or email at Kim-Turner@utc.edu
www.utc.edu/units/business

Mission Statement

The College of Business Administration of The University of Tennessee at Chattanooga is committed to providing quality educational programs that prepare students for managerial, professional, or entrepreneurial opportunities. The College offers

undergraduate degree programs in accounting, finance, entrepreneurship, management, and marketing. At the graduate level, the Master of Business Administration, Executive MBA, and Master of Accountancy programs prepare students for management and accounting positions of increasing responsibility.

As a College within a state-supported metropolitan University with financial support from the business community, we recognize our responsibility to:

- Provide students with the knowledge, business skills, and professional education necessary for success.
- Engage in business research that serves the needs and interests of business and management, and support pedagogical research to enhance the education process.
- Provide service to the University, academic profession and Chattanooga community.

The College is committed to the principles of diversity so that varied and diverse viewpoints are appreciated and valued.

The College offers master's degrees in :

- Accountancy (MAcc.)
- Business Administration (MBA)



UTC's College of Business Administration is accredited by the Association to Advance Collegiate Schools of Business International (AACSB International). Of the 2,000 plus business schools in the world, there are only approximately 400 accredited schools. AACSB International accreditation requires that business programs meet rigorous standards related to faculty, students, curriculum, community relations and support infrastructure, e.g. technology, library and building resources. Schools must show that they meet standards over time. They must monitor and continuously improve the programs and the related outcomes.

The College of Engineering and Computer Science

Dr. Ronald Bailey, *Dean, College of Engineering and Computer Science* (423) 425-2256 or email at Ronald-Bailey@utc.edu

Dr. David Whitfield, *Associate Dean of Engineering and Computer Science* (423) 425-5510 or email at Dave-Whitfield@utc.edu

The College of Engineering and Computer Science at the University of Tennessee at Chattanooga strives to serve the people, businesses, and industries of our region and support their technical needs. The College exists as the region's principal resource for educational, applied research, and service programs. Grounded in the application of scientific and mathematical principles and based on a commitment to interdisciplinary study, our programs and activities:

- Prepare undergraduate students for rewarding professional careers or graduate study in engineering, technology management, and computer science and for a lifetime of creative thinking and adaptive learning as productive citizens;
- Prepare post-baccalaureate and graduate students for continuing professional development and career advancement;
- Promote excellence in teaching and learning through scholarship in our disciplines;
- Perform and disseminate applied research that solves problems of transforming information, matter, and energy into structures, machines, products, technologies, systems, organizations, and processes; and
- Serve the University and our professional communities with leadership and distinction.

The College of Engineering and Computer Science offers certificate programs and master's degrees, and a doctorate.

Certificate Programs

- Computer Networking
- Fundamentals of Engineering Management
- Internet Applications Programming
- Project Management
- Quality Management

Master's Programs

- Computer Science (M.S.)
- Engineering (M.S.)
 - Chemical
 - Civil
 - Computational
 - Electrical
 - Industrial
 - Mechanical

Doctoral Program

- Computational Engineering (Ph.D.)

The College of Health, Education and Professional Studies

Dr. Mary Tanner, *Dean of the College of Education and Applied Professional Studies*. (423) 425-4249 or e-mail at Mary-Tanner@utc.edu

Dr. Tony Lease, *Associate Dean of the College of Education and Applied Professional Studies* (423) 425-4171 or email at Tony-Lease@utc.edu

www.utc.edu/units/educationandappliesprofessionalstudies/

The primary goal of the College of Education and Applied Professional Studies is to prepare qualified practitioners to be professional leaders in various roles within educational institutions and professional agencies, both public and private.

The College seeks to combine quality and innovation in its programs, relating intellectual life to the contemporary problems in the professional fields they serve and creating centers of service to those professional communities.

Certificate Programs

- Education
 - School Leadership
 - Urban Specialist
- Nursing
 - Family Nurse Practitioner
 - Health Care Informatics
 - Nurse Anesthesia

Master's Programs

- Counseling (M.Ed.)
 - Community
 - School
- Elementary Education (M.Ed.)
 - Early Childhood
- Educational Technology
 - Elementary Education
 - Inclusion
 - Licensure
 - Reading
 - Research/Thesis
 - Urban Specialist
- Health and Human Performance (M.S.)
 - Advanced Level
 - Clinical Exercise Physiology
 - Entry Level
 - Worksite Health and Productivity
- Nursing (M.S.N.)
 - Administration
 - Anesthesia
 - Education
 - Family Nurse Practitioner
- School Leadership (M.Ed.)
- Secondary Education (M.Ed.)
 - Art
 - Educational Technology
 - English
 - Health Education
 - History
 - Inclusion
 - Licensure
 - Mathematics
 - Science
 - Social Sciences
 - Research/Thesis
- Special Education (M.Ed.)
 - Early Childhood
 - Emotional/Behavioral Disorders
 - Gifted
 - Mild Disabilities
 - Moderate/Severe Disabilities

Specialist Program

- Advanced Educational Practice (Ed.S.)
 - Educational Technology
 - School Psychology

Doctoral Programs

- Learning and Leadership (Ed.D.)
- Physical Therapy (DPT)

Graduate Degree Programs

Accountancy, MAcc.

The Master of Accountancy is primarily for students who want a program of advanced study in accounting. It is designed to provide students with a greater breadth and depth in accounting education than is possible in the baccalaureate or master of business administration programs. Completion of a Master of Accountancy will help students prepare for the Uniform CPA examination which requires 150 semester hours. Each required MAcc course will be offered at least once a year.

Mission of the Department of Accounting - Graduate Level

The mission of the Department of Accounting at the graduate level is to:

- * Advance the mission of the College of Business Administration
- * Provide a program of advanced study in accounting (through the Master of Accountancy) to students holding a bachelor's degree in any major
- * Provide an opportunity for graduate-level students to advance professionally in their careers and in the accounting profession

The Department of Accounting is committed to providing high-quality educational programs supported by ongoing faculty research and active participation in community and professional organizations.

Admission

A student who holds a bachelor's degree in any discipline from a regionally accredited college or university may be considered for admission to the Accountancy program. Applications are accepted by the Graduate School at any time; however, in order to ensure adequate time for consideration, the completed application, Graduate Management Admission (GMAT) test score, and any other supporting credentials should be received by the Graduate School no later than one month prior to the beginning of the term for which admission is desired.

Application Procedures

To be accepted into the M.Acc program, a student must complete all of the following:

1. Have a bachelor's degree from a regionally accredited institution (any major is acceptable). Two official transcripts are required from each previously attended college. An application and non-refundable application fee of \$25 should also be submitted to the Graduate School.
2. Be granted admission to UTC's Graduate School based on a minimum cumulative undergraduate GPA of 2.5 or a GPA of 3.0 in the senior year. Applicants who do not meet this admission requirement may be considered for conditional admission.
3. Have an official Graduate Management Admission Test (GMAT) score. The GMAT is offered at Sylvan Learning Centers. The GMAT application brochure may be obtained from the director of graduate programs in business or from the Graduate School.
4. Meet the minimum acceptable admissions index (AI) of 950. The admissions index is calculated as follows: $200 \times (\text{undergraduate GPA}) + \text{GMAT Score} = \text{AI}$. Effective January 1, 2006, all students must earn a 450 or higher on the GMA 7 to be accepted.

Program Requirements

The MAcc. Program requires that a student complete a minimum of 30 semester hours credit in graduate course work. Students admitted to the program who lack academic experience in certain areas will be assigned up to 21 hours of additional course work in accounting foundation courses and 21 hours of general business core courses. Only previous course work is considered in the waiving of foundation and core courses. Once the foundation and core requirements are completed, the MAcc curriculum must be completed.

Accounting Foundation courses: (offered only at undergraduate level)

BACC 300	Intermediate Accounting I	
BACC 301	Intermediate Accounting II	
BACC 302	Intermediate Accounting III	
BACC 305	Managerial Cost Accounting	
BACC 307	Federal Tax Accounting	
BACC 405	Auditing	
BACC 408	Accounting Information Systems	
	<i>Total</i>	<i>21 hours</i>

Core Courses (leveling courses for non-business majors)

ECON 501	Concepts in Economics	
BMGT 571	Business Statistics	
BACC 572	Foundations of Accounting	
BFIN 573	Foundations of Finance.	
	<i>Prerequisite: BACC 572 or equivalent</i>	
BMKT 574	Foundations of Marketing Strategy.	
	<i>Prerequisite: ECON 501 or equivalent</i>	
BMGT 575	Human Behavior & Organization	
BMGT 576	Productions & Operations Management.	
	<i>Prerequisite: BMGT 571 or equivalent</i>	
	<i>Total</i>	<i>21 hours</i>

**All required courses must be completed before more than six hours of MAcc or elective courses are completed.*

MAcc Courses:

BACC 531	Advanced Managerial Accounting & Control
BACC 536	Accounting Information Systems
BACC 542	Tax Research and Advanced Tax Topics
BACC 547	Financial Accounting Theory and Issues
BACC 552	Advanced Auditing
BACC 589	Accounting Policy

Electives—The remaining 12 semester hours of course work are approved electives of which three semester hours must be in accounting. At least 24 semester hours must be taken at the graduate (500) level.

Total 30 hours.

Transfer Credit

Six graduate credit hours of courses completed at other universities for graduate credit may be considered to satisfy MAcc. degree program requirements at UTC. A transferred course generally must form a logical part of the MAcc. program to be approved.

Those who request transfer credit must be prepared to provide the university catalog in effect at the time at which the courses were completed as well as any other supporting information to the MAcc. Executive Director of Graduate Programs in the College of Business Administration and to the Dean of the Graduate School. Additional requirements regarding transfer credit may be found on page 24.

Admission to Candidacy

To be eligible for admission to candidacy, a student must have completed the required foundation and core courses and nine hours of MAcc. or elective courses.

An application for candidacy may be obtained on-line or in the Graduate School Office. Students should refer to page 11 for additional regulations regarding admission to candidacy. The ap-

plication for candidacy must be approved by the MAcc. Director and the Dean of the Graduate School prior to completion of more than 18 hours.

Advanced Educational Practice, Ed.S. Educational Technology Concentration

Professor Tony Lease, Coordinator
(423) 425-4171 or email at Tony-Lease@utc.edu

This specialist degree in education is a post-master's sixth year degree with a focus in educational technology. It is designed to generate teachers with high levels of proficiency in the use of technology in school and classroom and other educational settings. Students will be prepared to provide leadership in the field of educational technology.

Admission:

In addition to regular graduate admission requirements, applicants must meet the following requirements:

1. A master's degree from a regionally accredited college or university.
2. GPA of at least 3.25 on all graduate work
3. GRE score of at least 1350 on the analytical, quantitative and verbal sections with no score below 400 on each section
4. Written statement outlining reasons for pursuing the degree
5. Three letters of reference from professional colleagues and/or supervisors.
6. Résumé
7. Evidence of computer literacy

Course Requirements:

A minimum of 36 semester hours is required for the degree. This consists of 15 hours in the technology concentration, 9 hours in the leadership core, and 6 elective hours. A culminating project with 6 hours in capstone coursework is also required. The student may seek admission to candidacy status by filing a written plan for the capstone project which will be presented and defended before a three member Candidacy Committee. Students may proceed to candidacy after completing 12 credit hours of coursework.

Leadership Core:

EDS 605	Reflective Leadership	3
EDS 608	Technology in Education	3
EDS 610	Program Evaluation	3

Technology Concentration:

EDS 613	Teaching and Learning	3
EDS 623	Applications of Computers: Interactive Media	3
EDS 624	Distance and On-Line Learning	3
EDS 625	Planning and Implementing Technology	3
EDS 630	Instructional Design & Development	3
EDS 690	Capstone	6

Electives 6

Total **36**

Advanced Educational Practice, Ed.S. School Psychology Concentration

Professor George Helton, *Coordinator*
423/425-4171 or e-mail @George-Helton@utc.edu

The concentration in school psychology is designed to produce graduates who: meet requirements for licensure in school psychology from the Tennessee Department of Education; are prepared to utilize commonly accepted “best practices” in their work as school psychologists; and are prepared to provide leadership in their field to schools and other organizations serving children and adolescents.

Admission:

In addition to regular graduate admission requirements, students with bachelor's degrees seeking admission to the concentration must:

1. Submit transcripts of all undergraduate work.
2. Submit scores on the Graduate Record Examination. GRE scores will be combined with undergraduate GPA to form an admissions index score. Students meeting or exceeding a minimum admissions index score will be considered for admission.
3. Show evidence of having completed a minimum of 18 semester hours of undergraduate or graduate courses in psychology and/or education (with no grade below C) including 3 semester hours in general or introductory psychology, 3 semester hours in child/adolescent development, and 3 semester hours of characteristics of exceptional children.
4. Submit 3 letters of reference from professors and/or community professionals familiar with their academic and/or professional work.

In addition to other graduate admissions requirements, students with master's degrees or higher seeking admission to the concentration must:

1. Submit transcripts of all graduate work. Students with overall GPAs above 3.0 on all graduate work will be considered for admission.
2. Show evidence of having completed a minimum of 18 semester hours of undergraduate or graduate courses in psychology and/or education (with no grade below C) including 3 semester hours in general or introductory psychology, 3 semester hours in child/adolescent development, and 3 semester hours of characteristics of exceptional children.
3. Submit 3 letters of reference from professors and/or community professionals familiar with their academic and/or professional work.

Degree Requirements:

Students entering the concentration with a bachelor's degree and no graduate courses applicable to degree requirements must:

- Complete the 66 semester hours listed below with an overall GPA of at least 3.0. Complete all program courses with a grade of B or better.

- File for and be admitted to candidacy for the Ed.S. degree. Students entering with a bachelor's degree must apply for candidacy for the Ed.S. concentration in school psychology after completing 24 semester hours and prior to completing 30 semester hours. To receive a positive recommendation for candidacy from the faculty, such a student must: have a minimum overall graduate GPA of 3.0; have no grade below B and a GPA above 3.0 in EPSY 504, 514, 516, 536, 544, 545, and 630; and be judged professionally fit for the field by the faculty. Students who do not receive a positive recommendation for candidacy will be dismissed from the concentration but will have all rights of appeal afforded by the UTC Graduate School.
- Register for and complete a minimum of 18 semester hours during one calendar year. Any exception to this requirement must be approved by the primary program faculty.
- Pass the comprehensive examination. The Praxis Exam in School Psychology will serve as the comprehensive examination and a student will be considered to have passed the exam when he/she achieves a score at least as high as that required by the Tennessee Department of Education for licensure in school psychology.
- Consistently demonstrate professional fitness for the field (including legal and ethical behavior, appropriate judgment, and effectiveness in interpersonal relations).

It should be noted that students entering the concentration with a bachelor's degree and no graduate courses applicable to degree requirements may not be able to complete their programs within a three year period unless they begin taking courses during the fall semester, take at least 3 courses each fall and spring semester, and take some courses during the summer terms following initial enrollment.

Students entering the concentration with a master's degree or higher must:

- Complete a minimum of 36 semester hours in program-approved courses, including 12 semester hours of credit for internship (EPSY 650 and 655), with an overall graduate GPA of at least 3.0. Complete all program courses with a grade of B or better.
- File for and be admitted to candidacy for the Ed.S. degree. Students entering with a master's degree or higher must apply for candidacy for the Ed.S. concentration in school psychology after completing a minimum of 9 semester hours at UTC and prior to completing 18 semester hours. To receive a positive recommendation for candidacy from the faculty, such a student must: have a minimum overall GPA of 3.0 on concentration-approved courses taken at UTC and be judged professionally fit for the field by the faculty. Students who do not receive a positive recommendation for candidacy will be dismissed from the concentration but will have all rights of appeal afforded by the UTC Graduate School.

- Register for and complete a minimum of 18 semester hours during one calendar year. Any exceptions to this requirement must be approved in writing by the primary program faculty.
- Pass the comprehensive examination. The Praxis Exam in School Psychology will serve as the comprehensive examination and a student will be considered to have passed the exam when he/she achieves a score at least as high as that required by the Tennessee Department of Education for licensure in school psychology.
- Consistently demonstrate professional fitness for the field including legal and ethical behavior, appropriate judgment, and effectiveness in interpersonal relations).
- It should be noted that all students, regardless of background, will be required to show evidence of graduate courses equivalent to all of the courses required by the concentration. Hence, some students entering with a master's degree or higher may need to complete more than 36 semester hours to satisfy requirements for the concentration.

Course Scheduling

All program courses must be completed with a grade of B or better.

First Year

EPSY 614	Historical, Legal, and Ethical Foundations of School Psychology	3
EPSY 544	Theories and Techniques of Counseling	3
EPSY 516	Assessment Strategies for Individuals with Mild Disabilities	3
EPSY 536	Affective and Behavioral Assessment	3
EPSY 630	Individual Ability Testing	3
EPSY 504	Classroom Management Techniques	3
EPSY 545	Prepracticum in Counseling	3
EDSP 506	Program Design and Curriculum Strategies for the Exceptional Learner	3

Second Year

EPSY 635	Practicum in Assessment	3
EPSY 625	Consultation Methods	3
EPSY 501	Methods of Educational Research	3
EDUC 514	Teaching in Diverse Classrooms	3
EDS 613	Teaching and Learning	3
EPSY 640	Practicum In Intervention	3
EPSY 645	Psychological Foundations of School Psychology	3
EDS 610	Program Evaluation	3

Third Year

EPSY 650, 655	Internship*	6,6
EDS 605	Reflective Practice I	3
EDS 608	Technology in Education	3

Total 66

* Prior to or during the internship period, all students must take and pass a comprehensive examination. The Praxis Specialty Exam in School Psychology will serve as the comprehensive examination and a student will be considered to have passed the exam when he/she achieves a score at least as high as that required by the Tennessee Department of Education for licensure in school psychology.

Master of Business Administration, M.B.A.

Admission

A student who holds a bachelor's degree in any discipline from a regionally accredited college or university may be considered for admission to the M.B.A. program. Applications are accepted by the Graduate School at any time; however, in order to ensure adequate time for consideration, the completed application, Graduate Management Admissions (GMAT) test score, and any other supporting credentials should be received by the Graduate School no later than one month prior to the beginning of the term for which admission is desired.

Application Procedures

To be accepted into the M.B.A. program, a student must complete all of the following:

1. Have a bachelor's degree from a regionally accredited institution (any major is acceptable). Two official transcripts are required from each previously attended college. An application and a non-refundable application fee of \$25 should also be submitted to the Graduate School.
2. Be granted admission to UTC's Graduate School based on a minimum cumulative undergraduate GPA of 2.5, or a GPA of 3.0 in the senior year. Applicants who do not meet this admission requirement may be considered for conditional admission.
3. Have an official Graduate Management Admissions Test (GMAT) score. The GMAT is offered at Sylvan Learning Centers. The GMAT application brochure may be obtained from the Graduate Programs Office in the College of Business Administration or from the Graduate School.
4. Meet the minimum acceptable admissions index (AI) of 950. The admissions index is calculated as follows: $200 \times (\text{undergraduate GPA}) + \text{GMAT Score} = \text{AI}$. Effective January 1, 2006, all students will be required to score 450 or higher on GMAT to be accepted.

Core Courses (leveling courses for non-business majors)

The M.B.A. program requires that a student complete a minimum of 30 semester hours credit in graduate coursework. Students admitted to the program who lack academic experience in certain areas will be assigned up to 21 hours of additional coursework in the core courses listed below in order to gain needed competencies. Some or all of the core courses in which academic training has previously been completed may be waived. The requirements to waive a core class are:

1. A grade of "C" or better from an AACSB accredited business school, or
2. A grade of "B" or better from a non-AACSB accredited business school.

Core Courses

ECON 501	Concepts in Economics
BMGT 571	Business Statistics
BACC 572	Foundations of Accounting
BFIN 573	Foundations of Finance
	<i>Prerequisite: BACC 572 or equivalent</i>
BMKT 574	Foundations of Marketing Strategy
	<i>Prerequisite: ECON 501 or equivalent</i>

BMGT 575	Human Behavior and Organization
BMGT 576	Production and Operations Management
	<i>Prerequisite: BMGT 571 or equivalent</i>
	21 hours

All required core courses must be completed before more than two courses of application or elective courses are completed.

Application Courses

All M.B.A. students complete 21 semester hours of application courses:

BUSA 581	Small Business & Entrepreneurship
	<i>Prerequisites: BMGT 584 & BACC 585</i>
BFIN 582	Financial Cases and Applications
BMGT 583	Production and Operations Management Applications
BMGT 584	Management Applications
BACC 585	Accounting Applications
BMKT 586	Marketing Applications
BUSA 587	Business Simulation, <i>Prerequisites: BFIN 582, BMGT 583, BMGT 584, BACC 585, BMKT 586</i>
	21 hours

Elective Courses

All M.B.A. students complete nine hours of elective classes. An M.B.A. student may select electives in accounting, entrepreneurship, finance, health services management, human resource management, international management, information systems, marketing, operations/production management, or organizational management. The offering of electives is determined by student demand. Electives must be chosen in consultation with and approved by an M.B.A. adviser.

Transfer Credit

Six semester hours of courses completed at other universities for graduate credit may be considered to satisfy M.B.A. degree program requirements at UTC. A transferred course generally must form a logical part of the M.B.A. program to be approved.

Those who request transfer credit must be prepared to provide the university catalog in effect at the time at which the courses were completed as well as any other supporting information to the executive director of graduate programs in the College of Business Administration and the director of the Graduate School. Additional requirements regarding transfer credit may be found on page 24.

Admission to Candidacy

To be eligible for admission to candidacy, a student must have completed a minimum of 9 hours of application or elective courses.

An application for candidacy may be obtained on-line or in the Graduate School. Students should refer to page 11 for additional regulations regarding admission to candidacy. The application for candidacy must be approved by the executive director of graduate programs and the dean of the Graduate School prior to completion of more than 18 hours.

Revisions to the Program Effective Fall, 2006

Graduate Council has approved the following changes to the admission requirements and to the curriculum. All students who apply and are accepted for admission to the MBA program for fall 2006 must follow the new requirements.

Admission Requirements: No change, except require a minimum score of 450 on the GMAT.

Program Length: 36 minimum hours and maximum of 48 hours.

Background Courses: Decrease to 12 semester hours. ECON501, BMGT 571, BACC 572, BMGT 573 (new course).

Core (required) Courses: Increase to 18 semester hours. BMGT 581 (new course), BFIN 582, BMGT 583, BMGT 584, BACC 585, BMKT 586.

Required Capstone Courses: 6 semester hour. BUSA 587, BETR 588.

Electives: 12 Semester hours.

Computational Engineering, Ph.D.

Professor Tim Swafford, Coordinator

423/425-5487 or email @ Tim-Swafford@utc.edu

Entrance into the Computational Engineering program is available to qualified B.S. or M.S. graduates of recognized curricula in engineering, computer science, mathematics, or one of the natural sciences. Each student's program of study, including possible prerequisite requirements, is tailored to his or her background and research goals. Each applicant is advised about any prerequisite courses before entering the program.

Admission

In addition to regular graduate admission requirements, applicants must receive a positive recommendation by the Computational Engineering screening committee and submit the following documents:

- Computational Engineering Application Form
- a one-page statement of purpose
- three completed recommendation forms
- Graduate Record Examination (GRE) scores are required for international applicants. Successful applicants usually have a score of 700 or better on the quantitative exam. Other applicants are encouraged to submit GRE scores.
- current scores for the Test of English as a Foreign Language (TOEFL) for applicants from non-English-speaking countries who do not hold degrees from the United States. A minimum score of 550 (213 on the computer-based test) is required.

Course Requirements

Doctoral students must complete a minimum of 72 hours beyond the bachelor's degree, exclusive of credit for the master's thesis. These hours must include a minimum of 24 semester hours in doctoral research and dissertation and a minimum of 48 semester hours in other courses. The courses must include:

- A minimum of 24 semester hours of graduate coursework in engineering in courses numbered 500 and above, with at least 12 of these in computational engineering. A minimum of 6 semester hours of courses is required at the 600 level. These are

exclusive of thesis or dissertation credit. The student's supervisory committee can approve a student's petition to replace one 600-level course with one or more 500-level course(s) that are more appropriate.

- A minimum of 12 semester hours of coursework in mathematics or computer science in courses numbered 400 and above and taken for graduate credit exclusive of a first course in ordinary differential equations. No more than 6 hours can be earned in a 400 level course.
- There are multiple pathways toward accumulating the required coursework: a) all coursework may be performed at UTC, b) credit may be earned through coursework performed within the University of Tennessee system, c) credit is normally granted for up to 24 semester hours credited toward a master's degree at another university, and d) transfer credit may be granted for courses applicable to the program of study and accepted for graduate credit at another university.

Core Requirements

The program of study must adequately address the following core requirements, with appropriate course content in each of three primary areas that are essential to computational engineering: 1) an engineering application area, 2) scientific supercomputing, and 3) mathematics of computation, as determined by the student's supervisory committee and the Graduate Program Coordinator. Courses completed at the master's level can be included to satisfy the core requirements. Required courses in the program of study can vary, based on each student's background and goals. It is the responsibility of the student's supervisory committee, with the approval of the Graduate Program Coordinator, to ensure the student's adequate exposure to each area, which may involve completion of some undergraduate prerequisite courses.

The program of study must establish a primary applications focus, with additional coursework in both scientific supercomputing and mathematics of computation that logically relates to the applications focus. A Program of Study Form must be signed by the student, each committee member, and the Graduate Program Coordinator and then submitted to the UTC Graduate School for final approval. The student should file the Program of Study Form during the second semester of coursework and before completing 12 semester hours of coursework.

Typical Program of Study

Programs of study will depend on the student's academic background and undergraduate major, as well as on the intended area of research. For a student whose undergraduate major was engineering (the most common case), a typical curriculum for one program cycle past the baccalaureate degree might include the following courses:

Semester I

ENME 440 - Advanced Fluid Dynamics (3)
 MATH 565 - Numerical Analysis I (3)
 ENCM 510 - Computational Fluid Dynamics I (3)
 Graduate Seminar

Semester II

ENGR 534 - Transport Phenomena (4)
 MATH 566 - Numerical Analysis II (3)
 ENCM 610 - Computational Fluid Dynamics II (3)

Semester III

ENCM 634 - Viscous Flow Computation (3)
 MATH 567 - Numerical Solution of Partial
 Differential Equations I (3)
 ENCM 521 - Introduction to Parallel Algorithms (3)
 Graduate Seminar

Semester IV

ENGR 542 - Finite Element Analysis (4)
 MATH 412 - Linear Algebra and Matrix Theory (3)
 MATH 568 - Numerical Solution of Partial
 Differential Equations II (3)

Semester V

ENCM 516 - Grid Generation (3)
 MATH 470 - Introductory Complex Variables (3)
 ENCM 623 - Parallel Scientific Supercomputing (3)

Semester VI

ENCM 631 - Computational Design (3)

Major Advisor and Supervisory Committee

Students are encouraged to select a major advisor and form a committee during the second semester of coursework and before completing 12 semester hours of coursework. Each student's major advisor normally serves as the student's research or project director.

The supervisory committee is made up of four or five members of the Graduate Faculty, selected by the student in consultation with the major advisor. At least three committee members must be Computational Engineering faculty, including the major advisor, and at least one committee member must be external to Computational Engineering. The supervisory committee must be comprised of members who collectively have expertise in the core areas: 1) a computational engineering application area, 2) scientific supercomputing, and 3) mathematics of computation. Upon establishing a committee, each student should complete a Committee Approval Form, obtain signatures of committee members, and submit the form to the computational engineering records secretary.

Standards of Academic Performance

Continued Enrollment

Continued enrollment in the doctoral program is dependent upon satisfactory performance in the courses, in research, and progress toward completion of the degree. To achieve satisfactory performance, a student must maintain a "B" average on all undergraduate prerequisite courses, all graduate courses completed, and all graduate courses included in the student's program of study. Students must also maintain a grade of "satisfactory" in all dissertation research courses.

Students must conform to all general regulations of the UTC Graduate School. A student must maintain a 3.0 grade point average (GPA) on all courses taken for graduate credit. A grade less than C is included in the GPA but cannot be counted for credit toward the degree. In the event the student fails to meet this standard, one of the following actions will be taken.

Probation

A student will be placed on probation whenever the grade point average falls below a 3.0 on courses taken for graduate credit, or a grade of "unsatisfactory" on dissertation research.

Dismissal

Decisions regarding continuation will be made by the Dean of the Graduate School based on the recommendation of the faculty of the Graduate School of Computational Engineering. Graduate students will be placed on academic probation when their cumulative GPA falls below a 3.0. By the end of the next two terms of enrollment (counting the entire summer session as one term), students must raise their cumulative GPA to 3.0 or higher. Students will be academically dismissed if they fail to achieve this cumulative GPA within the two semester probation or if they fail to achieve a 3.0 or higher for either probationary semester. A student is automatically academically dismissed upon receiving a third grade of “C,” upon receiving more than one grade less than “C,” or upon receiving a second grade of “unsatisfactory” in dissertation research.

Dismissed students may appeal to the Graduate Council for readmission. Upon readmission, students may resume graduate study on probation with the same continuation standards.

Continuous Enrollment

Once admitted into the program, all active students are expected to remain enrolled until graduating. This requirement can be satisfied by enrolling in a one-credit-hour research and dissertation course (ENCM 699) each semester.

Residency Requirement

Students must be in residence at UTC for a period of at least two semesters during the period in which doctoral studies are performed. If the Program of Study includes coursework completed within the University of Tennessee System at UTK or UTSI, then residency on these campuses associated with this coursework will be counted toward this residency requirement.

Admission to Candidacy

A doctoral student is admitted to candidacy upon successful completion of all courses included in his or her program of study, acceptance of a research topic by his or her committee, successful completion of the preliminary examination, submission of the Candidacy form to the Graduate School of Computational Engineering by the student’s major advisor, and approval by the UTC Graduate School.

Candidacy Time Limits

Courses expire after eight years for credit toward the doctoral program of study (courses expire after six years for the master’s concentration). The degree must be completed within six years after completion of coursework.

Research Topic Approval

For the purposes of candidacy, a student can gain approval of his or her research topic in two ways: 1) by submitting a concise and focused (one- or two-page) abstract of the intended research topic to committee members; or 2) by submitting the full dissertation research proposal to committee members (see the section below on dissertation proposal). The major advisor should ensure that all committee members find the research acceptable.

Preliminary Examination

Students must pass a preliminary examination on coursework in the Program of Study covering each of the three primary areas

in the core requirements. The preliminary exam is given at the completion of all coursework and can be taken with up to six hours remaining, provided that adequate coursework covering each of the core areas has been completed. The preliminary exam is scheduled in consultation with the student’s major advisor and committee and must be completed no less than six months in advance of the anticipated date of graduation.

The preliminary examination has two parts: 1) a written part including questions by each committee member and 2) an oral examination of the student by the committee. The student receives the questions from the committee, submits the answers to the respective committee members, and then stands for an oral examination by the committee. The student’s major advisor will be responsible for scheduling the examination and reporting the results to the Graduate School of Computational Engineering and to the UTC Graduate School.

Research

Each candidate for the doctoral degree must conduct research and present a dissertation on that research that 1) demonstrates a mastery of the techniques of research and 2) makes a very distinct contribution to the field of computational engineering. Each candidate must present a proposal of the dissertation research for approval by the supervisory committee, and defend the research before the committee when the dissertation has been completed.

Dissertation Proposal

Each candidate must present to his or her committee a formal written proposal of the research to be included in the dissertation. The proposal should be concise, focused, and contain the following: 1) sufficient background information for the committee members, 2) a clear statement of the topic to be addressed by the research, 3) a review of pertinent work by others related to this topic, 4) the precise research questions and issues to be addressed by this research, and 5) justification for the research. Also, the candidate must attach a tentative outline of the final dissertation document. The proposal must be presented in the manner requested by the committee. Acceptance of the proposal and the dissertation outline by all members of the committee is the responsibility of the major advisor.

Dissertation

Upon completion of the research, the candidate submits a draft of his or her dissertation to each committee member one to two weeks prior to the scheduled final defense. The dissertation must be a contribution to knowledge and conform to the rules of the UTC Graduate School. Dissertations will be submitted to UMI Dissertations Services for its on-line and paper-based bibliographic reference collection.

Final Defense

In consultation with his or her major advisor, the candidate files a request for a final defense at least two weeks in advance of the intended date of the examination. The final defense will have two parts: (1) a public presentation of the dissertation followed by (2) a defense of the dissertation before the student’s committee members. At the discretion of the candidate’s committee, the dissertation defense may be closed to include only the student, committee, and a representative of the UTC Graduate School.

Computer Science, M.S.

UC Foundation Professor Joe Dumas, Graduate Coordinator of
Computer Science
(423) 425-4084 or email at Joe-Dumas@utc.edu

The Department of Computer Science offers a Master of Science degree with a major in computer science. This program is intended to prepare individuals for work in industry and government or further graduate study. Requirements for the M.S. degree include a minimum of 33 hours of credit earned in graduate course work including a thesis or 36 hours including a project.

Admission

Individuals may be admitted to the M.S. degree program if they meet the admission requirements of The Graduate School as stated in the Graduate Catalog.

This program is designed for students with the foundations provided by the baccalaureate degree in computer science. However, students with degrees in other disciplines may be admitted. Students whose academic training is considered inadequate in certain areas will be required to complete additional undergraduate and/or graduate foundation courses as determined by the department. These courses may, depending on the preparation of the student, include Computer Science 150, 160, 251, 261, 305, 306, 312, 351, and Mathematics 151/152, 161/162, 212, 303, and 307. Credit may be earned by special examination and awarded in accordance with the general regulations of The Graduate School.

Course Requirements

All students admitted to the M.S. program must complete a minimum of 24 hours of course work in computer science at UTC. This will include the core courses CPSC 510, 526, 532, 533, and 550 as well as at least three additional courses (9 hours) from Computer Science (see below). The program also includes 6 hours of thesis. An additional 3 hours of coursework related to the student's objectives may be selected from an area within or outside of computer science, in consultation with the major adviser and Graduate Coordinator. A minimum total of 33 hours of graduate credit, including the thesis, are required for the M.S. degree. Students may elect to undertake a project in lieu of a thesis. In this case, 6 additional hours of elective coursework, for a minimum total of 36 hours of graduate credit, are required. The courses used for these additional six hours are subject to the approval of the major adviser and the Graduate Coordinator of Computer Science. With either the thesis or project option, a minimum of 21 hours of credit must be from UTC computer science courses at the 500 level.

Students must maintain a minimum 3.0 grade point average and are subject to all general regulations of The Graduate School, such as those regulating admission to candidacy, transfer of credits, time limitations, thesis, and degree conferral -which may be found on pages 17-24.

General requirements for the degree are outlined as follows:

Computer Science Core Courses	15
CPSC 510, 526, 532, 533, 550	
Computer Science Electives	9
(chosen from the list below)	
Unrestricted Electives	3-9
Courses related to student's degree objectives may be selected from an area(s) other than computer science in consultation with the adviser and Graduate Coordinator.	
Research	6-3
CPSC 599r – Thesis (6)	
or CPSC 590 – Project (3)	
Total hours	33-36

Computer Science Elective Courses

CPSC 420	Computer Graphics, Applications and Algorithms	(3)
CPSC 430	Topics in Simulation	(3)
CPSC 435	Data Base Management Systems	(3)
CPSC 445	Automata, Complexity and Computability	(3)
CPSC 450	Software Engineering	(3)
CPSC 480	Introduction to Artificial Intelligence	(3)
CPSC 515	Advanced Data Base Systems	(3)
CPSC 520	Software Project Management	(3)
CPSC 530	Compiler Design	(3)
CPSC 535	Microcomputer Systems Architecture	(3)
CPSC 536	Computer Data Communications	(3)
CPSC 537	Internetworking	(3)
CPSC 538	Real-Time Embedded Systems	(3)
CPSC 540	Design of Distributed Systems	(3)
CPSC 541	Design of Web Interfaces	(3)
CPSC 542	Structured Data Exchange	(3)
CPSC 544	Computer Network Security	(3)
CPSC 546	User Interface Development	(3)
CPSC 548	Computer Forensics	(3)
CPSC 560	Advanced Computer Graphics	(3)
CPSC 570	Model Analysis and Simulation	(3)
CPSC 575	Programming with SAS	(3)
CPSC 580	Introduction to Machine Learning	(3)
CPSC 581	Advanced Topics in Artificial Intelligence	(3)
CPSC 591r	Special Topics	(1-3)
CPSC 592r	Graduate Internship in Computer Science	(1)
CPSC 597r	Individual Studies	(1-3)

The following list groups together those courses which deal with topics in the same area of computer science. It may be used when planning a program of study to orient the program in these directions.

Computer Hardware: 532, 533, 535, 538

Computer Networking and Security: 526, 536, 537, 544, 548

Programming Languages: 510, 530, 575

Computer Graphics: 420, 560

Simulation: 430, 570

Data Bases: 435, 515, 542

Theoretical Computer Science: 445, 510, 550

Software Production: 450, 520, 540, 541, 546

Artificial Intelligence: 480, 580, 581

Post-Baccalaureate Certificate Programs

The College of Engineering and Computer Science offers two post-baccalaureate certificate programs intended to provide skilled individuals with technical knowledge they can use to enhance their work in industry and government.

Certificate in Internet Application Programming

Admission Requirements

Knowledge of Operating Systems and Systems Programming is required as demonstrated by the satisfactory completion of CPSC 150, 160, 251, and 312 or their equivalents. Individuals will be admitted to the Certificate in Internet Application Programming program if either:

a. They have a bachelor's degree and significant related professional experience with Object Oriented Programming and are approved by the Computer Science Graduate Coordinator, **OR**

b. They meet the admission requirements of the Graduate School as stated in the *Graduate Catalog*, are admitted to the Computer Science M.S. program, and have satisfied all prerequisite courses assigned by the Computer Science Graduate Coordinator.

Course Requirements

CPSC 540	Design of Distributed System	(3)
CPSC 541	Design of Web Interfaces	(3)
CPSC 542	Structured Data Exchange	(3)
CPSC 595r	Design Project	(2)

Total hours 11

Certificate in Computer Networking

Admission Requirements

Knowledge of Operating Systems and Systems Programming is required as demonstrated by the satisfactory completion of CPSC 251 and 351 or their equivalents. Individuals will be admitted to the Certificate in Computer Networking program if either:

a. They have a bachelor's degree and significant related professional experience and are approved by the Computer Science Graduate Coordinator, **OR**

b. They meet the admission requirements of the Graduate School as stated in the *Graduate Catalog*, are admitted to the Computer Science M.S. program, and have satisfied all prerequisite courses assigned by the Computer Science Graduate Coordinator.

Course Requirements

CPSC 526	Client-Server Systems	(3)
CPSC 536	Computer Data Communications	(3)
CPSC 537	Internetworking	(3)
CPSC 595r	Design Project	(2)

Total hours 11

Counseling, M.Ed. Community Concentration

Professor Tony Lease, *Coordinator*

(423) 425-4171 or email at Tony-Lease@utc.edu

The concentration in community counseling is designed to prepare beginning level counselors to work in a variety of human service agencies. The 48-credit hour program is a basis for preparation for the 60 credit hours required for Licensed Professional counselor (LPC) in the State of Tennessee.

Admission

Application to the Counseling Program is made either in the Fall or the Spring. For candidates wishing to begin classes in January, a completed application is due to the Graduate School office no later than October 15. For candidates wishing to begin classes in either May or August, a completed application is due no later than March 15. In addition to regular graduate admission requirements, candidates must meet the following requirements:

1. Submit a score on the Graduate Record Exam (GRE) or the Miller Analogies Test (MAT) within the last five years.
2. Provide three professional and/or academic recommendations pertaining to the candidate's potential as a counselor.
3. Submit a resumé reflecting professional experience and volunteer work related to the helping profession.
4. Submit a two page typewritten biographical sketch indicating the motivation to become a counselor.
5. The applicant must attend an admission workshop that includes a group interview with faculty and must successfully pass a writing proficiency exam. After the interview and the writing exam, candidates will be notified in writing as to their admission to the program. No oral confirmations of admission status will be provided.

Prerequisites

Community counseling candidates may be asked to show competencies in Introduction to Psychology and Abnormal Psychology (depending on discretion of program faculty and previous degree(s) earned) either through course work or professional experience. In these cases, the burden of proof is on the student to document either through transcripts or supervisors' letter(s) that such competencies have been met.

Review of Students

During their course of studies, all counseling students are reviewed continuously by program faculty for purposes other than academic. This review results in either one of three recommendations: continuation, continuation with conditions, or termination. Students are referred to the Counseling Student Handbook for explanation of professional fitness necessary for continuation in the program. All students are expected to abide by the American Counseling Association (ACA) Code of Ethics. All courses are competency based, and courses receiving a grade lower than B must be repeated.

Core Course Requirements

EDUC 501	Methods of Educational Research-Quantitative	3
EPSY 510	Ethics and Professional Issues in Counseling	3
EPSY 542	Introduction to Community Counseling	3
EPSY 543	Theories of Human Development	3

EPSY 544	Theories and Techniques of Counseling	3
EPSY 545	Pre-Practicum in Counseling	3
EPSY 547	Group Facilitation	3
EPSY 548	Counseling Appraisal Instruments	3
EPSY 549	Career Development and Counseling	3
EPSY 555	Counseling Practicum	3
EPSY 559	Internship in Community Counseling	6
ESPY 575	Descriptive Disorders in Psychopathology	3
ESPY 576	Theory and Practice in Multicultural Counseling	3

Elective Courses

(6 hours from the following)

EPSY 537	Gender Issues in Counseling	3
EPSY 539	Introduction to School Counseling	3
EPSY 550	Perspectives of Human Sexuality for Counselors	
EPSY 551	Crisis Counseling and Suicidology	3
EPSY 552	Substance Abuse Counseling	3
EPSY 553	Couples, Marriage and Families	3
EPSY 554	Counseling Children and Adolescents	3
EPSY 577	Foundations of Gerontological Counseling	3
Total hours		48

Counseling, M.Ed. School Counseling Concentration

Professor Tony Lease, Coordinator School Concentration
423/425-4171 or email at Tony-Lease@utc.edu

The concentration in school counseling is designed to prepare beginning counselors to work within a school environment. Successful completion of the program results in Pre-K through 12 certification as a school counselor.

Admission

Application to the Counseling Program is made either in the Fall or the Spring. For candidates wishing to begin classes in January, a completed applications is due to the Graduate School office no later than October 15. For candidates wishing to begin classes in either in May or August, a completed application is due no later than March 15. In addition to regular graduate admission requirements, candidates must meet the following requirements:

1. Submit a score on the Graduate Record Exam (GRE), or the Miller Analogies Test (MAT) within the last five years.
2. Provide three professional and/or academic recommendations pertaining to the candidate's potential as a counselor.
3. Submit a resumé reflecting professional experience and volunteer work related to the helping profession.
4. Submit two page typewritten biographical sketch indicating the motivation to become a counselor.
5. The applicant must attend an admission workshop which includes a group interview with faculty and must successfully pass a writing proficiency test. After the interview and the writing test, candidates are notified in writing as to their acceptance into the program.

Admission to Candidacy

In addition to the University requirements for admissions to candidacy, if the student is NOT a licensed teacher, then the student must provide evidence of a supervised orientation experience in a school that will include observation, participation in and anal-

ysis of classroom instruction. The orientation experience must be at least 100 clock hours in length. In addition, the student must have had a course in the introduction to exceptional learners.

Review of Students

During their course of studies, all counseling students are reviewed continuously by program faculty for purposes other than academic. This review results in either one of three recommendations: continuation, continuation with conditions, or termination. Students are referred to the Counseling Student Handbook for an explanation of professional fitness necessary for continuation in the program. All students are expected to abide by the American Counseling Association (ACA) Code of Ethics. All courses are competency based, and courses receiving a grade lower than B must be repeated.

Course Requirements

The minimum total credit requirement is 48 semester hours. Successful completion of the outlined program and appropriate scores on two tests of the Praxis II/NTE (Communication Skills subtest of the Core Battery and School Guidance and Counseling Specialty Area Test) fulfill requirements for Tennessee licensure as school counselor in grades pre-kindergarden through twelve.

Leveling Courses (required for all non-teachers)

EPSY 400	Survey of Exceptional Learners	3
EDUC 485	Orientation to Schools for Counselors	3

Core Course Requirements

EPSY 501	Methods of Educational Research-Quantitative	3
EPSY 510	Ethics and Professional Classes in Counseling	3
EDUC 512	Learning and Education	3
EPSY 539	Introduction to School Counseling	3
EPSY 543	Theories of Human Development	3
EPSY 544	Theories and Techniques of Counseling	3
EPSY 545	Prepracticum in Counseling	3
EPSY 547	Group Facilitation	3
EPSY 548	Counseling Appraisal Instruments	3
EPSY 549	Career Development and Counseling	3
EPSY 555	Counseling Practicum	3
EPSY 570	Internship Elementary School Counseling	3
EPSY 571	Internship Secondary School Counseling	3
EPSY 576	Theory and Practice in Multicultural Counseling	3

Elective Courses

(select 3 hours from the following)

EPSY 553	Couple, Marriage and Family Counseling	3
EPSY 548	Families of Children with Special Needs	3
HECO 445	Families: Partnership, Home, School & Community	3

(select 3 hours from the following)

EPSY 550	Persectives on Human Sexuality for Counselors	3
ESPY 551	Crisis Counseling and Suicidology	3
EPSY 554	Counseling Children and Adolescents	3
EPSY 575	Descriptive Disorders in Psychotherapy	3
EPSY 537	Gender Issues in Counseling	3
EPSY 542	Introduction to Community Counseling	3

Total hours 48

Criminal Justice, MSCJ

Professor Helen Eigenberg, *Head*

Professor Vic Bumphus, *Coordinator*

The Master of Science in Criminal Justice is a professional degree which prepares graduates for leadership in management positions in criminal justice and social service agencies, or entry into doctoral study. The program places emphasis on the development of skills in critical thinking, communication, and applied research. Selecting from a variety of speciality courses, students devise an area of specialization based upon education career interests. Students from any undergraduate major are welcome to apply.

The M.S. program consists of 36 semester hours—21 semester hours of generic core, 3 hours of internship, a minimum of 6 semester hours of electives, 6 hours of thesis or 6 additional hours of approved electives, and the comprehensive essay exam. Students electing to take the thesis option are exempt from the comprehensive exam.

Admission

In addition to meeting requirements for admission to the Graduate Division, an applicant must submit an official score report for the MAT or GRE. Applicants also must submit a supplemental data form, a brief essay to demonstrate writing proficiency, and two letters of recommendation. The graduate program is designed for those students who have a serious interest in criminal justice. Upper level foundation courses may be required for students who lack adequate preparation in criminal justice.

Comprehensive Examination

To be eligible to take the comprehensive examination, students must meet three conditions:

1. Have the appropriate grade point average of 3.0
2. Have completed all required course work or are completing all required course work during the semester in which the exam will be taken.
3. Have a candidacy form on file with The Graduate School.

Students who do not successfully pass the comprehensive examination will be allowed to retake the exam the following semester upon approval of the graduate coordinator. Students must petition to be allowed to retake the examination on a third attempt.

Thesis

Requirements for thesis are stated on page 23.

Outline of Criminal Justice Master's Program

Generic Core:	Hours	12
Criminal Justice 500 Research and Methodology I	3	
Criminal Justice 502 Research and Methodology II	3	
Criminal Justice 503 Criminal Justice Proseminar	3	
Criminal Justice 516 Theoretical Perspectives of Crime	3	
Electives:	Hours	18
Criminal Justice 501 Social Control/Prevention	3	
Criminal Justice 505 Social Adm. within the CJ System	3	
Criminal Justice 506 Police and Society	3	
Criminal Justice 510 Special Topics in Criminal Justice	3	
Criminal Justice 512 Juvenile Delinquency and Justice System	3	
Criminal Justice 513 Cross Cultural Diversity Crime	3	

Criminal Justice 520 Crime Analysis	3
Criminal Justice 521 Comparative Criminal Justice	3
Criminal Justice 525 American Justice System	3
Criminal Justice 526 Ethics and Crime	3
Criminal Justice 527 Organizational Crime	3
Criminal Justice 532 Victimology	3
Criminal Justice 534 Crime and Popular Culture	3
Criminal Justice 537 Drugs and Crime	3
Criminal Justice 540 Public Policy in Criminal Justice	3
Criminal Justice 542 Terrorism and the Criminal Justice System	3
Criminal Justice 543 Correctional Theory	3
Criminal Justice 550 Crime Prevention	3
Criminal Justice 560 Internship	3
Criminal Justice 596 Thesis Seminar	3
Criminal Justice 597 Individual Studies	3

Thesis/Internship + Elective	Hours	6
Criminal Justice 599r Thesis or Criminal Justice 560 + elective		6

Total: 36

* Student opting not to take the thesis option are required to take the comprehensive examination.

Master of Education, M.Ed.

It should be noted that successful completion of an approved education program leads to Tennessee licensure only when the applicant meets all current requirements for initial licensure or for the additional endorsement being sought.

Admission to Candidacy

The application for admission to candidacy should be made after the student has completed nine semester hours of approved graduate courses, excluding transfer credit and any specified prerequisites. *This application must be filed before completion of more than 18 hours.* Please refer to page 11 for additional regulations regarding admission to candidacy.

Comprehensive Examinations

The examination is normally taken in the semester in which the candidate is completing course requirements. An application must be submitted to and approved by the dean of graduate studies at least one month prior to the date of the comprehensive exam.

Thesis

The Master of Education degree requires a final project (Education 598r) as a component of several of the degree concentrations. A student may choose to meet this requirement by exercising the Thesis Option (Education 599r-6 hrs). The project must be approved by the student's adviser and a formal prospectus submitted to the graduate committee for approval prior to writing the paper. The specific requirements on format, registration, and scheduling are available from the office of the dean of Graduate School in Race Hall or in the Education Graduate Studies Division office.

Additional information regarding thesis requirements may be found on page 23.

Elementary Education, M.Ed.

Professor Tony Lease, Coordinator

(423) 755-4171 or email at Tony-Lease@utc.edu

The program in elementary education has both a licensure and non-licensure track. The non-licensure track is designed for licensed teachers who wish to deepen their insight, gain additional knowledge, and improve their professional competencies; the licensure track leads to initial teacher licensure. The program and the department are accredited by the Southern Association of Colleges and Schools (SACS), the National Council for the Accreditation of Teacher Education (NCATE), and the Tennessee State Department of Education.

Admission

Candidates must satisfy all university requirements for admission to the UTC Graduate School and must submit appropriate minimum scores on the Praxis I Academic Skills Assessment (2000-2001 required scores: PPST Mathematics 173, PPST Reading 174, PPST Writing 173; CBT Mathematics 318, CBT Reading 321, CBT Writing 319). Information about this test may be obtained from the Certification Office, the UTC Testing Center, or the Graduate School office. In addition, the candidate's overall record is evaluated in terms of his or her potential academic and professional ability to participate in this graduate degree program.

Course Requirements for the Non-Licensure Track

(for licensed teachers)

36 semester credit hours including 12 hours of professional core, 12 additional hours of professional education, and 12 hours of concentration coursework.

Professional Core Coursework (12)

EDUC 500	Introduction to Inquiry	3
EDUC 501	Quantitative Research	3
OR		
EDUC 504	Qualitative Research	3
EDUC 508	Collaboration & Consultation	3
EDUC 598	Culminating Experience	3

Additional Professional Education Coursework (12)

Four of:

EDUC 510	Ethics and the Teacher	3
EDUC 512	Learning and Education	3
EDUC 513	Perspectives on Multiculturalism and Diversity	3
EDUC 515	Assessment and Learning	3
EDUC 516	Introduction to Curriculum	3
EDUC 517	Strategies for Inclusion	3
EDAS 563	School Law	3
EDUC 575	Educational Technology	3
EDAS 551	Foundations of Educational Leadership	3
EDAS 566	Supervision of Instructional Process	3

Concentration Coursework (12)

Concentrations: Early Childhood Education, Educational Technology, Elementary Education, Inclusion, Reading Specialist,

Research/Thesis; Urban Specialist. Courses are selected in consultation with the advisor to fit individual programs and degree objectives.

Note: A comprehensive examination is required. Three options are available: an oral examination, a written examination, or, (with a minimum 3.5 grade point average) Education 598 utilized in lieu of an examination.

Total hours 36

Course Requirements for the Licensure Track

(for those seeking initial teacher licensure)

36 semester credit hours of graduate coursework is required including 24 hours of professional education, 9 hours of enhanced student teaching (Induction Experience), and 3 hours of Culminating Activity. In addition, students must complete the bridging content coursework identified by the program advisor; an applicant should consult the Certification Officer to initiate this process.

EDUC 500	Introduction to Inquiry	3
EDUC 508	Collaboration & Consultation	3
EDUC 514	Teaching in Diverse Classrooms	3
EDUC 520	Social and Historical Foundations of Education	3
EDUC 521	Human Development Applied to Education	3
EDUC 522	Instructional Planning and Evaluation	3
EDUC 560	Literary Acquisition & Reading Development	3
EDUC 575	Educational Technology	3
*EDUC 596	Induction Experience (student teaching)	9
EDUC 590	Culminating Experience	3

Note: A comprehensive examination is not required. To complete the program, candidates for licensure must achieve appropriate minimum scores on state-required Praxis II tests.

** May substitute 6 credit hours of EDUC 591 plus a 3 credit hour elective.*

Total hours 36

Additional Requirements

Admission to Teacher Education Program
Admission to Induction Experience
Completion of Leveling (Content) Coursework
Appropriate minimum scores on specified Praxis II tests

Alternative to Student Teaching

Tennessee regulations allow an institution to waive student teaching if the candidate for licensure teaches successfully for two years under an Interim A license or three years under a permit in an accredited school. The teaching assignment must be in the field and at the level appropriate for the licensure sought.

For students who are employed as teacher-of-record while pursuing the master's degree, the nine-hour Induction Experience is replaced by two courses: one 3-hour elective and EDUC 591, a 6-hour one semester course entitled "Professional Teaching Experience." This course involves evaluation of the candidate's teaching skills by a UTC faculty member who observes lessons and consults with the candidate. Reflective papers are required as well as seminars and other appropriate activities.

Candidates for Teaching Licensure

Admission to Teacher Education Program (TEP)

Students pursuing teacher licensure through UTC's teacher preparation program must meet requirements in four sequential checkpoints which control admission to the Teacher Education Program, admission to the induction experience (student teaching), and recommendation for licensure. Included in the checkpoint requirements are successful completion of specified coursework, achievement of appropriate grade point averages, and appropriate test scores on Praxis I as well as on the state-mandated Praxis II tests for the licensure area. In addition, specified paperwork must be submitted in each checkpoint. Success in meeting checkpoint requirements leads to success in completing the teacher preparation program.

Applicants who demonstrate evidence of possessing qualifications and characteristics reasonably expected for entry into the teaching profession will be considered for admission to the teacher education program.

For entry to the TEP, the candidate must meet all current admission standards set by UTC, the State Department of Education, and the College of Education and Applied Professional Studies. A student who has earned a degree or earned credit hours at another institution may be required to enroll in additional courses including the student teaching experience. This is to verify competency in those teaching fields for which initial teacher licensure or endorsement is being requested through a UTC recommendation. Additionally, any student seeking admission to the TEP should confer with a faculty adviser from the College of Education and Applied Professional Studies to ensure that the appropriate coursework and admission requirements have been completed.

To be considered for admission to the TEP*, a graduate student must:

1. File a formal application signed by a College of Education and Applied Professional Studies faculty adviser.
2. Earn a minimum 2.5 cumulative grade point average on all courses, a 2.5 in content (bridging) area courses with no grade lower than C, and a 3.0 in graduate education courses.
3. Submit appropriate minimum scores on the PRAXIS I Academic Skills Assessments.
4. File all other appropriate information (essay and resume) and submit an application for an interview.
5. Complete the interview and receive a positive recommendation from the TEP interview committee.
6. Show evidence of reasonable physical fitness, emotional maturity, high moral character, and commitment to professional education. Violations of the honor code or student behavior policies as stated in the *UTC Student Handbook* may be reviewed by the TEP Committee and may impact the final decision regarding admission to the TEP and/or approval for student teaching experiences.

* The final responsibility for satisfying all requirements for official entry in the TEP rests with the student.

Admission to the Induction Experience or Student Teaching

The application for admission to the induction experience/student teaching must be filed approximately six months preceding the actual experience. If a student plans to complete the induction experience/student teaching during the spring semester of an academic year, the application must be completed and on file no later than September 1 of the preceding year. For the fall semester of an academic year, the application must be completed

and on file no later than the preceding March 1. Under special circumstances, policies, procedures, and requirements for admission to the TEP and the induction experience/student teaching may be waived or revised at the discretion of the dean of the College of Education and Applied Professional Studies after consultation with the head of the academic unit in which the student is seeking a degree and/or endorsement.

Application for the induction experience/student teaching is not contingent upon official admission to the TEP; therefore, a student should file the application to comply with the required deadline dates. However, a student will not be permitted to begin the the induction experience/student teaching until he or she has been admitted to the TEP.

Before gaining official approval for admission to the induction experience/student teaching semester, the student must have fulfilled the following requirements:

1. Gained official admission to the TEP .
2. Completed the induction experience/student teaching application with signature of assigned faculty advisor.
3. Satisfactorily completed all professional education coursework and at least 90 percent of endorsement area coursework.
4. Earned a minimum 2.5 cumulative grade point average on all courses, a 2.5 in content (bridging) courses with no grade lower than C, and a 3.0 in graduate education courses.

Final responsibility for ensuring that all these requirements are fulfilled prior to being admitted to the induction experience/student teaching rests with the student.

Induction Experience/Student Teaching

All education majors will complete an induction experience/student teaching for a full semester of 16 weeks. Placements will include an inner-city and a suburban/rural school environment during the semester. In addition to dual locations, the student will be expected to teach on two distinct grade levels. For example, secondary placements will include a middle school for one-half semester and a high school for the other half.

Students will be grouped in cohorts during the induction experience/student teaching, allowing them to participate in on-site seminars on educational psychology, methods, classroom management, and other topics.

A student is prohibited from enrolling in any other course while completing the induction experience/student teaching unless said course is the final course required in his/her program.

The induction experience/student teaching is evaluated on a satisfactory/ no credit basis. Successful completion of the induction experience/student teaching requires meeting all the requirements of the field placements plus passing scores on all state-mandated Praxis II tests for the licensure area. A student who does not successfully complete the experience will receive no credit and may have the opportunity to repeat the course.

Induction Experience/Student Teaching Orientation

General orientation seminars concerning the induction experience/student teaching and the professional education semester are held for all prospective student teachers during the semester immediately preceding the experience. Candidates are expected to attend these scheduled conferences; non-attendance could delay the induction experience/student teaching semester.

Alternative to Student Teaching

The student teaching or its equivalent is required in any initial licensure program. In the M.Ed. Elementary or Secondary Education: Licensure programs, that requirement is met through the nine-hour Education 596, Induction Experience. Teachers employed appropriately may choose the option of the six-hour Education 591, Professional Teaching Experience; this option requires an additional three-hour education elective to complete M.Ed. requirements.

Recommendation for Licensure

The School of Educational Leadership will recommend licensure for only those students who have successfully completed one or more of the UTC initial licensure or additional endorsement programs approved by the Tennessee Department of Education.

Tennessee state regulations stipulate that the applicant for licensure must be recommended by the designated certifying officer and dean of an approved teacher training institution. To receive this recommendation, the applicant must have fulfilled the following requirements:*

1. Satisfactorily complete the approved teacher preparation program, including student teaching, for the desired area of endorsement.
2. Earn a minimum 2.5 cumulative grade point average on all courses, a 2.5 in content (bridging) courses with no grade lower than C, and a 3.0 in graduate education courses.
3. Achieve appropriate minimum scores on the Praxis II Principles of Learning and Teaching and Subject Assessments/Specialty Area Test.
4. Demonstrate good moral character and freedom from chemical addiction which would impair effectiveness as a teacher.

These criteria apply to undergraduate, post-baccalaureate, and graduate students desiring a licensure recommendation from UTC.

**Under special circumstances, the criteria may be modified or revised at the discretion of the dean of the College of Education and Applied Professional Studies after consultation with appropriate academic administration.*

The final responsibility for satisfying each and all of these requirements for licensure recommendation by UTC rests with the individual applicant.

A student is considered to have completed UTC's teacher preparation program when he or she has fulfilled all coursework requirements, been awarded the degree appropriate to the program, and met Tennessee standards for the Praxis II tests for his licensure area.

A candidate who anticipates teaching outside Tennessee is strongly encouraged to request information about licensure requirements from the Department of Education Office of Teacher Licensing for the state in which he or she plans to teach. Course and competency requirements to satisfy out-of-state licensure standards may be in addition to Tennessee licensure requirements and UTC approved degree requirements.

Graduation from a UTC master's degree program alone does not guarantee licensure. All requirements of the particular state awarding the license must be fulfilled also.

Application for Teacher Licensure

UTC does not guarantee that satisfactory completion of a program listed in the UTC *Catalog* upon a student's initial ad-

mission to the University will meet all the licensure requirements at the time the person completes his program. This means that UTC will recommend only those applicants who have met all the requirements effective at the time of recommendation.

In view of this, a student or any other person seeking teacher licensure or endorsement recommendation from UTC is strongly encouraged to confer with the appropriate faculty advisor(s) within the College of Education and Applied Professional Studies as soon as possible to gain faculty assistance in planning course schedules and to learn of the requirements effective at that time or at the projected date of the applicant's program completion.

Applications for licensure in Tennessee and Georgia are available in the UTC Records Office. Applications for licensure in other states should be requested from the respective State Departments of Education.

Questions about any of the above-mentioned requirements should be referred to the appropriate department head and to the certification officer.

Certification Office

The Certification Office is primarily responsible for processing applications for initial Tennessee licensure. The Certification Office will also provide assistance in processing applications to states other than Tennessee. However, the applicant has the responsibility for obtaining the application and completing it, except for signatory approval of UTC.

Title II of the Higher Education Act of 1998 requires teacher preparation institutions to report Praxis II test scores and other data. The federal report for 2002-2003 was issued in October 2004 and is available at <http://www.title2.org>. UTC's aggregate pass rates was 95 percent.

Course Requirements for the Alternative to Student Teaching Track:

EDUC 500	Introduction to Inquiry	3
EDUC 508	Collaboration & Consultation	3
EDUC 514	Teaching in Diverse Classrooms	3
EDUC 520	Social & Historical Foundations of Education	3
EDUC 521	Human Development Applied to Education	3
EDUC 522	Instructional Planning & Evaluation	3
EDUC 560	Literacy Acquisition & Reading Development	3
EDUC 575	Educational Technology	3
EDUC 591	Professional Teaching Experience	6
EDUC 590	Culminating Experience	3
Elective		<u>3</u>

Total Elective Hours: 36

Certificate in Urban Specialist

Admission Requirements must be met at two levels:

A. Admission to The Graduate School:

1. Hold a baccalaureate degree from a regionally accredited institution.
2. Have a minimum 2.5 undergraduate grade point average.
3. \$25 application fee.

B. Admission to the Certificate Program:

4. Urban Specialist Supplemental Application
 - 3 letters of reference (one by current principal)
 - Interview with UTC faculty and Hamilton County School Personnel.

Course Requirements - cohorts begin each summer

- Summer - EDUC 515 Assessment and Learning
- Fall - EDUC 560 Literacy Acquisition & Reading Development
- Spring - EDSP 517 Strategies for Inclusion
- Summer - EDUC 508 Collaboration & Consultation (focus on change)
- Fall - EDUC 598 Independent Research
- Spring - EDUC 503 Urban Parents and Community Resources

Engineering, M.S.

Edwin Foster, Ph.D., P.E., *Coordinator of Engineering Graduate Programs*, (423) 425-4311 or email at Edwin-Foster@utc.edu

A Master of Science degree in engineering is offered with concentrations in chemical, civil, computational, electrical, industrial, and mechanical engineering. The mechanical engineering concentration has an energy option and a mechanics option. An environmental option is available under chemical engineering if additional course work is taken.

Admission

An applicant for admission to the graduate program in engineering must meet requirements for admission to The Graduate School. These requirements may be found on page 7.

Requirements for the M.S. Degree

The requirements for the M.S. degree in engineering are listed below. Each student's program will be developed by the student's committee as an individualized program and will be constructed in accordance with sound academic practices to provide the kind of study most suitable to the student's needs. The proposed program must be submitted on a candidacy form to The Graduate School office for approval after completion of nine graduate hours and before completion of 18 graduate hours. It is that program, rather than the examples which follow, which will constitute the student's graduation requirements.

The general guidelines for the M.S. degree in engineering are as follows:

	Semester Hours
Area I Mathematics or Engineering Analysis	3-6
Area II Approved Electives in Mathematics, Science, or Engineering (400 or 500 level)	6-9
Area III Engineering Concentration	12-16
Area IV Thesis or Special Project and/or Internship	6
Total	32-34

The examples which follow are representative of planned programs for each concentration.

Chemical Engineering Concentration

Option: Chemical Sciences

Mathematics Component:	6
Mathematics 515 Applied Mathematics for Science and Engineering I	(3)
One course selected from:	
Mathematics 516 Applied Mathematics for Science and Engineering II	(3)
Mathematics 518 Advanced Numerical Methods	(3)
Electives selected from:	6
ENCH 430 Chemical System Design	(3)
ENCH 432 Chemical Operations I	(3)
ENCH 433 Chemical Operations II	(3)
ENCH 434 Chemical Kinetics and Reactor Design	(3)
ENME 443 Thermal Component Design	(3)
ENME 440 Advanced Fluid Dynamics	(4)
Chemistry 443 Instrumental Analysis	(4)
Engineering 558 Advanced Engineering Economy	(3)
Chemistry 475 Polymer Chemistry	(2)
Specialty:	16
Engineering 532 Advanced Thermodynamics	(4)
Engineering 534 Transport Phenomena	(4)
Engineering 536 Mass Transfer Operations	(4)
one course selected from:	
Engineering 526 Water and Wastewater Treatment Systems	(4)
Engineering 528 Air Pollution Control Systems	(4)
Engineering 578 Microprocessor Applications	(4)
Research:*	6
Engineering 599r Thesis	(2-4)

Total 34

*With approval of the Engineering Graduate Committee, students who do full-time engineering work in industrial or governmental organizations may substitute six hours of approved 500-level courses plus Engineering 590 Engineering Project (3) for Engineering 599r Thesis (6).

Chemical Engineering Concentration

Option: Environmental

Mathematics Component:	6
Mathematics 515 Applied Mathematics for Science and Engineering I	(3)
One course selected from:	
Mathematics 516 Applied Mathematics for Science and Engineering II	(3)
Mathematics 518 Advanced Numerical Methods	(3)
Electives selected from:	6
ENCH 433 Chemical Operations	(3)
ENCH 434 Chemical Kinetics and Reactor Design	(3)
Engineering 558 Advanced Engineering Economy	(3)
Biology 416 Biogeography	(3)
Chemistry 443 Instrumental Analysis	(4)
Environmental Studies 410—Environmental Laws and Agencies	(3)
Environmental Studies 430—Problems in Environmental Management	(3)
Specialty:	16
Engineering 526 Water and Wastewater Treatment Systems	(4)
Engineering 528 Air Pollution Control Systems	(4)
Engineering 532 Advanced Thermodynamics	(4)
Engineering 534 Transport Phenomena	(4)
Engineering 536 Mass Transfer Operations	(4)

Research:	6
Engineering 599r* Thesis	(2-4)

Total hours 34

*With approval of the Engineering Graduate Committee, students who do full-time engineering work in industrial or governmental organizations may substitute six hours of approved 500-level courses plus Engineering 590 Engineering Project (3) for Engineering 599r Thesis (6).

Civil Engineering Concentration

Mathematics Component:	6
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Mathematics 515	Applied Mathematics for Science and Engineering I	(3)
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Mathematics 518	Advanced Numerical Methods	(3)
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Electives selected from:	6
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ENME 445	Mechanical Vibrations	(3)
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ENME 446	Advanced Mechanics of Materials	(3)
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ENME 440	Advanced Fluid Dynamics	(4)
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Specialty:	15
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Engineering 542	Finite Element Analysis & Design	(4)
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Engineering 558	Advanced Engineering Economy	(3)
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Engineering 560	Statically Indeterminate Structures	(4)
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Engineering 564	Advanced Structural Analysis & Design	(4)
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Research:	6
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Engineering 599r* Thesis	(2-4)
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Total hours 33

*With approval of the Engineering Graduate Committee, students who do full-time engineering work in industrial or governmental organizations may substitute six hours of approved 500-level courses plus Engineering 590 Engineering Project (3) for Engineering 599r Thesis (6).

Computational Engineering Concentration

Mathematics Component:	
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Mathematics 518	Advanced Numerical Methods	(3)
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Mathematics 565	Numerical Partial Differential Equations I	(3)
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Electives selected from:	
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at least 6 hours from:

ENME 440	Advanced Fluid Dynamics	(3)
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ENME 443	Thermal Component Design	(3)
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ENGR 538	Heat Conduction and Radiation	(4)
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MATH 412	Linear Algebra and Matrix Theory	(3)
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MATH 470	Introductory Complex Variables	(3)
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MATH 566	Numerical Partial Differential Equations II	(3)
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CPSC 420	Computer Graphics Applications and Algorithms	(3)
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CPSC 450	Software Engineering II	(3)
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CPSC 546	User Interface Development	(3)
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ENCM 501	Introduction to Computational Fluid Dynamics	(3)
	(requires approval of graduate committee)	

Specialty	
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ENGR 534	Transport Phenomena	(4)
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ENCM 510	Computational Fluid Dynamics I	(3)
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ENCM 634	Viscous Flow Computation	(3)
	(Prerequisite: ENGR 534)	

ENGR 542	Finite Element Analysis	(4)
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Research	
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Engineering 599r* Thesis	(2-4)
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Total hours 32-33

*With approval of the Engineering Graduate Committee students may substitute six hours of approved 500-level courses plus ENGR 590—Engineering Project (3) for Thesis (6).

Electrical Engineering Concentration

EGEE 500	Seminar	(2)
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Mathematics 502	Transform Methods	(3)
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Core Courses	9
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EGEE 501	Stochastic Processes	(3)
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EGEE 502	Linear Systems	(3)
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EGEE 503	Digital Signal Processing	(3)
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Specialty Courses (often alternate year by year)	12
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Communication Systems	
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EGEE 510	Field Theory II	(3)
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EGEE 511	Communication II	(3)
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EGEE 512	Fiber Optics	(3)
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EGEE 513	VLSI and Optronics	(3)
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EGEE 514	Integrated Communication Systems	(3)
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EGEE 570	Microcomputer Applications	(3)
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Control Systems	
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EGEE 530	Optimal Control	(3)
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EGEE 531	Estimation and Identification	(3)
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EGEE 532	Neural Networks & Intelligent Control	(3)
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EGEE 533	Non-Linear Control	(3)
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EGEE 534	Microprocessor Applications to Control	(3)
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EGEE 570	Microcomputer Applications	(3)
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Power Systems	
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EGEE 561	Power Electronics	(3)
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EGEE 551	Power System Reliability	(3)
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EGEE 552	Power System Operations	(3)
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EGEE 554	Electrical Machines II	(3)
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EGEE 562	Power System Protection	(3)
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EGEE 570	Microcomputer Applications	(3)
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Thesis and Special Topics	9
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EGEE 598-599	Thesis	(6)
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EGEE 591	Special Topics	(3)
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Total	30
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Industrial Engineering Concentration

Engineering Analysis Component:	3
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Engineering 570	Advanced Statistics and Design of Experiments	(3)
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Electives selected from:	9
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Any graduate level engineering courses or other courses with advisor approval

Specialty	15
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Engineering 504	Engineering Optimization Methods	(3)
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Engineering 552	Reliability Engineering	(3)
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Engineering 554	Technical Project Management	(3)
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Engineering 558	Advanced Engineering Economy	(3)
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Engineering 559	Systems Engineering and Analysis	(3)
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Research	6
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Engineering 599r* Thesis	(2-4)
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Total	33
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Mechanical Engineering Concentration

Option: Energy	
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Mathematics Component:	6
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Mathematics 515	Applied Mathematics for Science and Engineering I	(3)
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one course selected from:	
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Mathematics 516	Applied Mathematics for Science and Engineering II	(3)
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Mathematics 518	Advanced Numerical Methods	(3)
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Electives selected from:	6
Engineering 430 Chemical System Design	(3)
Engineering 440 Advanced Fluid Dynamics	(3)
Engineering 441 Energy Conversion	(3)
Engineering 443 Thermal Component Design or other approved elective	(3)
Specialty:	16
Engineering 532 Advanced Thermodynamics	(4)
Engineering 534 Transport Phenomena	(4)
Either	
Engineering 536 Mass Transfer Operations	(4)
or Engineering 538 Heat Conduction and Radiation *500-level approved elective	(4)
Research:	6
Engineering 599r** Thesis	(2-4)
Total	34

*Engineering 586 Energy Systems is recommended.

**With approval of the Engineering Graduate Committee, students who do full-time engineering work in industrial or governmental organizations may substitute six hours of approved 500-level courses plus Engineering 590 Engineering Project (3) for Engineering 599r Thesis (6).

Mechanical Engineering Concentration

Option: Mechanics

Mathematics Component:	6
Mathematics 515 Applied Mathematics for Science and Engineering I	(3)

one course selected from:

Mathematics 516 Applied Mathematics for Science and Engineering II	(3)
Mathematics 518 Advanced Numerical Methods	(3)

Electives selected from:	6
ENME 442 Machine Design	(3)
ENME 445 Structural Dynamics	(3)
ENME 446 Advanced Mechanics of Materials or other approved electives	(3)

Specialty:	16
Engineering 542 Finite Element Analysis	(4)
Engineering 544 Applied Mechanics	(4)
Engineering 564 Analysis and Design of Plate and Shell Structures	(4)
*500-level approved elective	(4)

Research:	6
Engineering 599r** Thesis	(2-4)
Total	34

*Engineering 586 Energy Systems is recommended.

**With approval of the Engineering Graduate Committee, students who do full-time engineering work in industrial or governmental organizations may substitute six hours of approved 500-level courses plus ENME 446 (3) for Engineering 599r Thesis (6).

Engineering Management, M.S.

Professor Edward McMahon, *Coordinator*

(423) 425-4771 or email at Ed.McMahon@utc.edu

A Master of Science degree is offered in engineering management. The program is designed for people with engineering or science backgrounds who have moved or expect to move into areas of managerial responsibility. There is focus on strategy, technology issues, human resources, products and services, quality control and reliability, engineering economics, product design and development, cost analysis, and other management issues. Also, there is emphasis on decision making, integration of management and engineering sciences, and communications.

The program can be completed online.

Prerequisites

Normally, graduates of accredited engineering program will have met basic course requirements, allowing them to move directly into the engineering management program. For some engineering graduates, as well as for some graduates of science programs, it will be necessary to take prerequisite courses. Usually such courses fall in the areas of calculus, statistics, or undergraduate engineering economics.

Admission procedures

Applicants must:

- Hold a baccalaureate degree from a regionally accredited college or university;
- Have a 2.5 GPA on a 4.0 scale or 3.0 in the senior year

Program Requirements

Students are required to complete a minimum of 36 semester hours of prescribed courses for a major in engineering management. The student's program is planned in consultation between the student and advisor. Each program will be designed to meet the needs of the student, taking into consideration background and experience. In some instances, prerequisite courses may be required.

The program requires courses in the core and electives.

Core Courses (21 hours)

ENGM 550 Concepts in Engineering Management	(3)
ENGM 554 Technical Project Management	(3)
ENGM 555 Technical Entrepreneurship and Leadership	(3)
ENGM 556 Quality Management Systems	(3)
ENGM 558 Advanced Engineering Economics	(3)
ENGM 583 Strategic Management and Technology	(3)
ENGM 595 Capstone Project I	(1)
ENGM 596r Capstone Project II	(1-2)

Electives (15 hours)

ENGM 551 Legal and Ethical Perspectives in Engineering	(3)
ENGM 580 Product Development	(3)
ENGM 582 Value Management	(3)
ENGM 591r Special Topics in Engineering Management	(1-4)
ENGR 504 Engineering Optimization Methods	(3)
ENGR 552 Reliability Engineering	(3)
ENGR 559 Systems Engineering and Analysis	(3)

Note: electives can be taken in areas outside of engineering management such as other engineering disciplines or business.

Post-Baccalaureate Certificate Programs

The College of Engineering and Computer Science offers three graduate certificate programs intended to provide skilled individuals with technical knowledge to enhance their work in industry and government.

Certificate in Project Management

Admission Requirements

Knowledge of engineering economy is required as demonstrated by the satisfactory completion of ENGR 352 or equivalent. Individuals will be admitted to the Certificate in Project Management program if either:

- They have a bachelor's degree and significant related professional experience such as project management, cost accounting, and economic evaluation of projects and are approved by the Engineering Management Graduate Committee.

OR

- b. They meet the admission requirements of the Graduate School as stated in the Graduate Catalog, are admitted to the Engineering or Engineering Management M.S. program, and have satisfied all prerequisite courses assigned by the respective Graduate Committee.

Course Requirements

ENGM 554	Technical Project Management	(3)
ENGM 555	Technology Leadership and Entrepreneurship	(3)
ENGM 558	Advanced Engineering Economy	(3)
ENGR 559	Systems Engineering and Analysis	(3)

Certificate in Quality Management**Admission Requirements**

Knowledge of statistics is required as demonstrated by the satisfactory completion of ENGR 222 or equivalent. Individuals will be admitted to the Certificate in Quality Management program if, either:

- a. They have a bachelor's degree and a significant related professional experience in the quality and reliability areas and are approved by the Engineering Management Graduate Committee.

OR

- b. They meet the admission requirements of the Graduate School as stated in the Graduate Catalog, are admitted to the Engineering Management M.S. program, and have satisfied all prerequisite courses assigned by the respective Graduate Committee.

Course Requirements

ENIE 457	Quality Control	(3)
ENGM 552	Reliability Engineering	(3)
ENGM 556	Quality Management Systems	(3)
ENGR 570	Advanced Statistics and Design of Experiments	(3)

Total hours 12**Certificate in Fundamentals of Engineering Management****Admission Requirements**

Knowledge of engineering economy is required as demonstrated by the satisfactory completion of ENGR 352 or equivalent. Individuals will be admitted to the Certificate in Fundamentals in Engineering Management

- a. They have a bachelor's degree and significant related professional experience and are approved by the Engineering Management Graduate Committee.

OR

- b. They meet the admission requirement of the Graduate School as stated in the Graduate Catalog, are admitted to the Engineering Management M.S. program, and have satisfied all prerequisite courses assigned by the respective Graduate Committee.

Course Requirements

ENGM 550	Concepts in Engineering Management	(3)
ENGM 554	Technical Project Management	(3)
ENGM 556	Quality Management	(3)
ENGM 558	Advanced Engineering Economy	(3)

Total hours 12**English, M.A.**

Professor Verbie Lovoren Prevost, Head

Professor Eileen Meagher, Director of English Graduate Studies

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The Department of English offers a Master of Arts degree with two concentrations. The first is a curriculum which stresses literary study, criticism, and research. This concentration is designed for those who wish to enhance their knowledge of the canon of British and American literature, the attendant scholarship, the various rhetorical and critical approaches to the study of literature, and the act of literary writing.

The second concentration emphasizes rhetoric and writing: i.e., technical writing, creative writing, and writing for such professional outlets as journalism, public relations, and business. This concentration is designed for those who wish to further their ability as creative writers or to enter such fields as news, advertising, technical or industrial writing, publishing, and the like; and for those already employed in these endeavors who wish to advance themselves with the help of further academic work.

Both concentrations provide three options: 1) 27 hours of coursework and a 6-hour thesis; or 2) 30 hours of coursework and a 3-hour extended essay; or 3) 33 hours of coursework.

The overall objectives of the program are to increase the student's awareness of literature; to prepare the student in the methods and philosophy of research and bibliography; to increase the student's ability in communication, including preparation for careers in business and industry; to prepare future teachers with a solid academic background in literature, methodology, literary criticism, and composition; and to enhance the skills of those teachers currently in service.

Admission

In addition to meeting the standards for admission to The Graduate School, applicants for the M. A. in English should have (1) a score of at least 500 on the verbal section of the GRE; (2) a minimum of 18 hours in English beyond freshman composition, with a minimum GPA of 3.0 for those hours, or a score above the 50th percentile on the Advanced GRE in literature. All applicants must submit a 250-word statement of intent. Any student seeking conditional admission must complete a proctored writing sample in addition to the letter of intent.

Degree Requirements and Concentrations*General Requirements*33 hours coursework **or**30 hours coursework + 598 (3-hour research project) **or**

27 hours coursework + 599 (6-hour thesis).

Literary Study Concentration (33 hours)

ENGL 500 Methodology and Bibliography

ENGL 527 Critical Theory (3)

15 hours in literature courses chosen from each of the following areas:

Shakespeare (3)

British literature before 1800 (3)

British literature since 1800 (3)

American literature (6)

6 hours to be chosen from the areas of (a) rhetoric and writing and/or

(b) language.

6 hours in elective English courses (may include 598 or 599)

Rhetoric and Writing Concentration (33 hours)

ENGL 500 Methodology and Bibliography
 ENGL 520 Modern Rhetorical Theory (3)
 Creative Writing students may substitute ENGL 527 Critical Theory or ENGL 550 Workshop: Writing
 12 hours in rhetoric and writing courses
 9 hours chosen from the areas of literature and/or language
 6 hours in elective English courses (may include ENGL 598 or ENGL 599)

Admission to Candidacy

A student admitted to the M.A. degree program must file an application for admission to candidacy before completing more than 18 hours of graduate coursework for the degree. The application may be filed upon completion of 9 hours of approved graduate courses including English 500. A student must have completed or be enrolled in ENGL 500 before filing for candidacy. Please refer to page 11 for additional regulations regarding admission to candidacy.

Comprehensive Examinations

Students are required to pass a comprehensive examination. Students must have completed at least 24 hours of the required coursework before taking the comprehensive examination. Information concerning these examinations is found on page 23.

Certificate in Writing/Rhetoric

Admission requirements: Applicants must meet the requirements for graduate work in English (See *Graduate Catalog* p. 46)

Number of Hours: 18 Credit Hours

Required Courses:

English 521 Rhetorical Analysis
 English 523 Composition Theory
 English 553 Writing Assessment Theory
 English 556 The Practice of Teaching Writing

Electives: Students will choose two courses from the following:

English 513 Writing Essays for Publication
 English 522 Orality, Print, and Hypertext
 English 549 Fiction Writing
 English 550 Workshop: Writing
 English 555 Proposals and Prospectus Writing
 English 558 Composition Studies as Cultural Critique

Considerations: Students who in the course of pursuing the certificate in writing/rhetoric or who upon completing the certificate wish to earn an MA in English must apply for entrance into the MA program. They may count their certificate coursework toward fulfilling the requirements of the the MA in English with a concentration in rhetoric/writing. Those who wish to earn the MA in English with a concentration in literature must fulfill all the requirements of the literature track.

Students who have the MA in English may apply to take the certificate in rhetoric/writing.

Environmental Science, M.S.

Professor Charles Nelson, *Head*

(423) 425-4341 or email at Charles-Nelson@utc.edu

Graduate Program Coordinator, Professor John Tucker

(423/425-2316 or email at John-Tucker@utc.edu

The graduate program in environmental science is designed to help meet the national needs of government, business, and industry for professionals in the field of environmental sciences. To this end, the faculty emphasize preparing students for the professional world of environmental science, ecology, and natural resources management with a sound scientific and technical background based upon contemporary economic and political realities. In doing so, the program enhances the breadth and depth of students knowledge and experience. Research projects usually address local and regional concerns and provide experience in evaluating issues in a holistic approach and developing oral and written communication and advocacy skills for assuming leadership roles in a wide variety of interdisciplinary professional settings.

Application Procedures

An applicant for admission to the graduate program in environmental science must meet the following requirements:

- Graduation from a regionally accredited institution of higher education
- A 2.75 GPA overall or a 3.0 in the last 60 hours.
- Satisfactory scores on the Graduate Record Examination (general test)
- A background knowledge of environmental science concepts equivalent to UTC's undergraduate courses ESC 150 and 151 Introduction to Environmental Science or an undergraduate or graduate course in ecology.
- A dossier which documents written and oral communication skills and includes the following:
 - a resume
 - prior publications or sample research paper
 - a written account of prior educational and professional experiences in environmental science, including laboratory competencies, career goals, and reasons for pursuing graduate study.
- Recommendations from a minimum of three individuals familiar with the applicant's scholastic ability and professional work background.

Applicants are recommended to have completed:

- Two academic years background in laboratory sciences at the junior or senior level, i.e., four semester laboratory courses at the 300 or 400 level.
- A course in environmental ethics
- Mathematics course equivalent to UTC's MATH 136 or 150, one course each in introductory statistics and computer science.
- An introductory course in environmental law equivalent to UTC's ESC 410.

Program Requirements

To earn the M.S. degree, students must successfully complete 36 semester hours in the thesis option, internship option, or the literature review option with a cumulative grade point average of 3.0 or higher.

Core Courses

All students must take the following courses:

ESC 502	Mechanisms in the Environment	(3)
ESC 505	Biodiversity and Natural Resource Conservation	(3)
ESC 512	Applied Statistics for Environmental Scientists	(3)
ESC 514	Environmental Law and Regulations	(3)
ESC 570	Seminar I (must be taken in first year of graduate program)	(1)
ESC 571	Seminar II (must be taken in first year of graduate program)	(1)

Research (must take a minimum of 3 hours)

ESC 599r	Master's Thesis [For thesis option]	(6)
ESC 598r	Internship [For internship option]	(6)
or		
ESC 597r	Individual Research [For literature review option]	(3)

Designated Electives

(16-18 hours minimum for thesis and internship options; 19-21 hours minimum for literature review option)

ESC 521	Seminar in Environmental Ethics	(3)
ESC 503	Microbial Ecology	(4)
ESC 504	Bioremediation	(4)
ESC 517	Advanced Environmental Law	(3)
ESC 518	Case Studies in Environmental Problems	(3)
ECON 527	Topics in Economics	(3)
GEOG 515	Regional Environmental Management	(3)
GEOG 525	Regional Land Use and Transportation	(3)
POLS 524	Public Policy	(3)
BIOL 530r	Population Interactions (Advanced Topics in Population Ecology)	(3-4)
BIOL 532	Toxicology	(3)
CHEM 512	Environmental Chemistry	(3)
CHEM 516	Hazardous & Toxic Wastes	(3)
ESC 506	Advanced Ecology	(3)
ESC 533	Environmental Genetics	(3)
ECS 561	Advanced Applications of Remote Sensing and Geographic Information Systems	(3-4)
ESC 565	Environmental Toxicology & Risk Assessment	(3-4)
GEOG 560	Topics in Remote Sensing	(3)

Health and Human Performance, M.S.

Associate Professor Gary Wilkerson, Director, *Advanced Concentration in Athletic Training* (423) 425-5394 or email Gary-Wilkerson@utc.edu

Assistant Professor Marisa Colston, Director, *Entry-Level Concentration in Athletic Training* (423) 425-4743 or email Marisa-Colston@utc.edu

Assistant Professor Nicholas Boer, Director, *Clinical Exercise Physiology* (423) 425-4745 or email Nicholas-Boer@utc.edu

Associate Professor Burch Oglesby, Director, *Worksite Health and Productivity* (423) 425-5214 or email Burch-Oglesby@utc.edu

The Master of Science in Health and Human Performance is designed to provide an educational experience that will optimally prepare students to perform the professional role of an athletic

trainer or worksite health promotion professional in diverse practice settings. The M.S. degree offers four concentrations: Advanced Athletic Training, Clinical Exercise Physiology, Entry-Level Athletic Training and Worksite Health and Productivity.

* For the most up-to-date and comprehensive information about the athletic training concentrations, admissions, faculty and facilities, please refer to the Graduate Athletic Training Program website: www.utc.edu/academic/graduateathletictraining

Admission to The Graduate School

Submit all of the required materials directly to The Graduate School. An applicant for admission to The Graduate School for consideration for the degree concentrations must meet the following requirements:

- Completed and signed application form provided by UTC.
- Payment of \$25, nonrefundable application fee.
- Graduation from a regionally accredited institution of higher education.
- A minimum grade point average of 2.75 on all undergraduate work taken prior to receiving the baccalaureate degree or a 3.0 in the last 60 hours.
- Transcripts. Students must request that one official copy of each transcript be sent directly to The Graduate School office from all colleges and universities attended.
- An official report of the applicant's score on the Graduate Record Examination (GRE), taken within the last five (5) years, must be sent directly to The Graduate School.
- Copy of current CPR and first aid certification cards.
- Three letters of reference (with at least one from an academic instructor or advisor).
- A resume and letter of interest (cover letter).

Clinical Exercise Physiology Concentration

This concentration is designed to prepare student in the skills necessary to develop, supervise and evaluate exercise programs for individuals with chronic diseases such as heart disease, diabetes and obesity. Additionally, students will learn about medications and co-morbidities that may complicate an exercise prescription as well as basic research skills. This program will prepare individuals to take the American College of Sports Medicine Registry Exam. Upon completion, students will be prepared to work as an exercise physiologist in hospital based rehab programs, physical therapy clinics, company wellness programs, community fitness facilities, research and further graduate work.

The program consists of a two-year, 45 to 48 credit hour curriculum depending on whether the student chooses the thesis or non-thesis option. The curriculum in this concentration consists of 39 to 42 hours of required courses and 6 hours from an elective category. The culminating experience will consist of a 6 credit internship in a clinical setting and the completion of a research or thesis project.

Clinical Exercise Physiology Concentration Admission Requirements

An Applicant for admission to the Clinical Exercise Physiology Concentration must meet the following requirements:

Prerequisite course work:

- Anatomy and Physiology of the Human Body
- Exercise Physiology
- First Aid and CPR
- Nutrition
- Exercise Prescription
- Kinesiology

A student may be considered for conditional admission to the program in he/she fails to meet any of the requirements outlined above, pending completion of the deficiencies.

Course Requirements		39-42 hours
HECO 434	Clinical Nutrition	3
EHLS 510	Advanced Interpretation of EKG	3
EHLS 517	Advanced Clinical Exercise Physiology	3
EHLS 518	Advanced Exercise Prescription	3
EHLS 529	Lab Methods and Procedure In Exercise Physiology	3
EHLS 541	Physical Activity and the Older Adult	3
EHLS 545	Cardiopulmonary Rehabilitation	3
EHLS 556	Research Methods	3
EHLS 557	Pharmacology and Fitness Testing	4
EHLS 565	Psych. Impact of Injury, Illness and Chr Dis	3
EHLS 578	Internship in Health and Human Performance	6
EHLS 598	Research of EHLS 599 Thesis	3
Elective Courses - choose 2 courses		6 hours
EHLS 506	Legal and Ethical Issues in Sports Medicine (6)	
EHLS 507	Soc/Psy of EHLS	(3)
EHLS 521	Pathomechanics and Assessment	(3)
EHLS 522	Function Rehabilitation Concepts I	(3)
EHLS 526	Clinical/industrial Business Principles	(3)
EHLS 530	Assess. of Worksite Health & Productivity	(3)
EHLS 535	Promotion of Worksite Health & Product.	(3)
EHLS 536	Principles and Practices of Managing Lost Time & Healthcare Costs	(3)
HECO 536	Advanced Sports Nutrition	(3)
Total concentration hours		45-48 hours

Entry-Level Concentration in Athletic Training (CAAHEP Accredited)

The Entry-Level Concentration (Athletic Training Education Program - ATEP) in the Master of Science Degree in Health and Human Performance is designed to prepare the graduate student who successfully completes the program, towards eligibility to sit for the National Athletic Trainers' Association Board of Certification examination. This concentration is not intended for students with an undergraduate degree in athletic training. However, it is desirable to have an undergraduate degree in a related field. To earn the M.S. degree in Health and Human Performance with a concentration in Entry-Level Athletic Training, students must successfully complete 50 semester hours with a minimum cumulative grade point average of 3.0.

The Entry-Level Athletic Training Education Program (ATEP) is founded on the guidelines of the national accreditation organization - Commission on Accreditation of Allied Health Education Programs (CAAHEP) of the American Medical Association (AMA). The courses and clinical experiences within the curriculum are competency and clinical proficiency based. The ATEP also adheres to the policies of the National Athletic Trainers' Association, including its constitutional by-laws, Code of Ethics and position statements. The philosophy of the ATEP is to provide an effective blend of classroom instruction, clinical experience, and research designed to prepare the student for the prevention, management, and rehabilitation of injuries/illnesses incurred by persons who perform physically de-

manding activities. All students interested in this degree program must make a formal application to the program and follow the prescribed course of study.

Entry-Level Concentration Admission Requirements

An applicant for admission to the Entry-Level Concentration in Athletic Training must meet the following requirements:

Prerequisite course work

- Anatomy and Physiology of the Human Body
- Exercise Physiology
- First Aid and CPR
- Nutrition
- Personal Health and Wellness
- General Psychology

A student may be considered for conditional admission to the program if he/she fails to meet any of the requirements outlined above, pending completion of the deficiencies.

*A syllabus must be included from each of the listed prerequisite courses. Transcripts alone will not meet this requirement. The decision as to whether the respective syllabus meets the prerequisite requirement will be made by the Program Director. To graduate in the two-year time span, students must have already completed specific prerequisite courses prior to enrolling in certain classes in the program. Failing to complete all six prerequisite courses prior to the required program courses may extend the course of study to three years. These requirements must be fulfilled for program completion and to take the NATABOC examination.

Clinical Education Requirements

Once notified of admittance into the ATEP, students must meet specific requirements prior to beginning the clinical education component of the program.

Students in the ATEP will be working in a variety of health care settings. The UTC-ATEP has established guidelines which comply with the CAAHEP Accreditation Standards, as well as the recommendations of the UTC Student Health Service. Students must fulfill these requirements by August 10th in order to start the clinical education component of the curriculum.

- Complete the following pre-clinical health requirements:
 - Physical examination & verification of meeting the ATEP Technical Standards.
 - Updated Immunization Records
 - Hepatitis B (or signed waiver)
 - Measles
 - Mumps
 - Rubella
 - PPD for Tuberculin testing
 - Tetanus (please provide date of last booster)
- Purchase individual student professional liability coverage in the minimum of \$1,000,000 per incidence/occurrence and \$3,000,000 annual aggregate.

FAILURE TO SATISFY THE PRE-CLINICAL HEALTH REQUIREMENTS MAY RESULT IN DISMISSAL FROM THE UTC-ATEP.

Clinical Education Description

The clinical component of the educational program includes a minimum of four (4) semester rotations under the direct supervi-

sion of an approved clinical instructor (ACI) at the University or affiliate site. The clinical education will include the presentation and evaluation of the Entry Level Athletic Training Clinical Proficiencies. The primary settings for the students' clinical education and field experiences will be the athletic training room(s), athletic practices and competitive events.

Athletic training students (ATS) must complete their first two clinical rotations (first two academic semesters) in the UTC Athletic Training Facilities located in the McKenzie Arena at UTC. They are assigned to ACIs who provide athletic training coverage to varsity, intramural and club sports. The ATS will be assigned to learn under the guidance of an ACI who will be physically present on-site. It should be emphasized that students are not assigned to facilities or sports. The clinical rotations will change each semester or when the given season or sport of the assigned ACI has ended.

Each student will have the opportunity to obtain clinical education and field experiences with athletic training care of upper extremity, lower extremity, general medical and equipment intensive situations, and will obtain at least 25% of their clinical experience in a setting that is considered high risk.

Supervised clinical experiences will also occur in diverse athletic training and allied health settings, both on and off-campus. These experiences will include surgical observation, physician office observation, grand rounds, physical therapy, occupational therapy, industrial rehabilitation/work hardening, as well as related assigned observation experience.

Course Requirements

EHLS 500	Athletic Training Techniques
EHLS 511	Therapeutic Agents Lab
EHLS 512	Therapeutic Agents in Rehabilitation
EHLS 513	Therapeutic Exercise in Rehabilitation
EHLS 514	Lower Extremity Evaluation Lab
EHLS 515	Upper Extremity Evaluation Lab
EHLS 516	Rehabilitation Lab
EHLS 520	Cadaver Anatomy of Trunk & Extremities
EHLS 525	Observation Experience
EHLS 526	Clinical~Industrial Business Principles
EHLS 527	Gen Med Aspects in Athletic Training
EHLS 553	Athletic Training Practicum I
EHLS 556	Research Meth. in Exer. Science and Health
EHLS 563	Athletic Training Practicum II
EHLS 573	Athletic Training Practicum III
EHLS 581	Lower Extremity Evaluation
EHLS 582	Upper Extremity Evaluation
EHLS 583	Advanced Athletic Training Practicum
EHLS 598	Research

Advanced Athletic Training Concentration

(Accredited by the Graduated Education Committee of the National Athletic Trainers' Association)

<http://www.utc.edu/academic/graduateathletictraining>

Program Description

The Advanced Athletic Training Concentration is to provide students who have attained NATA-BOC Certification with an educational experience that will optimally prepare them for success in any of the alternative professional roles that they may choose. Students are provided with instruction that relates relevant concepts from business, finance, management, psychology, and engineering to optimally prepare them to perform the profes-

sional role of an athletic trainer in either the scholastic, clinical, or corporate practice settings in a manner that effectively meets the needs of physically active people.

Advanced Concentration Curriculum

Summer AM III

EHLS 524	Seminar: Current Research Issues in Athletic Training	(2)
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Fall First Year

EHLS ***	EElective	(3)
EHLS 556	Research Methods in Exercise and Health	(3)
EHLS 520	Cadaver Anatomy of the Trunk and Extremities	(4)

Spring First Year

EHLS 521	Pathomechanics and Assessment of Athletic Injuries	(3)
EHLS 526	Clinical~Industrial Business Principles	(3)
EHLS 522	Functional Rehabilitation Concepts I	(3)

Summer AM I

EHLS 596	Pre-Thesis	(3)
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Fall Second Year

EHLS ***	Elective	(3)
EDAS 505	Descriptive and Inferential Statistics	(3)
EHLS 523	Functional Rehabilitation Concepts II	(3)

Spring Second Year

EHLS ***	Elective	(3)
EHLS 506	Legal and Ethical Issues in Sports Medicine	(3)
EHLS 598/599	Research/Thesis	(3)

Total Credit Hours (42)

Health and Productivity Management Concentration

This concentration is designed to meet the needs of allied health professionals desiring positions in worksite health promotion and productivity management. The concentration in Health and Productivity Management offers coursework and worksite experiences to assist students to meet most Association for Worksite Health Promotion competencies (depending on undergraduate coursework and experience) and give them the opportunity of moving into worksite health and productivity management careers. The program of study consists of a two-year, 41-44 credit hour curriculum depending on whether the student chooses the thesis or non-thesis option. The curriculum in this concentration consists of 26-29 hours of required courses, and 15 hours from two elective categories. The culminating experience will consist of a 6 credit hour internship at a worksite and completion of a research or thesis project.

Course requirements

To earn the M.S. degree in Health and Human Performance with a concentration in Health and Productivity, students must successfully complete 45-48 semester hours with a minimum cumulative GPA of 3.0.

Required Courses

EHLS 517	Advanced Clinical Exercise Physiology
EHLS 518	Advanced Exercise Prescription
EHLS 526	Clinical/Industrial Business Principles
EHLS 530	Assessment of Worksite Health and Productivity
EHLS 535	Promotion of Worksite health & Productivity
*EHLS 536	Principles & Practices of Managing Lost Time & Healthcare Costs
EHLS 541	Physical Activity and the Older Adult
EHLS 556	Research Methods
EHLS 565	Psychological Implications of Injury, Illness, and Chronic Disease
EHLS 578	Internship in Worksite Health & Productivity
EHLS 598	Research or Thesis
HECO 434	Clinical Nutrition

(Total required courses = 39-42 hours)

Elective Courses - 6 hours from two categories below

EHLS 505	Management of EHLS
EHLS 506	Legal and Ethical Issues in Sports Medicine
EHLS 507	Soc/Psy of EHLS
EHLS 521	Pathomechanics and Assessment
EHLS 522	Functional Rehabilitation Concepts
EHLS 529	Lab Methods and Procedures in Exercise Physiology
EHLS 545	Cardiopulmonary Rehabilitation
BMGT 574	Foundations of Marketing Strategy
BMGT 575	Human Behaviour and Organization

(Total elective courses = 6 hours)

Total Program Requirements = 45-48 hours

Admission

There are two levels of admission. The first is admission to The Graduate School and the second to the specific concentration. Admittance to The Graduate School does not guarantee admittance to the concentration. Candidates who are not selected to enter the academic program will be given the opportunity to re-apply to the concentration for the next academic year.

Policies Relevant to All Concentrations in the M.S. Degree in Health and Human Performance**Retention**

A student admitted to The Graduate School must maintain a 3.0 grade point average on all courses taken for graduate credit. In the event the student fails to meet this standard, one of the following actions will be taken:

Probation

A student will be placed on academic probation whenever the grade point average falls below 3.0 on courses completed for graduate credit.

Dismissal

The Dean of The Graduate School will make decisions regarding continuation. Students admitted to graduate study must maintain a cumulative grade point average (GPA) in all courses taken for graduate credit. Graduate students will be placed on Academic probation whenever their GPA falls below a 3.0. By the end of the next two terms of enrollment (counting the entire summer as one term), students must raise their cumulative GPA to 3.0 or

higher. Students will be academically dismissed if they fail to achieve this cumulative GPA within the two semester probationary period. Dismissed students may appeal to the graduate council for readmission. Upon readmission, students may resume graduate study with the same continuation standards.

Graduation

In order to be eligible for degree conferral, the candidate must have completed all coursework as specified on the approved Application for Admission to Candidacy form. There may be no more than six (6) hours of C in courses presented for degree, and there must be a minimum average of B on all graduate coursework attempted. In addition, the candidate must have completed all other requirements as specified by the major.

*The Graduate Athletic Training Program reserves the right to establish and enforce retention requirements above and beyond those established by The Graduate School, for the athletic training concentrations, as stated in the GATP Student Manual.

Learning and Leadership, Ed.D

Ms. Becca McCashin Head (423) 425-5445 or email at Becca-McCashin@utc.edu

The basic (core) program is designed as a seven-semester (two-year) program. The program may be extended beyond the two-year timeframe for the completion of the focused electives and/or for the completion of the dissertation. Participants who have not completed the dissertation within the two-year timeframe must enroll for a minimum of three credit hours each semester during which they continue to work toward completion of the dissertation.

The program involves 39 credit hours of core coursework in seven domains. The coursework content will be delivered through an integrated instructional format during each semester. Each semester consists of six credit hours of coursework delivered in a seminar style. In the summer the seminars will consist of four-week, half-day (four hour) programs, and during the regular academic year they will consist of five three-day sessions per semester. Participants will attend specific core courses for the purpose of gaining an understanding of the content and skills addressed. On-line components of the program will enhance the applications of technology to learning and provide additional opportunities to extend knowledge and skill.

A unique feature of the program is the manner in which it is delivered: through intensive four-week cohort seminars in each summer semester, supplemented through the academic year by periodic three-day cohort seminars and further enhanced by core coursework and distance-learning experiences during each semester.

The program calls for a minimum of 66 credit hours of work in three distinct areas:

1. Cohort Experience (Seminars and Coursework)
2. Focused Electives
3. Dissertation

Admission

Individuals admitted to the program will already have a master's degree and a minimum of two years of practical experience in a leadership setting. The program will require participants to (1) master a common set of basic core outcomes, (2) complete an Individualized Learning and Leadership Process (ILLP), (3) complete 15 credit hours of focused electives, and (4) complete a dissertation.

Applicants for admission to the program will be required to meet two levels of admission: admission to the Graduate School and admission to the doctoral program. An applicant for admission to the program must hold a master's degree from a regionally accredited institution or foreign equivalent and have a minimum grade point average of 3.0 on all graduate coursework taken prior to receiving the master's degree.

Admission Requirements

Admission requirements are sufficiently rigorous to ensure that participants in the program are academically talented and professionally dedicated. The admission and review criteria are designed to help ensure that, once admitted, each participant is likely to succeed in the degree program.

We seek a diverse group of participants who share both a record of accomplishment in teaching and leadership and the potential to use the program as a springboard to even more significant achievements.

Applicants for admission to the program will be required to meet two levels of admission, one involving admission to the Graduate School and another involving admission to the doctoral program.

Level I – Admission to Graduate School

Admission to the Graduate School requires the following conditions:

1. Receipt of a master's degree from a regionally accredited institution or foreign equivalent.
2. Grade point average of 3.0 on all graduate coursework taken prior to receiving the master's degree.
3. A minimum of two years practical work experience in teaching or in a leadership role in a learning environment (including the private sector).

Application Process

1. A completed, signed application form submitted to the Graduate School Office. Forms are available from the Graduate School Office.
2. Payment of a \$25 nonrefundable application fee.
3. An official transcript from each college or university previously attended. These transcripts must be sent directly from the institutions to the Graduate School Office. International participants must supply authorized school or university records with certified translations if the records are in a language other than English. Translations must include descriptive titles of courses studied and grades gained in final examinations.
4. Submission of official scores on the general section of the Graduate Record Exam (GRE). [The decision as to whether a candidate will be admitted to the program will be influenced by a number of factors

described herein under the heading of "Level II – Admission to the Doctoral Program."] As a general rule, the following scores are considered desirable for entrance into the program:

Verbal:	475
Quantitative:	550
Analytical Writing:	3.5-4

Tests must have been taken within the previous five years prior to application for scores to be accepted.

5. International participants will also need to provide certification of English proficiency. Official scores on the Test of English as a Foreign Language (TOEFL) must be submitted. An official score of 550 or above is required. A score of 213 or above is required for a computer-based test. The above requirements will be waived for participants holding a degree from an accredited U.S. institution. The international participant must also submit evidence of financial resources sufficient to provide adequate support (as determined by the University) during the candidate's period of residence as a participant.
- 6.. Three letters of recommendation from professional colleagues, supervisors, or former university professors.

Upon completion and submission of the above requirements and after admission to the Graduate School, the Graduate School Office will forward all items contained in the admissions file to the College of Education's Graduate Studies Division Department Head to begin Level II of the admission process.

Level II – Admission to the Doctoral Program

Decisions for acceptance will be made by an admissions committee based upon the overall potential for the candidate's success in the program. The candidate will be asked to engage in the following:

Statement of Purpose

Submit a "statement of purpose" for entering the program focusing on the participant's motivation and aspirations upon entering the program. Each candidate will attend an interview with the admissions committee during which the committee members will evaluate the candidate's ability to think and speak extemporaneously and the candidate's overall compatibility with the program's goals and requirements.

Upon completion of the above, the admissions committee will recommend to the department head of the Graduate Studies Division the provisional approval or denial of the candidate. Provisional acceptance into the program means the candidate is accepted pending successful participation in an admissions workshop, which is the final requirement toward full acceptance.

Admissions Workshop

As part of the Level II process, an admissions workshop will be held annually in the spring. It will entail an intensive daylong program orientation informing the candidates about the program and its requirements. It will also provide the faculty

with an opportunity to assess whether a candidate should receive full acceptance into the program. All prospective students will attend and be prepared for various “professional real life” simulations and exercises. Candidates will also participate in group problem-solving activities. Each candidate will attend an interview with the admissions committee during which the committee members will evaluate the candidate’s ability to think and speak extemporaneously and the candidate’s overall compatibility with the program’s goals and requirements. Within approximately one week of the conclusion of the admissions workshop, candidates will be notified of their admission status.

Admission Requirements for International Students

International students will follow the regular procedure for admission to the Graduate School and the Doctoral program in Learning and Leadership as described in the proposal for all students. The only exception regards the interview and attendance at the Admissions Workshop. In many cases, it is likely that the international student may not be in a position to be in attendance. In such circumstances, accommodations will be made so that actual attendance will not be required. Faculty will deal with these students on a case-by-case basis utilizing the following alternative strategies:

1. A telephone or video conferencing interview will be conducted in order to evaluate the candidate’s ability to think and speak extemporaneously and to gauge the candidate’s overall compatibility with the program’s goals and requirements.
2. Candidates will be asked to react to various professional real-life situations which will be posed in a telephone video conferencing format. Should this not be possible, the candidate will be asked to react in written format.
3. Utilizing the same format as in number two above, the candidate will be asked to respond to questions which are designed to measure the candidate’s general problem solving ability.

Admission to Candidacy

The participant will be admitted to candidacy upon successful completion of the following requirements:

1. Successful completion of the 54 credit hours basic program.
2. Successful achievement of a cumulative Grade Point Average of 3.0 or above.
3. Successful completion of preliminary periodic evaluations and examinations.
4. Successful completion and approval of the dissertation proposal.

Transfer Courses

This Ed.D. program is unique in terms of its delivery and its concentration upon integration of subject matter. Thus the transfer of coursework from other institutions is not practical, with the exception of coursework in the focused electives. A participant may transfer up to six graduate credit hours from an external program (accredited institution) or up to twelve graduate credit hours from any University of Tennessee

program. Only courses taken within five years of entrance into the program may be transferred. Coursework that is transferred will be limited to certain areas that are relevant to the focus (concentration) of the participant’s program as focused electives and included in the participant’s Individual Learning and Leadership Plan (ILLP).

Graduation Requirements

Graduation requirements for the degree are:

1. the completion of 39 credit hours of required doctoral level graduate coursework with no more than two courses below a ‘B’ grade.
2. a cumulative grade point average of 3.0.
3. successful completion and approval of the ILLP.
4. submission of an approved candidacy form.
5. successful completion of focused electives.
6. passage of three periodic evaluations and presentation and acceptance of portfolio.
7. successful completion and defense of the dissertation.

Residency

All participants must complete a residency requirement for the degree. This requirement will be satisfied as follows:

1. Attendance and successful completion of three summer seminars. Each seminar will involve 70 hours of seminar sessions.
2. Attendance and successful completion of the regular academic year seminars. Each seminar will involve 70 hours of seminar sessions.

Focused Electives

All participants will take at least 15 credit hours of what are called “focused electives,” which are designed to allow the participant to specialize in an area of concentration. This coursework will be taken from a discipline dependent upon the participant’s field of interest with the Individual Learning and Leadership Plan (ILLP) Review Team’s approval. Examples of potential concentrations are school leadership, business management, technology research, and psychology. The listing may be expanded in subsequent years, and any student may propose other options with ILLP Review Team approval. A participant may transfer up to 6 credit hours of the 15 focused electives credits from previous graduate work from an external program or up to 12 credit hours from a University of Tennessee program, as approved in the student’s ILLP.

Performance-Based Comprehensive Records

Every participant will prepare a portfolio of documentation that grows directly from the Individual Learning and Leadership Plan (ILLP). The portfolio contains the documentation that is reviewed by the Individual Learning and Leadership Plan (ILLP) Review Team periodically to ascertain acceptable progress in terms of program requirements and the proposed course of study as set forth in the proposal. Among other things that the participant should include in the portfolio are:

1. A copy of the approved Individual Learning and Leadership Plan (ILLP).
2. Performance-based comprehensive records consisting of such things as:

- a. Permanent products: CDs and hard copies of materials and products such as writings, videotapes, published materials, photos, and reports.
 - b. Instructor and/or ILLP Review Team evaluation statements.
 - c. Peer-review evaluation statements.
 - d. Self-evaluation statements, e.g., reflective journals.
3. Annotated bibliographies relating to professional reading and its application in the work place.

Evaluation of Participant Progress

Participant progress is evaluated in this program in three ways:

1. Within each course the instructors involved in the course evaluate the participant's progress.
2. At the end of every second semester (totaling three evaluation events), the participant's advisor and a second faculty member (as assigned), along with the participant's dissertation chair (if assigned by this date), review current progress and make specific recommendations regarding the status of the participant's program. Recommendations are selected from the following:
 - a. Satisfactory progress: Program to continue without revision.
 - b. Satisfactory progress: Program to continue with revision.
 - c. Satisfactory progress: Program to continue but as part of a later cohort.
 - d. Unsatisfactory progress: Program terminated with lesser degree option applied.
 - e. Unsatisfactory progress: Program terminated with no degree of any kind achieved.
3. Successful completion and defense of dissertation.

Dissertation

Finally, each participant will complete and defend a dissertation. The dissertation represents the culminating project for the degree. In the completion of the dissertation, the participant will show evidence of competence in conceptualizing, carrying out, and reporting research.

Cohort Program Schedule*

2005

May-July (summer semester)

Seventy hours of seminar sessions

- EDD 710 Leadership Perspectives and Reform (Leadership)
 EDD 720 Ethical and Moral Bases of Education (Enterprise)
 Development of Performance-based
 Comprehensive Proposal (PCP)

(Focused Electives – optional)

August-Dec. (fall semester)

Five 3-day institutes and study work groups

- EDD 730 Educational Research (Research)
 EDD 760 Program Evaluation (Assessment & Evaluation)
 Comprehensive Evaluation/Portfolio Presentation I

(Focused Electives – optional)

2006

Jan.-April (spring semester)

Five 3-day institutes and study work groups

- EDD 740 Contemporary Visions of Human Learning
 (Learning)
 EDD 750 Curriculum Models and Instructional Design
 (Instruction)

(Focused Electives – optional)

May-July (summer semester)

Seventy hours of seminar sessions

- EDD 711 Organizational Development and Policy
 (Leadership)
 EDD 751 Curriculum Implementation, Governance, and
 Assessment (Instruction)
 Comprehensive Evaluation/Portfolio Presentation II

(Focused Electives – optional)

August – Dec. (fall semester)

Five 3-day institutes and work study groups

- EDD 731 Topics in Statistics (Research)
 EDD 761 Educational Assessment (Assessment & Evaluation)

(Focused Electives – optional)

2007

Jan.-April (spring semester)

Five 3-day institutes

- EDD 721 Twentieth Century Reform in American
 Schooling (Enterprise)
 EDD 762 Program Evaluation in Schools
 (Assessment & Evaluation)
 Comprehensive Evaluation/Portfolio Presentation III

(Focused electives – optional)

May-June (summer semester)

Two-week, half-day seminars (10 days at 4 hours)

- EDD 770R Doctoral Dissertation Seminar

*Individual Learning and Leadership Plan (ILLP)***

Music, M.M.

Professor Lee Harris, Head

(423) 425-4601 or email at Lee-Harris@utc.edu

Professor Monte Coulter Coordinator of Graduate Programs

(423) 425-4601 or email at Monte-Coulter@utc.edu

The Cadek Department of Music offers a Master of Music degree with concentration options in music education and performance. The concentrations within the Master of Music degree share the following goals in common: 1) To provide for the educational development of students beyond undergraduate education by offering experiences that deepen, expand, and relate musical and intellectual skills; 2) To contribute to the student's ability to create, organize, interpret, evaluate, disseminate and value musical knowledge; 3) To prepare the student for a more active role as a leader in the musical and educational life of the community as a teacher and musician; 4) To encourage the development of individual talents and personal scholarship, and a commitment to musical performance and listening as a continu-

ing and important part of professional life and education.

The following goal statements are related specifically to the individual Concentrations: **Music Education**—To improve the effectiveness of the student's teaching and to nurture a commitment to scholarship in music teaching and learning; **Performance**—To develop professional competence in performance technique and interpretation, including a commitment to mature judgement and artistic integrity.

Both the performance and music education concentrations require a minimum of 33 semester hours distributed among (1) courses in the major area, (2) cognate courses in music, (3) electives from designated courses in professional studies and liberal arts, and (4) a significant major project: a recital for candidates pursuing the performance concentration, 5) a thesis, project, or performance for music education majors.

In addition to degree requirements herein listed, other regulations for music majors appear in the current *Graduate Music Student Handbook*.

Admission

In addition to meeting the requirements for admission to The Graduate School (see *Admission Procedures*), students pursuing the concentration in music education must have a bachelor's degree in **music education** from a regionally accredited institution or a professional teacher's certificate.

Applicants to the **performance concentration** in music must audition on their primary performing medium before they are admitted to the program. In addition, a placement examination is given to assist students in planning appropriate courses in their programs of study. The placement examination must be taken before fall admission to the program. The Graduate Committee in Music may require remedial courses in music theory and/or writing skills as prerequisites to admission to degree programs. Normally, the student undertakes both the audition and placement examination before enrolling in graduate courses. Dates for auditions and examinations are available on request from the Music Department. The voice faculty may recommend non-degree status, division jury repetition, or appropriate prerequisite courses for vocal performance majors if deficiencies in French, German or Italian diction are noted.

Students admitted to the graduate programs will be assigned a faculty advisory committee, which will plan the student's course of study to ensure an appropriate balance of coursework. In the event a student's undergraduate record reflects areas of deficiency, the student will be assigned prerequisite coursework to remedy the deficient areas. Although credit for the courses will not apply toward the degree, satisfactory completion of these courses will enable the student to remain in the graduate program.

Admission to Candidacy

After successfully completing 9 but not more than 18 semester hours of approved graduate courses, the student will make application for admission to candidacy for the degree. Degree candidates in either concentration must take at least one-half of the coursework at the 500 level.

Comprehensive Examinations

Normally, candidates for the Master of Music degree will take written and oral comprehensive examinations during the last semester before graduation. Scheduled dates and regulations regarding procedures for comprehensive examinations may be found on page 23.

Thesis

Requirements for thesis are stated on page 23.

Music Education Concentration

The music education concentration includes fifteen hours in the major area; twelve hours of supportive courses in Music distributed among three cognate areas; five hours of elective courses and from one to three hours of thesis preparation, or a recital (performance), or project. The course of study will be determined by the student in consultation with the graduate advisory committee and will be subject to the approval of the graduate coordinator and the director of graduate studies. Students in the Music Education Concentration must receive approval from the Division Jury Committee prior to 500 applied study.

Major Area Courses (15 hours)

Music 508	Research Methods in Music Education	(3)
Music 520	Studies in Music Curriculum	(3)
Music 521	Psychology of Music	(3)
Music 522	Seminar in Music Education	
Music 535	History and Philosophy of Music Education	(3)

Cognate: Applied Music (4 hours)

Applied Music (500 level)	(1,1)
Music 500r	Graduate Ensemble (1,1)

Cognate: Music History and Literature (3-6 hours)

Music 502	Seminar in Music History and Research (required)	(3)
Music 511	Music Before 1600	(3)
Music 512	Music From 1600 to 1750	(3)
Music 513	Music From 1725 to 1825	(3)
Music 514	Nineteenth-Century Music	(3)
Music 515	Twentieth-Century Music	(3)

Cognate: Music Theory, Composition, and Analysis (2-5 hours)

Music 401r	Composition	(1-4)
Music 505	Seminar in Music Theory	(3)
Music 507	Advanced Analysis	(3)
Music 509	Musical Styles	(3)

Approved Electives (5 hours)

If the recital option is chosen for the project, the candidate must study with the appropriate applied music professor during the semester in which the recital takes place. The recital pre-hearing must also be approved by the Division Jury committee.

Thesis/Performance/Project (1-3 hours)

Kodaly Studies Option within the Music Education Concentration (15 hours)

MUS 508	Research Methods in Music Education	(3)
MUS 520	Studies in Music Curricula	(3)
MUS 521	Psychology of Music	(3)
MUS 522	Seminar in Music Education	(3)
MUS 535	History and Philosophy of Music Education	(3)

Cognate (4 hours)

Applied Music (500 level)	(1,1)
MUS 500r	Graduate Ensemble (1,1)

Cognate-Music History and Literature (3-6 hours)

MUS 502	Seminar in Music History and Research (required)	(3)
MUS 511	Music Before 1600	(3)
MUS 512	Music From 1600 to 1750	(3)
MUS 514	Nineteenth Century Music	(3)
MUS 515	Twentieth Century Music	(3)

Cognate-Music Theory, Composition and Analysis (2-5 hours)

MUS 401r	Composition	(1-4)
MUS 505	Seminar in Music Theory	(3)
MUS 507	Advanced Analysis	(3)
MUS 509	Musical Styles	(3)

Kodaly Certification (9 hours)

MUS 530	Kodaly Level I	(3)
MUS 531	Kodaly Level II	(3)
MUS 532	Kodaly Level III	(3)

Kodaly Practicum or Project (1-3)

MUS 596	Project in Music Education	
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Performance Concentration

The performance concentration includes fifteen hours in applied music study, ensemble participation, literature, and recital preparation; twelve hours of Supportive Courses in Music distributed between two cognate areas; and six hours of elective courses. The course of study will be determined by the student in consultation with the graduate advisory committee and will be subject to the approval of the graduate coordinator, and the dean of The Graduate School.

Major Area Courses (15 hours)

Applied Instruction (500 level)	(4,4)
Music 500r Graduate Ensemble	(1,1)
Music 550 Instrumental or Vocal Literature	(3)
Music 598r Recital	(2)

Ensemble participation requirements may be fulfilled by participation in established Music Department ensembles or chamber music activities approved by the graduate advisory committee. Credit for either of these options is established through registration in Music 500r.

The recital requirement consists of a full length solo recital on the UTC campus. The recital program must be submitted to the Graduate Committee in Music for approval at least one semester prior to that in which the recital will be given. The student will register for Music 598r for the semester in which the recital is scheduled and will be subject to a prehearing by the Division Jury at least three weeks prior to the scheduled performance date.

Cognate: Music History and Literature (6 hours)

Music 502	Seminar in Music History and Research (required)	(3)
Music 511	Music Before 1600	(3)
Music 512	Music From 1600 to 1750	(3)
Music 513	Music From 1725 to 1825	(3)
Music 514	Nineteenth-Century Music	(3)
Music 515	Twentieth-Century Music	(3)

Cognate: Music Theory, Composition, and Analysis (6 hours)

Music 401r	Composition	(1-4)
Music 505	Seminar in Music Theory	(3)
Music 507	Advanced Analysis	(3)
Music 509	Musical Styles	(3)

Approved Electives (6 hours)**Conducting Option**

In this option, conducting is the primary performing medium (PPM). A conducting student must audition before admission, study conducting in an applied music lesson, and is required to give a full-length recital on the UTC campus.

Specific requirements of the conducting option:

1. MUS 563, *Applied Conducting* (4,4) - instead of private study on an instrument or voice, the student takes private conducting lessons covering repertoire preparation and selection, conducting technique, score and clef reading, score preparation, performance traditions and practice, etc.
2. MUS 528, *Advanced Conducting* (2)
3. *Instrumental or Vocal Literature* (MUS 550) (3) - A special section focuses on music literature appropriate to the conductor's field (i.e., orchestral conductors would study "Orchestral Literature").
4. *Major Ensemble Conducting Assistant* (MUS 500r) - usually during the second year of study, graduate conducting students are assigned as a conducting assistant to a large ensemble, enroll in that large ensemble for credit, and serve as conducting assistant for that ensemble.

A typical program may include the following courses of study:

Major Area Courses (15)

Applied Instruction (500 level)	(4,4)
Music 500r Graduate Ensemble	(1,1)
Music 550 Instrument Literature	(3)
Music 598r Recital	(2)

In the form of a full-length chamber orchestra program (to be supervised by the major conducting professor and approved by the Department of Music faculty jury)

Cognate: Music History and Literature (6 hours)

Music 502	Seminar in Music History	
plus one of the following:		
Music 513	Music from 1725 to 1825	(3)
Music 514	Nineteenth-Century Music	(3)
Music 515	Twentieth-Century Music	(3)

Cognate: Music Theory, Composition and Analysis (6 hours)

Music 505	Seminar in Music Theory	(3)
Music 507	Advanced Analysis	(3)

Approved Electives (6 hours)

Music 528	Advanced Conducting	(2)
Music 500r	Major ensemble [as conducting assistant]	(1,1)
Any other two hours of music electives.		

Intended for students pursuing the performance option. Coaching and instruction in preparation for the graduate recital. *Prerequisites:* approval of Division Jury, graduate advisory committee and graduate committee in music, and admission to candidacy.

Nursing, M.S.N.

Dr. Katherine Lindgren, *Director*

(423) 425-4646 or email at Kay-Lindgren@utc.edu

The Master of Science in Nursing prepares professional nurses for advanced practice as educators, administrators, nurse informaticists, family nurse practitioners, or nurse anesthetists.

Advanced practice nurses are prepared to meet the changing needs of the health care system. The emphasis is on critical thinking and the development of knowledge and skills that translate into expert practice. Graduates are equipped for entry into doctoral study.

Eligibility Requirements for Participation in the Nursing Program

Nursing is a practice discipline, with cognitive, sensory, affective, and psychomotor performance requirements. The faculty of the School of Nursing has identified the skills and professional behaviors that are essential to practice as a professional nurse. These are identified as eligibility requirements for participation in the nursing program and are known as Core Performance Standards. These standards are adopted from the Southern Council on Collegiate Education for Nursing (SCCEN) and are congruent with the skills presented in the document entitled *Essentials of Baccalaureate Education for Professional Nursing* (1998), a publication of the American Association of Colleges of Nursing. In order to progress in the nursing curriculum, a student must be capable of performing the duties required of a professional nurse. If these practice standards cannot be achieved by the students, either unassisted or with dependable use of assistive devices, the faculty reserves the right to disenroll the student from clinical courses. Potential students are provided copies of the Core Performance Standards upon request. A copy of the *Essentials of College and University Education for Professional Nursing* is available for review in the Office of the Director of the School of Nursing.

Admission

Applicants to the Master of Science in Nursing program must meet the general UTC Graduate School requirements of graduation from a regionally accredited college or university with at least a 2.5 GPA. In addition, the following admission requirements must be met:

- A baccalaureate degree with a major in nursing from a National League for Nursing or Collegiate Council on Education accredited program.
- Cumulative grade point average of 3.0 on a 4.0 scale in under graduate courses, including completion of three semester hours in elementary statistics and three semester hours in physical assessment.
- Current licensure as a registered nurse in Tennessee or eligibility for a Tennessee license. Tennessee license or multistate privilege to practice is required prior to clinical course work. Clinical course work in other states may require licensure in those states.
- Admission to UTC Graduate School.
- For admission to the Nurse Anesthesia concentration, students must have a minimum of one year of experience as a registered professional nurse in a critical care setting in which they have had the opportunity to develop as independent decision makers, and demonstrate psychomotor skills and the ability to use and interpret advanced monitoring techniques based on a knowledge of physiologic and pharmacologic principles.

Current ACLS and PALS certification is required on program entry.

- For admission to the Family Nurse Practitioner concentration courses, students must have a minimum of one-year experience as a registered professional nurse in which they have had the opportunity to develop as independent decision makers and to demonstrate competency in clinical practice skills. Applicants with less than one year experience as an RN may enroll in core and support courses while gaining the one-year experience requirement.
- Miller Analogies Test (MAT) taken within the past five years and scores provided.
- TOEFL (score 550) is required for all applicants whose native language is not English.
- Recommendations from three individuals familiar with the applicant's academic and clinical ability.
- With the application, resume and a folder containing a discussion of prior professional experience, future career goals, reasons for pursuing graduate study and specific areas of interest.
- A criminal background check may be required for full admission to the MSN program.

Admission to The Graduate School does not guarantee admission to any M.S.N. concentration. Enrollment may be limited, and the number of qualified applicants may exceed the number of students admitted.

Continuation Standards

Continuation in the program is contingent upon satisfactory progress as determined by the School of Nursing graduate program committee and conformity with The Graduate School's continuation standards. Students are required to maintain a cumulative 3.0 grade point average on all course work taken for graduate credit to be eligible for continuation.

Students who receive a "D" or "F" in a graduate course must repeat that course the next time it is offered and attain a grade of "C" or better to continue in the program. This is in addition to maintaining the overall GPA requirements.

All students must maintain current licensure, and CPR certification and other clinical requirements as outlined in the School of Nursing Graduate Handbook during their program of study. Nurse anesthesia students must maintain ACLS and PALS certification while a student.

Changing Concentration

The student who is seeking admission to a different concentration must submit a letter to the graduate coordinator seeking permission to change the concentration. The applicant will submit the following:

1. Rationale for changing concentration.
2. Revised areas of interest.
3. Additional references upon request.

If the change is approved, the grade coordination will notify the Graduate School office.

Admission to Candidacy

Application for admission to candidacy must be filed after the completion of nine hours in residency of graduate study in the major and before completion of more than 18 hours. To be eligible for admission to candidacy, the student must have completed prerequisite and designated courses as required by the School of Nursing and meet the academic criteria of the Graduate School.

The form for admission to candidacy may be obtained from The Graduate School office and on The Graduate School website. Students should refer to this catalog for additional regulations regarding admission to candidacy.

Transfer Credit

Students wishing consideration of transfer credit should submit a request along with copies of course syllabi and coursework prior to admission to candidacy. For additional information, see page 24.

Comprehensive Examination

Nurse anesthesia students must take the Self Evaluation Examination (SEE) in the senior year. An acceptable score must be achieved for program continuation and for graduation. Remediation is required.

Core Course Requirements for All Concentrations in the Master of Science in Nursing (13-16 semester hours)

N500	Conceptual and Theoretical Foundations of Nursing	(3)
N501	Nursing Research with Statistical Applications	(4)
N512	Health Policy, Finance & Economics	(3)
N596	Graduate Seminar	(1)
NURS 599r	Master's Thesis	(5)
or NURS 598r	Professional Project	(2)

Clinical Specialist in Adult Health Nursing

The 36 to 39 semester hour Clinical Nurse Specialist concentration includes core courses in nursing, support course in the sciences and adult health, clinical, nursing course.

Clinical Courses

N504	Advanced Pathophysiology	(3)
N505	Adult Health Nursing I	(4)
N506	Adult Health Nursing II	(4)
N507	Clinical Specialization Practicum and Seminar	(5)
N583	Advanced Health Assessment	(3)
N584	Advanced Health Assessment Lab	(1)

Electives

Students select a minimum of 3 hours from graduate level courses related to their interests and individual programs of study. Choices are determined in consultation with the graduate nursing faculty.

Family Nurse Practitioner Concentration

The 48-51 semester hour Family Nurse Practitioner concentration includes core courses in nursing, support courses in the sciences, and specialty courses in family nursing. An intensive clinical practicum (total 630 clock hours) parallels the didactic courses, thus providing ongoing opportunity for application of theory to clinical practice.

Clinical Courses

N504	Advanced Pathophysiology	(3)
N580	Advanced Pharmacology	(3)
N583	Advanced Health Assessment	(2)
N584	Advanced Health Assessment Lab	(1)
N551	Health Promotion and Disease Prevention in Primary Care	(3)
N552	Primary Care of Children	(3)

N553	Primary Care of Children Practicum	(2)
N554	Primary Care of Adults	(3)
N555	Primary Care of Adults Practicum	(2)
N556	Primary Care of Women	(3)
N557	Primary Care of Women Practicum	(2)
N559r	Family Nurse Practitioner Practicum	(8)

The Family Nurse Practitioner concentration prepares advanced practice nurses to provide primary health and medical care to individuals and families across the life span.

Upon completing the requirements for the Master's of Science in Nursing with concentration in family nurse practitioner, the graduate will be eligible to take a national certification exam. Successful completion of this certification exam allows the professional to use distinguishing credentials.

Nurse Anesthesia Concentration

Note: Applications for this concentration are due by October of each year.

The 59-62 semester hour Nurse Anesthesia concentration includes core courses in nursing, support courses in the sciences, and nurse anesthesia courses.

Clinical Courses

N504	Advanced Pathophysiology	(3)
N542	Adv Anatomy/Physiology Nurse Anesthesia I	(3)
N543	Adv Anatomy/Physiology Nurse Anesthesia II	(3)
N544	Integrated Health Sciences Nurse Anesthesia	(3)
N545	Principles of Nurse Anesthesia - Basic	(3)
N546	Principles of Advanced Nurse Anesthesia Practice I	(2)
N548	Principles of Advanced Nurse Anesthesia Practice II	(2)
N581	Adv Pharmacology for Nurse Anesthesia I	(3)
N583	Advanced Health Assessment	(2)
N584	Advanced Health Assessment Lab	(1)
N580	Pharmacology for Advanced Practice	(3)
N547R	Nurse Anesthesia Practicum and Seminar	(16)
N541	Professional Aspects of Nurse Anesthesia	(2)

The nurse anesthesia concentration can be completed in 27 months, or seven semesters, including summers. The concentration is fully accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs (COA), and the program of study is designed to meet COA standards. The role preparation course, Nursing 547r, is an intensive clinical residency which parallels the didactic courses, thus providing ongoing opportunity for application of theory to clinical practice. Students register for N547r each semester while meeting the American Association of Nurse Anesthetist's Council on Accreditation clinical case requirements. Each student will administer a minimum of 450 anesthetics while accumulating a minimum of 800 clock hours of anesthesia time. (The nurse anesthesia practicum schedule may not follow the academic calendar.)

Upon completing the requirements for the Master of Science in Nursing degree with concentration in nurse anesthesia, the graduate will be eligible to take the national certification exam offered by the Council on Certification of Nurse Anesthetists. Successful completion of this certification exam allows the professional nurse to use the title CRNA.

Nursing Administration Concentration

The 34 to 39 semester hour Nursing Administration concentration has two tracks of study: Students may choose the Health Systems or Nursing Informations specialty.

Concentration Courses for Health Systems

N513 Health Care Information Management I	(2)
N530 Theoretical Foundations for Health Systems Administration	(4)
N531 Advanced Resource Management	(2)
N532 Consulting & Marketing Skills for Advanced Practice Nurses	(3)
N534 Health Systems Practicum for Advanced Practice Nurses	(4)

Elective

N515 Financial Administration for Nurse Executives	(3)
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Concentration Courses for Nursing Informatics

N530 Theoretical Foundations for Health Systems Administration	(4)
N532 Consulting & Marketing Skills for Advanced Practice Nurses	(3)
N533 Introduction to Health Care Informatics Systems	(3)
N534 Health Systems Practicum	(3)
N535 Health Care Information Systems: Analysis and Design	(3)
N536 Healthcare Information Systems: Implementation and Evaluation	(3)
N537r Healthcare Informatics: Application for Advanced Practice	(4)

(Part-time study may also be available.)

Nursing Education Concentration

The 38- 41 semester hour Nursing Education concentration includes support courses in nursing and education essential for the master educator in multiple health care settings.

Concentration Courses:

N520 Education in Health Care Settings	(3)
N521 Education Program Development in Health Care Settings	(3)
N522 Teaching Strategies/Methodologies in Nursing and Health Care	(2)
N523 Teaching Practicum I	(2)
N524 Outcomes Measurement of Teaching Effectiveness in Academic and Health Care Settings	(3)
N525 Teaching Practicum II	(3)

Elective courses:

Nine (9) hours of clinical graduate nursing courses are required.

Graduate Certificate Programs

Post-Master's Anesthesia Nurse Certificate

To provide master's prepared registered nurses the opportunity to add the nurse anesthesia specialty to their practice portfolio with minimum redundancy and maximum opportunity to excel in this clinical practice area.

Thirty hours is the minimum number of hours that can be taken to receive a certificate. It is highly likely that some students will have taken the equivalent of NURS 583 and 584. The maximum number of hours needed to receive a certificate is 46 hours.

Admission Requirements

Must meet entry criteria for admission to the MSN program except for the MAT Requirement. Must provide documentary evidence of a completed master's degree in nursing from a nationally accredited graduate program (official transcript).

Courses

NURS 504 Advanced Pathophysiology	(3)
NURS 541 Professional Aspects of Nurse Anesthesia	(2)
NURS 542 Advanced Anatomy/Physiology Nurse Anesthesia I	(3)
NURS 543 Advanced Anatomy/Physiology Nurse Anesthesia II	(3)
NURS 544 Integrated Sciences for Nurse Anesthesia	(3)
NURS 545 Principles of Nurse Anesthesia - Basic	(3)
NURS 546 Advanced Principles of Nurse Anesthesia I	(2)
NURS 548 Advanced Principles of Nurse Anesthesia II	(2)
NURS 580 Advanced Pharmacology	(3)
NURS 581 Advanced Pharmacology for Nurse Anesthesia I	(3)
NURS 583 Advanced Health Assessment	(2)
NURS 584 Advanced Health Assessment Lab	(1)
NURS 547 Nurse Anesthesia Practicum and seminar	(16)

Post-Master Family Nurse Practitioner Certificate (30)

The School of Nursing offers a post-master's (MSN) to Family Nurse Practitioner (FNP) certification. The program is intended to provide MSN prepared nurses with the course work necessary to take the FNP certification exam.

Admission Requirements

Must meet all entry criteria for admission to the MSN program. Must provide documentary evidence of a completed master's degree in nursing from a nationally accredited graduate program (official transcript)

Courses

NURS 504 Advanced Pathophysiology	(3)
NURS 580 Advanced Pharmacology	(3)
NURS 583 Advanced Health Assessment	(2)
NURS 584 Advanced Health Assessment Lab	(1)
NURS 551 Health Promotion and Illness Prevention in Primary Care	(3)
NURS 552 Primary Care of Children	(3)
NURS 553 Primary Care of Children Practicum	(2)
NURS 554 Primary Care of Adults	(3)
NURS 555 Primary Care of Adults Practicum	(2)
NURS 556 Primary Care of Women	(3)
NURS 557 Primary Care of Women Practicum	(2)
NURS 559 Family Nurse Practitioner Practicum	(3)

Graduate Certificate in Health Care Informatics (17-18)

Admission Requirements

Must meet all entry criteria for admission to the MSN program. Must provide documentary evidence of a completed master's degree in nursing from a nationally accredited graduate program (official transcript). Thesis/professional project requirement waived if similar activity was required in the previous master's program.

Courses

- NURS 513 Introduction to Health Care Information Mgt. (2)
- NURS 535 Health Care Information Systems: Analysis and Design (3)
- NURS 536 Health Care Information Systems Implementation and Evaluation (3)
- NURS 537r Informatics Applications (4)
- NURS 501 Nursing Research with Applied Statistics (4)

OR a Graduate Research Methodologies course (3-4 hours).

This course may be waived for the post-masters Certificate student who has already had this content as a component of the graduate studies.

Students with limited informatics work experience may also elect to take Nursing 534: Health Systems Internship (4 semester hours of practicum) to enhance their work experience within an informatics role. Practicum placement within contract agencies for Certificate students will be only on a space available basis.

Physical Therapy, DPT

Associate Professor Catherine R. Smith, PT, PhD, PCS,
Acting Department Head
(423) 425-5259 or email at Cathie-Smith@utc.edu

The Doctor of Physical Therapy program at UTC is designed to prepare graduates to meet entry-level practice expectations of the physical therapy profession. The curriculum addresses current approaches to the evaluation and management of movement system disorders while simultaneously preparing the graduate to assume a role in prevention, wellness and health promotion. Classroom and clinic-based instruction provide students with the knowledge and skills needed to practice competently in today's dynamic healthcare environment. By integrating current theory and research into all foundational science and applied clinical science courses, the DPT program of study prepares students to develop and implement evidence-based intervention plans leading to outcomes that enhance the movement competencies of clients with disorders of the musculoskeletal, neurological, cardiovascular or integumentary systems.

The program's 3 + 3 structure requires three years of prerequisite coursework followed by three years of full time enrollment in the professional program. Students who are accepted into the professional program must be enrolled on a full-time basis for each of the eight semesters of the physical therapy curriculum. The curriculum combines classroom and laboratory training with independent study and clinical experiences in multiple health care settings. A variety of instructional methods are employed to enable students to develop the essential manual skills and clinical reasoning abilities needed to address the clinical problems of their clients. The coursework is arranged according to a prescribed sequence and schedule that all students must follow.

The DPT program is fully accredited by the Commission on Accreditation in Physical Therapy Education.

Pre-Physical Therapy

Pre-physical therapy students admitted to the program with undergraduate standing must meet all undergraduate admission requirements of the University. The prerequisites for the profes-

sional program for undergraduate students include the general education requirements of the University, which are outlined elsewhere in this catalog. Students who have already earned a bachelor's degree at the time of application to the program are not required to complete the general education requirements of the University unless they choose to earn a second bachelor's degree. Students interested in pursuing physical therapy should seek advisement from the physical therapy faculty by calling the program office (423-425-4747) to schedule an appointment.

Admission to the Professional Physical Therapy Program

Application procedure and admission to the University does not assure acceptance into the physical therapy program. Enrollment is limited, and the number of qualified applicants exceeds the number of students that can be admitted.

Selection by the admissions committee is based upon a number of factors including overall GPA (calculated for all academic courses attempted up to the point of application to the program), GPA for science courses alone (including all biology, chemistry, physics and psychology courses), references and interviews.

Applicants with the best combination of these factors will be selected for the class. Students may apply who have a minimum cumulative GPA and science GPA of 3.0 on a 4.0 grading scale and meet the minimum prerequisite requirements.

Application forms are available on-line at the physical therapy web site: www.utc.edu/physicaltherapy. The completed application packet must be submitted by 5:00 p.m. on the day of the deadline posted on the physical therapy web site.

Applicants are responsible for assuring the completion of the packet prior to the deadline. Following initial review of application materials, invited interviews are conducted, and the decision of the admissions committee is mailed to each applicant. Students are asked to verify their acceptance to the program in writing. Classes begin in late August. Entrance into the program is contingent upon the completion of all prerequisites with a minimum grade of "C."

Undergraduate students who are admitted into the program will be required to apply to and be admitted into the Graduate School at the completion of the first year of the physical therapy program. Upon the successful completion of the first year of the professional program undergraduate students will be granted a bachelor's degree in Rehabilitation Science. Applicants who have previously earned a bachelor's degree from a regionally accredited institution must apply and be admitted to the Graduate School prior to admission to the DPT program.

In order to comply with hospital accreditation (JCAHO) standards, students accepted to the DPT program will be required to undergo a Criminal Background Check. A written report verifying the student applicant has been granted a Level 2 Criminal Background Check clearance must be received in the Physical Therapy office prior to being enrolled in DPT course work. Information about how to obtain an approved Level 2 Background Check clearance report may be found on the Physical Therapy Department website: <http://www.utc.edu/physicaltherapy>

If a student is admitted to the DPT program but declines to accept a position in the class to which he or she has been admitted, the student must reapply to be considered for admission to the program.

Prerequisite Courses

Undergraduates must complete 88 semester hours of course work prior to initiating study within the professional program. Students who have already received a bachelor's degree must complete 49 hours of prerequisite course work. Prerequisite eligibility requirements to apply are as follows:

Block One: Fall Application Deadline

Note: Consult www.utc.edu/physicaltherapy for specific deadline dates.

Undergraduate applicants must complete a minimum of 60 semester hours of the prerequisites by the end of the preceding summer semester to include two English composition courses, two biology courses, one chemistry or physics, one mathematics and one psychology.

Applicants having already earned a bachelor's degree from a regionally-accredited institution and planning to apply through the Graduate Studies division must complete the following prerequisites by the end of the preceding summer semester: two biology courses, one chemistry or physics, one math and one psychology.

Block Two: Spring Application Deadline

Note: Consult www.utc.edu/physicaltherapy for specific deadline dates.

Undergraduate applicants must complete a minimum of 72 semester hours of the prerequisites by the end of the fall semester to include two English compositions, two biology courses, one chemistry, one physics, one mathematics, one psychology and an additional two courses in chemistry, physics or psychology.

Applicants having already earned a degree from a regionally-accredited institution and planning to apply through the Graduate Studies division must complete the following courses by the end of the fall semester: two biology prerequisites, one chemistry, one physics, one math, one psychology and an additional course in any two of the following: chemistry, physics, or psychology.

A total of 15 semester hours of electives are included in the prerequisites. Students are encouraged to select elective coursework that could be applicable to an alternative bachelor's degree in the event that admission to the program is denied.

Applicants who have already earned a bachelor's degree are admitted to the DPT program with graduate standing.

Transfer students should enroll in courses with course descriptions equivalent to the UTC course prerequisites.

Total P. T. Prerequisites Hours for Undergraduates: 88

Total P. T. Prerequisite Hours for Graduate students: 49

Expenses and Transportation

Each student admitted to the program is required to purchase professional liability insurance annually. Additional expenses include laboratory/clinical attire and dissection instruments. Classes are required during the summer semester of both the first and second years of the program. Physical therapy clinical experiences scheduled throughout the academic year require students to provide their own transportation to the clinical sites. Full time clinical experiences are scheduled during the summer semesters of both the first and second years. Students must be financially prepared to meet costs incurred for travel and living expenses in other cities throughout the United States during clinical education courses.

Continuation and Graduation Standards

Practice standards of the physical therapy profession require that graduates be prepared to practice safely and competently within the physical therapy scope of practice. To ensure safe and competent performance by students enrolled in the program, the following continuation standards must be met for students to remain enrolled in the program:

1. To progress in physical therapy, students are required to:
 - a. maintain a 2.0 grade point average for all courses taken at the undergraduate level; students must maintain a 3.0 for all courses taken at the graduate level.
 - b. maintain an active liability insurance policy for clinical courses;
 - c. maintain current CPR certification.
 - d. maintain full clearance of Level 2 Criminal Background Check
2. If in the judgment of the faculty there is reason to question the emotional or physical condition of a student or the safety or quality of physical therapy care provided, the faculty has the right and obligation to exclude the student from the clinical area.
3. Students who fail courses may be denied progression in the program. Students may repeat failed courses only at the discretion of the retention and progression committee or the Department Head of the Physical Therapy Department.

Physical Therapy with Graduate Standing

Students who have already earned a bachelor's degree from a regionally accredited four-year institution are admitted to the DPT program with graduate standing. Students who have not yet earned a bachelor's degree are admitted to the DPT program with undergraduate standing.

Program of study required for students admitted to the DPT program with graduate standing:

Prerequisite courses

Phil 425 or PHYT 305 – 3 hrs (Ethics and the Professions or a comparable medical ethics course); Psy 101 plus an additional Psychology course, 200 level or above – Psy 241 preferred—(6 hrs) ; Bio 121- Principles of Biology I (4 hrs); Bio 191 – Functional Human Anatomy- (4 hrs); Bio 208,209 – Human Physiology/lab (4 hrs); Chem 121/123 – General Chemistry I- (4 hrs); Chem 122/124 – General Chemistry II-or Survey of Organic and Biochemistry- (4 hrs); Phys 103/183 – General Physics I- (4 hrs); Phys 104/184 – General Physics II- (4 hrs); Math 131 –College Algebra- or higher (3 hrs); any approved general education statistics course (3 hrs); EHLS 317 (3 hrs) Exercise physiology - must have lab component; PHYT 302 (2 hrs) Medical Terminology

Total prerequisite hours required for students admitted with graduate standing: 49 credit hours

Professional DPT courses required

Physical Therapy 401, 405, 410, 411, 414, 415/515, 416, 420, 421, 435, 440, 450, 511, 512, 514, 518, 520, 522, 524, 525, 526, 528, 532, 534, 535, 536, 538, 540, 542, 544, 545, 548, 550r, 553, 555, 597r

Program of study must also include 6 credit hours of approved electives; may include approved courses outside the DPT curriculum.

Students admitted to the DPT program with graduate standing take the first year of the professional DPT curriculum courses for graduate credit and must maintain a 3.0 overall GPA in all physical therapy courses.

Minimum grade of C required in all physical therapy courses to continue in the DPT program.

Program of study required for students admitted with undergraduate standing:**Prerequisite courses required****General Education**

Rhetoric and Composition: Two approved courses in rhetoric and composition (6 hours)

Cultures and Civilizations: Option a: Western Humanities I and II (6 hours) and Nonwestern Cultures and Civilizations (3 hours) or option b: World Civilization I, II, III (9 hours)

Humanities and Fine Arts: Two approved humanities and fine arts courses, one from fine arts and one from either (6 hours)

Behavioral and Social Sciences: Option a: Psychology 101, 241 (6 hours) or option b: Psy 101, any 200 level (or higher) Psychology course plus an approved social science (3 hours)

Natural Sciences: Two approved natural science courses, at least one including a laboratory component (7-8 hours)

Mathematics: One approved mathematics course (3 hours)

Statistics: One approved statistics course (3 hours)
Exercise Science, Health and Leisure Studies 021 plus one additional semester exercise science activity.

Major and related courses

6 hours behavioral or social sciences including Psychology 101 and an additional Psychology course, 200 level or higher (Psy 241 preferred)

EHLS 317; Philosophy 425 or PHYT 305; Classics 300 or PHYT 302

34 hours mathematics, natural or applied science courses including Biology 121, 191, 208, 209; Chemistry 121/123, 122/124 or 168; Mathematics 131 or higher, an approved statistics course; Physics 103/183, 104/184

Intensive writing course

Professional DPT courses required

Physical Therapy 401, 405, 410, 411, 414, 415/515, 416, 420, 421, 435, 440, 450, 511, 512, 514, 518, 520, 522, 524, 525, 526, 528, 532, 534, 535, 536, 538, 540, 542, 544, 545, 548, 550r, 553, 555, 597r

Program of study must include 6 credit hours of approved electives; may include approved courses outside the DPT curriculum.

Minimum grade of C required in all physical therapy required courses to continue in the DPT program.

Minimum of 42 hours of 300 and 400 level courses

2.0 average required for all courses taken at the undergraduate level, and 3.0 average in physical therapy courses taken at the graduate level.

Students admitted to the DPT program with undergraduate standing are awarded the BS in Rehabilitation Science after completing the first two semesters of the professional curriculum.

Total hours for BS in Rehabilitation Science: 120 hours

Professional Curriculum Plan:**First Year of the DPT Curriculum****Fall Semester**

PHYT 401	Introduction to Patient/Client Management	2
PHYT 405	Informatics in Physical Therapy	1
PHYT 410	Human Gross Anatomy	6
PHYT 411	Therapeutic Exercise and Health Promotion	3
PHYT 420	Professional Communication and Education	2
PHYT 421	Musculoskeletal Examination	2
		Total hours 16

Spring Semester

PHYT 414	Kinesiology and Biomechanics	2
PHYT 415/515	Neuroscience	5
PHYT 416	Physical Agents	2
PHYT 435	Clinically Applied Orthopedics	1
PHYT 440	Pathology of Musculoskeletal System	2
PHYT 450	PT Management of Musculoskeletal Disorders of the Extremities	4
		Total hours 16

Summer Semester

PHYT 512	PT Management of Musculoskeletal Disorders Of the Spine	4
PHYT 514	Clinical Education I	7
PHYT 518	Electrotherapeutic Modalities	2
PHYT 525	Critical Inquiry	2
		Total hours 15

Second Year of the DPT Curriculum**Fall Semester**

PHYT 511	PT Management of Cardiopulmonary Dysfunction	3
PHYT 525	Critical Inquiry	1
PHYT 526	PT Management of Medical/Surgical Conditions I	3
PHYT 535	Clinical Applications Across the Lifespan	1
PHYT 538	PT Management of Patients/Clients with Neurologic Dysfunction I	4
PHYT 553	Human Growth and Development Across the Life Span	3
		Total hours 15

Spring Semester

PHYT 520	Psychosocial Aspects of Disability	2
PHYT 542	PT Management of Adults and Elders with Neurologic Dysfunction II	3
PHYT 544	PT Management of Infants, Children and Adolescents with Neurologic Dysfunction III	3

PHYT 548	PT Management of Medical/Surgical Conditions II	3
PHYT 550	Research Project	2
		Total hours 13

Summer Semester

PHYT 532	Clinical Education II	6
PHYT 534	Clinical Education III	8
		Total Hours 14

Third Year of the DPT Curriculum**Fall Semester**

PHYT 522	Administration in PT	3
PHYT 528	Gait Analysis	2
PHYT 540	Differential Diagnosis in PT	2
PHYT 550	Research Project	1
PHYT 555	Applied Patient/Client Management	1
ELECTIVES		6
		Total hours 15

Spring Semester

PHYT 536	Clinical Internship	15
PHYT 545	Preparation for Licensure	1
		Total hours 16

Total DPT Professional Program Hours: 120 hours

Psychology, M.S.

Professor Paul Watson, *Acting Head*

(423) 425-4262 or email at Paul-Watson@utc.edu

Professor Michael Biderman, *Coordinator of the Industrial/Organizational Concentration.*

(423) 425-4268 or email at Michael-Biderman@utc.edu

Professor Metzger, *Coordinator of the Research Psychology Concentration.*

(423) 425-5321 or email at Richard-Metzger@utc.edu

The Department of Psychology at The University of Tennessee at Chattanooga offers a Master of Science degree in psychology with specialization in the fields of industrial/organizational and research psychology.

The goal of these programs is to prepare the student to function as a professional in the applied areas. A full-time student in the industrial/organizational specialty will normally take four semesters of academic work, including a practicum in the summer between the first and second year, and may complete a thesis. A student in the research specialty will normally take four semesters of academic work and will complete a master's thesis.

Students in all programs are required to adhere to the American Psychological Association guidelines for ethical conduct, test utilization, and research procedures. Failure to adhere to appropriate ethical codes may result in disciplinary action, including dismissal from the program.

Admission

Applicants who wish to be admitted to the degree program in psychology must meet all general requirements for admission to the UTC Graduate School. Additionally, departmental application materials and scores from the Graduate Record Examination general test must be submitted. All forms are obtained from and must be submitted to the Graduate School Office.

Admission to Candidacy

The application for admission to candidacy should be made after the student has completed in residence 9 semester hours of approved graduate courses (excluding transfer credit and any specified prerequisites). *This application must be filed before completion of more than 18 hours.* The appropriate form may be obtained from the Graduate School Office.

Students should consult with the appropriate program adviser for specific information regarding other departmental requirements for admission to candidacy. General requirements are stated on page 11.

Comprehensive Examinations

Comprehensive examinations are required of all students in the industrial/organizational specialty who do not complete a thesis. Please consult with the appropriate program adviser for specific requirements. General requirements may be found on page 14.

Thesis

A master's thesis option is available in the programs. Completion of a master's thesis is mandatory in the research concentration and optional in the I/O concentration.

Industrial/Organizational Concentration

The goal of the I/O program is to provide students with the training necessary to pursue a variety of I/O related careers. These include, but are not limited to, positions in human resources departments in work organizations (e.g. job analyst, testing specialist, trainer, compensation analyst, organizational development specialist, generalist), and human resource management consulting. In addition, the I/O program can be used as a preparation for the pursuit of doctoral training in I/O or related fields of study. As with any educational program, many graduates have found work in other fields based on some combination of their interests and circumstances.

The fundamental educational philosophy of the program is to train students to think in a logical and critical manner. This skill is useful to anybody in any endeavor. The curriculum is organized around specific core knowledge domains particular to I/O psychology. Two of these, the industrial domain and the organizational domain, are obvious from the program label. The industrial domain includes content such as job analysis, selection, tests and measurements, and training. The organizational domain includes content such as work motivation, organizational development, culture, and conflict management. The third domain, research methodology, includes content such as univariate and multivariate statistical analysis, experimental design, survey research and scale construction.

Students should consult the I/O program web site, www.utc.edu/ioprog, for more information about the program.

Practicum

The integration of course work and practice throughout the students' graduate academic program makes possible the most effective learning to prepare them for applied professional careers in I/O psychology. To achieve this end, I/O students become involved in a variety of real life work organization activities through completion of an extensive practicum program. The practicum is carried out in private and public work organizations in which the students engage in a wide variety of projects under the guidance of field supervisors, coordinated by the I/O faculty. Enrollment in the practicum course in the summer between the first and second year is required.

Thesis

I/O students may, at their option, elect to complete a thesis. This option is particularly valuable for students who are considering the pursuit of a doctoral degree. However, all students are encouraged to seriously consider completing a thesis as this provides excellent experience in formulating and testing hypotheses, in developing critical thinking skills, in preparing a paper that reports the findings, and in providing an in-depth exposure to research literature. These skills are valuable in any area of professional endeavor.

Prerequisites

Students must have had the following four undergraduate courses (or their equivalent) prior to the start of graduate coursework: Introduction to Statistics, Industrial/Organizational Psychology, one additional psychology course, and a computer literacy course. Computer literacy may be demonstrated by evidence of experience working with personal computers. (Note: Lack of these prerequisite courses does not preclude consideration of a student's application. If accepted, students without the requisites may be required to take them prior to beginning graduate coursework or may be allowed to take them in the first semester of the program.)

Program Requirements

Completion of a minimum of 48 hours of graduate coursework is required for graduation. Thirty (30) of these hours are specific required course work, with the remaining 18 hours consisting of approved elective courses. (See the Graduate Catalogue for the policy regarding transfer credit.) Students must also either successfully pass a written comprehensive exam or successfully defend a thesis.

Course Scheduling

A full-time student can complete the degree requirements in four semesters. Part-time students will take longer. All required courses are offered in the evening, permitting working students to attend part-time. Evening classes also permit students to schedule practicum projects during normal business hours.

A typical program of study for a full-time student is given below. Students must complete a personal program of study with the advice of an I/O faculty member during their second semester of course work. All elective courses must be approved by the adviser.

First Year

Fall	Psychology 506	Organizational Psychology
	Psychology 511	Research Methods
		Elective* (e.g. Teaching of Psychology)
Spring	Psychology 512	Human Resource Measurement and Job Analysis
	Psychology 513	Advanced Research Techniques
	Psychology 516	Training
Summer	Psychology 536	Practicum**
		Elective*

Second Year

Fall	Psychology 520	Uses of Groups
	Psychology 527	Human Resources Selection and Appraisal
	Psychology 536	Practicum
		Elective or Thesis
Spring	Psychology 526	Organizational Development
		Elective or Thesis
		Elective*
		Elective*

* I/O students are required to take at least one course labeled PSY 595r or PSY 596r. These courses are in-depth seminars on some topic of general interest in psychology.

Students may take a package of foundation MBA courses as their elective courses.

** I/O students are required to register for 3 hours of practicum credit in the summer following their first year of course work.

Research Concentration

The research concentration is designed for students who wish to pursue graduate study of topics other than I/O or clinical psychology.

Specialty areas related to the interests and backgrounds of primary supervising faculty are offered. A list of current faculty and their research interests is available from the research program coordinator. It is expected that students will choose a specialty area after consultation with the coordinator and individual supervising faculty members. Because of the tutorial nature of the program, students whose interests and abilities closely approximate the areas of interest of the primary supervising faculty will be most able to profit from the program. Students should contact the coordinator of the research concentration for discussion of the specialty areas which are offered.

Students in the program will acquire the variety of statistical and methodological skills required for conducting research in psychology. Opportunities for intensive individual study in the chosen specialty area will be provided. Students will be given research experience under the supervision of a faculty adviser. This research experience will culminate in the preparation of a thesis.

A full-time student can complete the degree in four semesters. Some of the courses are offered in the evening.

The following courses are prerequisite for this degree program:

General Psychology
Introductory Statistics
Research Methods in Psychology

The normal program of courses for the research concentration is listed below. This is a tentative program, which may be modified to suit the needs of the individual student. It is expected that each student will develop a complete program after consultation with a faculty adviser and the coordinator of the program. All elective course choices must be approved by the coordinator and the faculty adviser. All students must complete Psychology 510 and 514. Three seminar courses are required; these seminars are labeled Psychology 595 and 596. Students must take 6 hours of one and 3 hours of the other. In addition, all students must take at least 6 hours of Psychology 599 (thesis).

First Year

Fall	Psychology 510	Applied Research I	3
	Psychology 595r or 596r	Advanced Studies	3
	Psychology 501	Teaching of Psychology	3
Spring	Psychology 514	Applied Research-II	3
	Psychology 595r or 596r	Advanced Studies	3
		Elective	3

Second Year

Fall	Psychology 595r or 596r	Advanced Studies	3
	Psychology 599r	Master's Thesis	3
		Elective	3
Spring	Psychology 599r	Master's Thesis	3
		Elective	3
		Elective	3

Total Semester Hours 36

Courses for Graduate Students Only

Only graduate students admitted to the appropriate program in psychology may register for any of the courses numbered 501 or above; all other graduate students must have written permission of the instructor. A student may not use more than a total of nine hours in any combination of the Psychology 597r and 598r courses toward any one master's degree specialty unless specific approval is given by the student's program director. The student's program director must specifically approve any use of Psychology 599r topics toward completion of a master's degree specialty.

Public Administration, M.P.A.

Professor Fouad Moughrabi, *Head*

(423) 425-4231 or email at Fouad-Moughrabi@utc.edu

Associate Professor Edwards, *Coordinator of Graduate Programs*

(423) 425-4068 or email at David-Edwards@utc.edu

The Department of Political Science, Public Administration and Nonprofit Management at The University of Tennessee at Chattanooga, recognizing the importance of public administration and nonprofit management in the university service area and in society in general, offers a Master of Public Administration degree. The overall goal of the program is to improve public sector and nonprofit administration by preparing highly competent, highly skilled professional administrators for work in applied settings in the community.

To accomplish this goal, the M.P.A. program provides students with a course of study intended to improve written and oral communication, to strengthen analytical skills, and to enhance the students' ability to effectively and ethically manage human, financial, and physical resources.

The program is accredited by the National Association of Schools of Public Affairs and Administration.

Admission

Applicants who wish to be admitted to the M.P.A. degree program must meet all general requirements for admission to The Graduate School of The University of Tennessee at Chattanooga. In addition, the applicant must furnish test scores from the Graduate Record Examination General Test, a supplemental data form, and three letters of recommendation.

To assure full consideration applicants seeking admission for fall semester are encouraged to complete their applications, including GRE scores and letters of recommendation, by July 15 for fall semester admission or by November 15 for spring semester admission.

Program Requirements

This program requires 27 credit hours of core courses, 12 credit hours of elective courses, and a six credit hour public administration internship.

Admission to Candidacy

The application for admission to candidacy should be made after the student has completed 9 semester hours of approved graduate courses, excluding transfer credit and any specific prerequisites. *This application must be filed before completion of more than 18 hours.* Please refer to page 11 for additional regulations regarding admission to candidacy.

M.P.A. Integrative Experience

The National Association of Public Affairs and Administration (NASPAA) accreditation guidelines urge M.P.A. programs to provide students with an integrative experience that weaves the diverse intellectual threads of the curriculum into a whole. The M.P.A. program at UTC has adopted POLS 540 Applications in Public Administration, as the means of meeting that goal. All students must complete POLS 540 as their integrative experience.

Internship

All degree students are required to complete a six credit hour public administration internship. The M.P.A. coordinator may

waive this requirement upon submission by the student of proof of significant supervisory experience in a public or nonprofit agency. Students fulfill the internship requirement by registering for and completing POLS 561 (The M.P.A. Internship).

Core Courses

All M.P.A. students complete 27 semester hours of core courses:

POLS 502	Public Policy Research and Analysis I
POLS 504	Public Policy Research and Analysis II
POLS 512	Organization Theory and Administrative Behavior
POLS 521	Public Administration
POLS 522	Budgeting and Finance
POLS 523	Human Resources Management
POLS 524	Public Policy
POLS 540	Applications in Public Administration
POLS 590	The MPA Paper

Electives

Students must complete 12 credit hours of elective courses identified in consultation with the M.P.A. coordinator.

Nonprofit Management Concentration

MPA students may earn a concentration in Nonprofit Management by choosing four of the seven courses (12 credit hours) listed below to fulfill the elective requirement for the degree.

POLS 534	Executive Process in Public and Nonprofit Agencies
POLS 535	Community Building
POLS 536	Government and Nonprofits
POLS 537	Nonprofit Development
POLS 538	Nonprofit Marketing
POLS 539	Strategic Planning in Nonprofit Organizations
POLS 543	Nonprofit Management

Admission to MPA Graduate Courses

Courses in the Department of Political Science, Public Administration and Nonprofit Management numbered above Political Science 501 are intended for M.P.A. graduate degree students. All other graduate and nondegree students wishing to register for a political science course above the 501 level must have the permission of the MPA coordinator.

Enrollment in elective courses outside the political science curriculum are governed by the respective departments offering the courses in question. Students wishing to register in such courses must meet the registration guidelines and the requirements of the host department. Space in these courses is available at the discretion of the offering department.

Certificate in Nonprofit Management

Courses are offered during the evening and on weekends. Students may enter in either the fall or spring semester.

Applicants must:

- Hold a bachelor's degree
- Have significant related experience
- Demonstrate writing ability by taking a writing proficiency exam

OR

- Hold a master's degree in a relevant discipline from an accredited college or university.

Required Courses

POLS 534	Executive Process in Public and Nonprofit Agencies
POLS 535	Community Building
POLS 536	Government and Nonprofits
POLS 537	Nonprofit Development
POLS 538	Nonprofit Marketing
POLS 539	Strategic Planning in Nonprofit Organizations
POLS 543	Nonprofit Management

Total hours 18**School Leadership, M.Ed.**

Professor Tony Lease, *Coordinator*
 (423) 425-4171 or email at Tony-Lease@utc.edu

The program in school leadership is designed to provide the knowledge and skills specified for the beginning administrator license. It is aligned with the Interstate School Leaders Licensure Consortium (ISLLC) and is consistent with the Policy for the Principal in Tennessee Schools as adopted by the State Board of Education on August 1, 1999. The program is appropriate for aspiring principals, supervisors and for teachers who wish to exercise leadership in their school. The emphasis of the program is instructional leadership. Extensive field experience is required for program completion, however, it is possible to complete these field experiences while employed as a teacher. In addition to the requirements outlined under Requirements for Graduate School and Admission to Candidacy, the candidate will be continually assessed and assisted throughout the program with respect to personal characteristics, leadership behavior, oral and written communication skills, interpersonal skills, judgement decision-making and organizational ability. Upon completion of the master's degree, verification of three years teaching experience, and a passing score on the required state assessment, the program graduate meets the requirements for a Tennessee Beginning Administrator's License.

Admission

Applicants must initially meet admission requirements to the Graduate School and must submit a portfolio to include the following:

- brief description of previous experience in positions of leadership
- an essay on leadership aspirations or a leadership biography
- three letters of academic or professional recommendation
- scores from the Miller Analogies Test or Graduate Record Examination

Portfolios must be submitted by the following dates:

- For fall entry - July 30
- For spring entry - November 30
- For summer entry - April 30

The State of Tennessee requires that applicants to educational leadership programs participate in an assessment of leadership potential and an interview with both academic faculty and professionals in the field.

The interview procedure occurs only three times each year, so applicants are encouraged to begin the process as early as possible. An applicant should contact Dr. Vicki Petzko, Associate Professor of Educational Leadership (425-4542), to establish an appointment for the interview process.

Details on the process for admission to the school leadership program can be obtained from the Graduate School office.

Course Requirements

A minimum of 36 semester hours is required for the degree. Education 501 and 551 are recommended during the first 12 hours of enrollment.

Required Courses:

EDAS 501	Methods of Educational Research	3
EDUC 513	Perspectives on Multiculturalism/Diversity	3
EDUC 516	Introduction to Curriculum	3
EDAS 551	Foundations of Educational Leadership	3
EDAS 552	The Principal as the Instructional Leader	3
EDAS 553	School Management	3
EDAS 563	School Law	3
EDAS 566	Supervision of the Instructional Process	3
EDAS 608	Technology in Education	3
EDAS 579	Practicum I	3
EDAS 580	Practicum II	3
EDAS 590	Capstone	3

Total hours 36**Certificate in School Leadership**

The Graduate Studies Division of the College of Education and Applied Professional Studies offers a School Leadership Certificate Program for post-master's students seeking an endorsement as a school administrator. The certificate program builds on the foundation of courses taken in a previous graduate degree, and focuses on the knowledge and skills required to be an effective school leader. The knowledge and skill areas are based on the Interstate School Leadership Consortium Standards.

Admission to the program is based on the following:

- A. Admission to The Graduate School:
 1. Hold a baccalaureate degree from a regionally accredited institution.
 2. Have a minimum 2.5 undergraduate grade point average.
 3. Submit \$25 application fee
- B. Admission to the Certificate Program
 1. Successful completion of a master's, specialist, or doctoral degree in education from an accredited university.
 2. Two letters of recommendation which speak to the potential of the candidate as a school leader. One must be from someone who will serve as a mentor for the field experience requirement.
 3. An interview with UTC faculty

Core Requirements:

EDAS 552	The Principal as an Instructional Leader	3
EDAS 553	School Management	3
EDAS 563	School Law	3
EDAS 566	Supervision of Instruction	3
EDAS 579	Practicum I*	3
EDAS 580	Practicum II*	3

*Students who successfully complete a professional leadership development program, such as the Public Education Foundation "Leadership Fellows" program, or the Dalton City Schools "Leadership Development Program" may apply to waive one of the Practicum courses. This waiver will be granted only if the leadership development program requires a number of hours equivalent to a Practicum course and if it requires that the student successfully completes a final project.

Additional Requirements:

Most students interested in gaining administrative endorsement have completed the following courses (or their equivalent) in a previous graduate program. A student who has not successfully completed these courses will be required to complete them while enrolled in the Certificate Program.

EDAS 501	Research	3
EDAS 513	Multiculturalism	3
EDAS 516	Curriculum Theory and Design	3
EDAS 551	Foundations of Leadership	3
EDUC 575	Educational Technology	3
EDAS 590/598	Capstone	3
		Total 18

Secondary Education, M.Ed.

Professor Tony Lease, Coordinator

(423) 425-4171 or email at Tony-Lease@utc.edu

The program in secondary education has both a licensure and non-licensure track. The non-licensure track is designed for licensed teachers who wish to deepen their insight, gain additional knowledge, and improve their professional competencies; the licensure track leads to initial teacher licensure. The program and the department are accredited by the Southern Association of Colleges and Schools (SACS), the National Council for the Accreditation of Teacher Education (NCATE), and the Tennessee State Department of Education.

Admission

Candidates must satisfy all university requirements for admission to the UTC Graduate School and must submit appropriate minimum scores on the Praxis I Academic Skills Assessment (2000-2001 required scores: PPST Mathematics 173, PPST Reading 174, PPST Writing 173; CBT Mathematics 318, CBT Reading 321, CBT Writing 319). Information about this test may be obtained from the Certification Office, the UTC Testing Center, or the Graduate School office. In addition, the candidate's overall record is evaluated in terms of his or her potential academic and professional ability to participate in this graduate degree program.

Course Requirements for the Non-Licensure Track

(for licensed teachers)

36 semester credit hours including 12 hours of professional core, 12 additional hours of professional education, and 12 hours of concentration coursework. The student must file for candidacy according to the guidelines set forth in the Graduate Catalog.

Professional Core Coursework:

EDUC 500	Introduction to Inquiry	3
EDUC 501	Quantitative Research	3
OR		
EDUC 504	Quantitative Research	3
EDUC 508	Collaboration & Consultation	3
EDUC 598	Culminating Experience	3

Additional Professional Education Coursework (12)

Four of:

EDUC 510	Ethics and the Teacher	3
EDUC 512	Learning and Education	3
EDUC 513	Perspectives on Multiculturalism and Diversity	3
EDUC 515	Assessment and Learning	3
EDUC 516	Introduction to Curriculum	3
EDUC 517	Strategies for Inclusion	3
EDAS 563	School Law	3
EDUC 575	Educational Technology	3
EDAS 551	Foundation of Educational Leadership	3
EDAS 566	Supervision of Instructional Prowess	3

Concentration Coursework (12)

Concentrations: Art, English, Health Education, History, Inclusion, Instructional Technology, Mathematics, Science and Environmental Studies, Physical Education, Social Sciences, Reading Specialist, Educational Technology, Research/Thesis, Inclusion. Courses are selected in consultation with the advisor to fit individual programs and degree objectives.

Note: A comprehensive examination is required. Three options are available: an oral examination, a written examination, or (with a minimum 3.5 grade point average) Education 598 utilized in lieu of an examination.

Total hours 36

Course Requirements for the Licensure Track

(for those seeking initial teacher licensure)

Thirty-six semester credit hours of graduate coursework are required including 24 hours of professional education, 9 hours of enhanced student teaching (Induction Experience), and 3 hours of Culminating Activity. In addition, students must complete the bridging content coursework identified by the program advisor. The student must file for candidacy according to the guidelines set forth in the Graduate Catalog.

EDUC 500	Introduction to Inquiry	3
EDUC 508	Collaboration & Consultation	3
EDUC 514	Teaching in Diverse Classrooms	3
EDUC 520	Social and Historical Foundations of Education	3
EDUC 521	Human Development Applied to Education	3
EDUC 522	Instructional Planning and Evaluation	3
EDUC 560	Literary Acquisition & Reading Development	3
EDUC 575	Educational Technology	3
*EDUC 596	Induction Experience (student teaching)	9
EDUC 590	Culminating Experience	3

Total hours 36

Note: A comprehensive examination is not required. To complete the program, candidates for licensure must achieve appropriate minimum scores on state-required Praxis II tests.

* May substitute 6 credit hours EDUC 591 plus a 3 credit hour elective.

Additional Requirements

Admission to Teacher Education Program

Admission to Induction Experience

Completion of Leveling (Content) Coursework

Appropriate minimum scores on specified Praxis II tests

Candidates for Teaching Licensure**Admission to Teacher Education Program (TEP)**

Applicants who demonstrate evidence of possessing qualifications and characteristics reasonably expected for entry into the teaching profession will be considered for admission to the teacher education program.

For entry to the TEP, the candidate must meet all current admission standards set by UTC, the State Department of Education, and the College of Education and Applied Professional Studies. A student who has earned a degree or earned credit hours at another institution may be required to enroll in additional courses including the student teaching experience. This is to verify competency in those teaching fields for which initial teacher licensure or endorsement is being requested through a UTC recommendation. Additionally, any student seeking admission to the TEP should confer with a faculty adviser from the College of Education and Applied Professional Studies to ensure that the appropriate coursework and admission requirements have been completed.

To be considered for admission to the TEP*, a graduate student must:

1. File a formal application signed by a College of Education and Applied Professional Studies faculty adviser. Application forms may be obtained from the Teacher Education Program Office in Hunter 214.
2. Earn a minimum 2.5 cumulative grade point average on all courses, a 2.5 in content (bridging) area courses with no grade lower than C, and a 3.0 in graduate education courses.
3. Submit appropriate minimum scores on the PRAXIS I Academic Skills Assessments.
4. File all other appropriate information (essay and resume) and submit an application for an interview.
5. Complete the interview and receive a positive recommendation from the TEP interview committee.
6. Show evidence of reasonable physical fitness, emotional maturity, high moral character, and commitment to professional education. Violations of the honor code or student behavior policies as stated in the *UTC Student Handbook* may be reviewed by the TEP Committee and may impact the final decision regarding admission to the TEP and/or approval for student teaching experiences.

* The final responsibility for satisfying all requirements for official entry in the TEP rests with the student.

Admission to the Induction Experience or Student Teaching

The application for admission to the induction experience/student teaching must be filed in the Student Teaching Office approximately six months preceding the actual experience. If a student plans to complete the induction experience/student teaching during the spring semester of an academic year, the application must be completed and on file no later than September 1 of the preceding year. For the fall semester of an academic year, the application must be completed and on file no later than the preceding March 1. Under special circumstances, policies, procedures, and requirements for admission to the TEP and the induc-

tion experience/student teaching may be waived or revised at the discretion of the dean of the College of Education and Applied Professional Studies after consultation with the head of the academic unit in which the student is seeking a degree and/or endorsement.

Application for the induction experience/student teaching is not contingent upon official admission to the TEP; therefore, a student should file the application to comply with the required deadline dates. However, a student will not be permitted to begin the the induction experience/student teaching until he or she has been admitted to the TEP.

Before gaining official approval for admission to the induction experience/student teaching semester, the student must have fulfilled the following requirements:

1. Gained official admission to the TEP .
2. Completed the induction experience/student teaching application with signature of assigned faculty advisor
3. Satisfactorily completed all professional education and coursework and at least 90 percent of endorsement area coursework.
4. Earned a minimum 2.5 cumulative grade point average on all courses, a 2.5 in content (bridging) courses with no grade lower than C, and a 3.0 in graduate education courses.

Final responsibility for ensuring that all these requirements are fulfilled prior to being admitted to the induction experience/student teaching rests with the student.

Induction Experience/Student Teaching

All education majors will complete an induction experience/student teaching for a full semester of 16 weeks. Placements will include an inner-city and a suburban/rural school environment during the semester. In addition to dual locations, the student will be expected to teach on two distinct grade levels. For example, secondary placements will include a middle school for one-half semester and a high school for the other half.

The induction experience/student teaching is evaluated on a satisfactory/NC basis. A student who does not satisfactorily complete the experience will receive a grade of NC and may have the opportunity to repeat the course.

Students will be grouped in cohorts during the induction experience/student teaching, allowing them to participate in on-site seminars on educational psychology, methods, classroom management, and other topics.

A student is prohibited from enrolling in any other course while completing the induction experience/student teaching unless said course is the final course required in his/her program.

Induction Experience/Student Teaching Orientation

General orientation seminars concerning the induction experience/student teaching and the professional education semester are held for all prospective student teachers during the semester immediately preceding the experience. Candidates are expected to attend these scheduled conferences; non-attendance could delay the induction experience/student teaching semester.

Alternative to Student Teaching

The student teaching or its equivalent is required in any initial licensure program. In the M.Ed. Elementary or Secondary Education: Licensure programs, that requirement is met through the nine-hour Education 596, Induction experience. teachers em-

ployed appropriately may choose the option of the six-hour Education 591 Professional Teaching Experience; this option requires an additional three-hour education elective to complete M.Ed. requirements.

Recommendation for Licensure

The School of Educational Leadership will recommend licensure for only those students who have successfully completed one or more of the UTC initial licensure or additional endorsement programs approved by the Tennessee Department of Education. Application for licensure should be completed during the last week prior to graduation or completion of program. Application forms may be obtained from the Office of Records, 109 Race Hall.

Tennessee state regulations stipulate that the applicant for licensure must be recommended by the designated certifying officer and dean of an approved teacher training institution. To receive this recommendation, the applicant must have fulfilled the following requirements:*

1. Satisfactorily complete the approved teacher preparation program, including student teaching, for the desired area of endorsement.
2. Earn a minimum 2.5 cumulative grade point average on all courses, a 2.5 in content (bridging) courses with no grade lower than C, and a 3.0 in graduate education courses.
3. Achieve appropriate minimum scores on the Praxis II Principles of Learning and Teaching and Subject Assessments/Specialty Area Test.
4. Demonstrate good moral character and freedom from chemical addiction which would impair effectiveness as a teacher.

These criteria apply to undergraduate, post-baccalaureate, and graduate students desiring a licensure recommendation from UTC.

**Under special circumstances, the criteria may be modified or revised at the discretion of the dean of the College of Education and Applied Professional Studies after consultation with appropriate academic administration.*

The final responsibility for satisfying each and all of these requirements for licensure recommendation by UTC rests with the individual applicant.

A student is considered to have completed UTC's teacher preparation program when he or she has fulfilled all coursework requirements, been awarded the degree appropriate to the program, and met Tennessee standards for the Praxis II tests for his licensure area.

A candidate who anticipates teaching outside Tennessee is strongly encouraged to request information about licensure requirements from the Department of Education Office of Teacher Licensing for the state in which he or she plans to teach. Course and competency requirements to satisfy out-of-state licensure standards may be in addition to Tennessee licensure requirements and UTC approved degree requirements.

Graduation from a UTC master's degree program alone does not guarantee licensure. All requirements of the particular state awarding the license must be fulfilled also.

Application for Teacher Licensure

An application for initial teacher licensure or adding an endorsement may be obtained from the Office of Records, 109 Race Hall.

UTC does not guarantee that satisfactory completion of a program listed in the UTC *Catalog* upon a student's initial ad-

mission to the University will meet all the licensure requirements at the time the person completes his program. This means that UTC will recommend only those applicants who have met all the requirements effective at the time of recommendation.

In view of this, a student or any other person seeking teacher licensure or endorsement recommendation from UTC is strongly encouraged to confer with the appropriate faculty advisor(s) within the College of Education and Applied Professional Studies as soon as possible to gain faculty assistance in planning course schedules and to learn of the requirements effective at that time or at the projected date of the applicant's program completion.

Applications for licensure in Tennessee and Georgia are available in the UTC Records Office. Applications for licensure in other states should be requested from the respective State Departments of Education.

Questions about any of the above-mentioned requirements should be referred to the appropriate department head and to the certification officer.

Certification Office

The Certification Office is primarily responsible for processing applications for initial Tennessee licensure. The Certification Office will also provide assistance in processing applications to states other than Tennessee. However, the applicant has the responsibility for obtaining the application and completing it, except for signatory approval of UTC.

Course Requirements for the Alternative to Student Teaching Track:

EDUC 500	Introduction to Inquiry	3
EDUC 508	Collaboration & Consultation	3
EDUC 514	Teaching in Diverse Classrooms	3
EDUC 520	Social & Historical Foundations of Education	3
EDUC 521	Human Development Applied to Education	3
EDUC 522	Instructional Planning & Evaluation	3
EDUC 560	Literacy Acquisition & Reading Development	3
EDUC 575	Educational Technology	3
EDUC 591	Professional Teaching Experience	6
EDUC 590	Culminating Experience	3
	Elective	<u>3</u>
Total Credit Hours:		36

Special Education, M.Ed.

Professor Lease, *Coordinator*

(423) 425-4171 or email at Tony-Lease@utc.edu

The program in special education provides advanced training to individuals engaged in or seeking careers as teachers in a variety of public school settings from preschool through adult. Students may obtain initial teacher licensure in special education or add an endorsement in that field. Teachers who already hold special education licensure may pursue the program to gain additional knowledge and improve their professional competencies. Graduates of the program will also be prepared for employment in numerous related agencies that provide services to persons with disabilities. The program consists of a basic core and concentration in one of five areas of specialization.

Admission

Before being admitted to the master's program, candidates must satisfy all university requirements for admission to the UTC Graduate School, provide an acceptable score on the Praxis I Academic Skills Assessment or the Graduate Record Examination (GRE), and provide two letters of recommendation from instructors and/or previous employers. Applications will be reviewed by the Graduate Studies Department Head.

A candidate without teaching licensure who wishes to be licensed in special education will have additional coursework to complete based upon the current licensure requirements of the state(s) in which endorsement is sought. Prerequisite or additional courses needed by the student will be prescribed by the adviser with the approval of the UTC Certification Officer. These courses may not carry graduate credit.

At the discretion of the Graduate Studies Department Head, provisional admission may be granted to applicants who do not meet the criteria for regular admission into the program. Students who hold provisional status are expected to meet all requirements for regular admission by the conclusion of their first academic year at UTC.

Course Requirements

A minimum of 36 semester credit hours is required for the degree; this consists of a core of 24 hours and a concentration of 12-18 hours. Students seeking special education licensure will require additional coursework. Students seeking initial teacher licensure must complete EDUC 445 (Enhanced Student Teaching) or its equivalent; in addition, they must be admitted to the Teacher Education Program, be admitted to student teaching and submit appropriate minimum scores on specific Praxis II tests.

Students must file for candidacy according to the guidelines set forth in the Graduate Catalog after having completed EDUC 501 and EPSY 505.

Core Coursework: (24 hours)

EDUC 501	Quantitative Research	3
EPSY 505	Foundations of Services to Exceptional Learners	3
EDSP 506	Program Design and Curriculum Strategies for the Exceptional Learner	3
EPSY 507	Advanced Techniques of Individual Assessment	3
EDUC 508	Collaboration and Consultation	3
EDSP 509	Advanced Instructional Technology	3
EDSP 570	Seminar: Contemporary Issues and Independent Research	3
Elective	An appropriate graduate level course selected with approval of adviser	3

After consultation with an adviser, the student will select a concentration in one of the following areas. Several of the concentrations lead to a particular special education endorsement or will allow students to meet a work standard for teaching in the area of concentration. All coursework required for all concentrations is not offered each year.

Concentrations: (12-18 hours)**Mild Disabilities**

EDSP 515	Characteristics and Current Issues in Mild Disabilities	3
EDSP 516	Assessment Strategies for Individuals with Mild Disabilities	3
EDSP 517	Strategies for Inclusion	3
EDSP 566	Field Placement Practicum	3-6

Moderate/Severe Disabilities

EDSP 525	Characteristics and Current Issues in Moderate/Severe Disabilities	3
EDSP 526	Assessment Strategies for Individuals with Moderate/Severe Disabilities	3
EDSP 527	Instructional Strategies and Programs: Moderate/Severe Disabilities	3
EDSP 565	Clinical Practicum in Special Education <i>and/or</i>	
EDSP 566	Field Placement Practicum	3-6

Emotional/Behavioral Disabilities

EDSP 535	Characteristics and Current Issues in Emotional/Behavioral Disabilities	3
EPSY 536	Affective and Behavioral Assessment Techniques	3
EDSP 537	Instructional Strategies and Programs: Emotional/Behavioral Disabilities	3
EDSP 566	Field Placement Practicum	3-6

Early Childhood Special Education

EDSP 545	Characteristics and Current Issues Related to the Development of Infants and Young Children with Special Needs	3
EDSP 546	Assessment of Infants and Young Children with Special Needs	3
EDSP 547	Intervention Issues and Practices with Infants and Young Children with Special Needs	3
EDSP 548	Families of Children with Special Needs	3
EDSP 566	Field Placement Practicum	3-6

Gifted Education

EDSP 555	Characteristics and Current Issues in Gifted Education	3
EDSP 556	Assessment Strategies in Gifted Education	3
EDSP 557	Instructional Strategies and Programs: Gifted Education	3
EDSP 566	Field Placement Practicum	3-6

Exceptions to Concentrations

Exceptions may be made to the above degree concentrations; a minimum of 36 semester credit hours is required. Students who seek an exception to a concentration should contact the adviser. The special education faculty will determine the acceptability of the exception.

Note: a comprehensive examination is not required. To complete the program, candidates for licensure must achieve appropriate minimum scores on state-required Praxis II tests.

Course Descriptions

Accounting (BACC)

500 Independent Study in Business Administration (1-3)

531 Advanced Managerial Accounting and Control (3)

A discussion of accounting data in managerial decisions. Decision models include those dealing with pricing, product combinations, and capital budgeting. Also issues such as transfer pricing and performance evaluations are covered. *Prerequisite: BACC 305.*

532 Income Taxation and Business Decisions (3)

Practices and guidelines which underlie the determination and timing of the tax liabilities of businesses, with particular emphasis on the different types of business entities and on employee compensation and benefits. Credit not allowed for master of accountancy degree. *Prerequisite: BACC 572.*

536 Accounting Information Systems (3)

Analysis, design and implementation of computer-based accounting information systems as used for planning, control and evaluation of business functional activities. Includes accounting information cycles. *Prerequisite: BACC 408 or permission of instructor.*

538 Current Topics in Accounting (3)

Examination on current topics in financial accounting, managerial accounting, capital budgeting, and nonprofit accounting emphasizing the role of accounting reports as an information source to managers and financial markets.

542 Tax Research and Advanced Tax Topics(3)

Tax planning for businesses, employees or owners with additional emphasis in researching tax law to aid in the planning process. *Prerequisite: BACC 411.*

547 Financial Accounting Theory and Issues (3)

This course provides to the student the knowledge to understand the concepts used in the preparation of the statement of income, the statement of financial position, and the statement of cash flows and a survey of contemporary topics which might affect the use of financial statements. *Prerequisite: BACC 302.*

552 Advanced Auditing (3)

The course involves an in-depth analysis of advanced topics with special attention given to the expanded body of professional standards. Application of theoretical concepts to complex and emerging problems in auditing. *Prerequisite: BACC 405.*

561 Seminar in Business Law (3)

This seminar explores selected topical issues in business law. Areas of coverage include the law business organizations, securities regulation, international law, creditor/debtor relationships, liability of accountants, lender liability, as well as selected issues in contract and property law. *Prerequisite: BACC 336 or permission of instructor.*

572 Foundations of Accounting (3)

The objective of the course is to provide students with a thorough exposure to the basic issues of financial and managerial accounting. This course provides to the students the knowledge to understand the concepts used in the preparation of the statement of income, the statement of financial position, and the statement of cash flows and a survey of contemporary financial and managerial topics that might affect the use of financial information. Every semester.

585 Managerial Accounting (3)

The purpose of this course is to introduce the MBA student to the latest theory and application of the accounting function to the decision-making and control function in a modern organization. The course will be structured around a framework based on opportunity cost analysis and modern organizational theory. Every semester. *Pre-requisite: BACC 572*

589 Accounting Policy (3)

The course covers the functions of accounting and requires the integration of subject matter studied the other core courses in managerial and financial accounting, systems, auditing and taxation. The student must demonstrate his/her ability to recognize analyze and solve accounting policy problems. *Prerequisites: BACC 531, 536, 542, 547, 552 or Corequisite with previously mentioned prerequisite.*

597r Individual Studies (2-4)

Designed to enable students to study selected topics in depth. Requires written outline of work to be done, a statement describing the competencies to be developed and the method of assessment to be used in evaluation. *Prerequisites: approval of adviser and the Graduate Committee in Business.*

598r Research (3)

Designed to enable students to conduct independent research. *Prerequisites: admission to candidacy, approval of adviser and the Graduate Committee in Business and submission of a formal prospectus two weeks prior to registration.*

Anthropology (ANTH)

501r Special Topics in Anthropology (3)

Graduate level course stressing research in a special area, such as industrial archaeology, linguistics, cultural variations, etc. *Prerequisite: appropriate undergraduate courses or permission of instructor.*

400-Level Courses That May Be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

- 410 Culture and Personality (3)
- 412 Forensic Anthropology (3)
- 440 Social and Cultural Change (3)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Art (ART)

The Art Department reserves the right to keep one example of the work of each student in each course.

501r Special Topics in Art (3)**400-level Courses That May be Taken for Graduate Credit**

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more

thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

- 405, 406 Drawing V, VI (3)
- 407, 408 Painting V, VI (3)
- 409, Senior Studio in Painting and/or Drawing (3)
- 414 Major Trends in American Art (3)
- 437, 438 Three Dimensional Studio III IV, (3,3)
- 439 Advanced Three Dimensional Studio (3)
- 440 Senior Studio In Sculpture (3)
- 465, 466 Problem Solving in Graphic Design (3,3)
- 471 Advanced Typography (3)
- 490r Seminar in Art Education (3)
- 495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Biology (BIOL)

500r General Biology for Teachers (3-4)

An in-depth review of general biology primarily for junior high school and high school teachers. Designed to give a depth of understanding and experience with the principles and underlying content of biology.

501r Current Issues in Biology (3)

Recent developments in different areas of biology are discussed. *Prerequisite: permission of instructor.*

520r Physiology (Advanced Topics) (3-4)

A study of selected topics in physiology. Topics will be selected from such areas as cellular physiology, photobiology, physiology of vertebrates and invertebrates, and neurophysiology. May be repeated when the topics differ.

530r Population Interaction (Advanced Topics) (3-4)

A study of selected topics of population interactions. Topics will be selected from such areas as population group properties, population age distributions properties, population regulation, dispersal and dispersion patterns, and energy transfer in living systems. May be repeated when the topics differ.

532 Toxicology (3)

Acute and chronic effects of toxic substances and residues on organisms. Environmental exposures and controls.

540r Organismic Biology (Advanced Topics) (3-4)

A study of advanced topics in organismic biology concerning a specific plant or animal group. Such groups might include procaryota, fungi, angiosperms, protozoa, helminths, arthropods, or selected classes of vertebrates. May be repeated when the topics differ.

542 Environmental Physiology (3)

Effects of air pollutants, water pollutants, and general environmental factors such as heat, light, sound, stress and activity upon the functions of the human respiratory, nervous, blood and excretory systems.

550r Microbiology (Advanced Topics) (3-4)

A study of selected topics in microbiology. Topics will be selected from such areas as structure and function of the prokaryotic cell, food microbiology, industrial microbiology, soil microbiology, pathogenic microbiology, microbial metabolism, immunology, and virology. May be repeated when the topics differ.

560r Genetics and Development (Advanced Topics) (3-4)

A study of selected topics in genetics and development. Areas of genetics from which topics might be selected include human, agricultural, developmental, microbial, molecular, population, and extrachromosomal inheritance. Areas of development from which topics will be selected include regeneration, cellular association, embryology of flowering plants, and control of basic processes of development. May be repeated when the topics differ.

570r Seminar (1)

Presentation of programs of current biological interest by students, faculty, and visiting speakers. Each student will be required to present or take part in discussion of a topic each week. May be repeated. Maximum three hours credit towards degree.

580r Special Problems (3-4)

Individual special problems are designed to offer the nonthesis student experience in research or to offer an opportunity for the thesis student to investigate problems not specifically associated with the thesis. *Prerequisite: approval of instructor.*

400-Level Courses That May be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

- 408 Parasites of Man (3)
- 412 Immunology and Virology (3)
- 416 Biogeography (3)
- 420 Molecular Genetics (3)
- 425 Developmental Biology (3)
- 450 Systematics (3)
- 456 Ichthyology (3)
- 457 Mammalogy (3)
- 463 Endocrinology (3)
- 494r Biology Seminar (1)
- 496r Biological Techniques (1)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Courses at Affiliated Institutions

Students are urged to consider attendance at one of the two institutions affiliated with UTC's Department of Biology offering field course experience in the life sciences: Gulf Coast Research Laboratory, Ocean Springs, Mississippi, offering courses in marine biology and Highland Biological Field Station, Highlands, North Carolina, a field station offering education research opportunities in field biology.

Courses available at Gulf Coast Research Laboratory, Ocean Springs, Mississippi

- 431 Marine Science for Teachers I: Basic Techniques (3)
- 441 Salt Marsh Ecology (4)
- 442 Marine Fisheries Management (4)
- 452 Marine Microbiology (6)
- 460 Marine Ecology (5)
- 464 Aquaculture (6)

Business Administration (BUSA)

Business Administration consists of courses and programs which are offered to all students regardless of major or department. These courses are intended to enhance students' opportunities to understand business and its environment and to provide opportunities to participate in a business practicum. General Business Administration is not a degree program. Courses in this category are designated as BUSA for "Business Administration."

Business Courses for Graduate Students Only (BUSA)**569 Health Services Accounting and Finance (3)**

This course is designed to build upon basic finance theories, concepts, and tools by applying them to the health services sector. This course provides an introduction to the accounting systems used by health services providers to report their economic performance and financial position to external users. It also provides an introduction to the systems designed to collect and analyze information for internal decision making and control purposes. Students will gain an understanding of basic financial theories related to capital acquisition analysis and capital and debt formation. *Prerequisites: BFIN 573.*

581 Small Business/Entrepreneurship (3)

This course introduces students to small business and entrepreneurship and includes coverage of the functional areas of business as they relate to small business management. The focus is on the integration of strategic and operational topics in understanding small business issues. The class uses the case method approach combined with readings and discussion to introduce students to key topics. The final project will reinforce the students' business plan and strategy. *Prerequisites: BMGT 584 & BACC 585.*

587 Strategic Management (3)

This course will provide a realistic hands-on experience that will synthesize the information from previous courses in crafting business strategy, making business decisions, and being responsible for the financial performance of a simulated business entity. In addition, this course is designed to investigate strategy and its integrative role in management. Concepts, models, and skills for developing strategies will be covered with a focus on how to create and sustain competitive advantage in a dynamic and global environment. The business environment created by the computer simulation will allow the student to apply skills in running a

company in head-to-head competition with other student run companies. *Prerequisites:* BFIN 582, BMGT 583, BMGT 584, BACC 585, and BMKT 586.

Co-requisite: BUSA 581.

Chemistry (CHEM)

Courses for Graduate Students Only

501r Advanced Special Topics in Chemistry (3)

Primarily for teachers in M.Ed. program. May be repeated for maximum credit of six hours.

512 Environmental Chemistry (3)

A study of chemical systems of the environment from the perspective of equilibrium, kinetics, stoichiometry and thermodynamics. Case studies will be examined.

516 Hazardous and Toxic Wastes (3)

A survey of the nature of chemical, nuclear, and biological waste materials including strategies for disposal, detoxification, and reuse. Legal aspects of waste disposal are discussed.

400-Level Courses That May be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

426 Chemistry in Industry (2)

434 Advanced Inorganic Chemistry (4)

443 Instrumental Analysis (4)

453 Advanced Organic Chemistry (4)

466 Biochemistry (3)

475 Polymer Chemistry (2)

486r Seminar (1)

496r Industrial Research (2)

497r Research (2)

498 Individual Studies (1-4)

499r Group Studies (1-4)

Communication (COMM)

400-Level Courses That May Be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

400r Special Topics

410 Public Communication and Environmental Issues

420 Senior Seminar

451 Mass Communication Law and Ethics

465 Advertising Campaign

470 Public Relations Campaign

480 Directed Project (3)

485r Individual Internship (6)

497r Research (1-4)

498r Individual Studies (1-4)

499r Group Studies (1-4)

Computational Engineering (ENCM)

501 Introduction to Computational Fluid Dynamics (3)

Elementary aspects of computational fluid dynamics (CFD); review of applicable numerical analysis techniques and fluid dynamics equations; use of model equations; development of basic numerical schemes; obtaining and interpreting numerical solutions to selected equation sets pertinent to the development and use of modern CFD methodologies. *Prerequisites:* Graduate standing with major in Engineering, Mathematics, Physics, or Computer Science, and consent of instructor.

510 Computational Fluid Dynamics I (3)

Review of integral and differential form of fluid dynamic equations; transformation from Cartesian to general curvilinear coordinates; review of relevant numerical analysis; development of various numerical schemes as applied to model equations; introduction to development of finite difference and finite volume methods for addressing time-dependent, multi-dimensional, compressible, inviscid (Euler) and viscous (Navier-Stokes) flow fields; introduction to computational boundary conditions; relevant literature. *Prerequisites:* Consent of instructor.

516 Grid Generation (3)

Approaches to computational geometry and grid generation; boundary conforming structured grids; unstructured grid systems; data structures; grid transformations; distribution functions; surface grid generation; solution of example grid-generation problems using existing software. *Prerequisites:* Consent of instructor.

521 Introduction to Parallel Algorithms (3)

Introduction to parallel and distributed computing; models of parallel computers; parallel programming models; network topologies; performance metrics; theoretical evaluation of algorithms; implementation of candidate algorithms on sample distributed memory and shared memory architectures; background for practical implementation of new algorithms on parallel architectures. *Prerequisites:* Consent of instructor. *Basic knowledge of C or FORTRAN in a UNIX environment is highly recommended.*

710 Computational Fluid Dynamics II (3)

Advanced topics in CFD solution algorithms; systems of conservation laws; characteristic-based inviscid flux formulations; viscous flux approximations; eigensystems for numerical flux computation; boundary conditions; iterative implicit algorithms for unsteady and steady problems.

723 Parallel Scientific Supercomputing (3)

Introduction of scientific supercomputing for large, computationally complex simulation problems using parallel computers; parallel performance metrics and evaluation; scalability; parallel algorithms and scalable programming for complex field problems; emphasis on distributed memory machines using message passing. *Prerequisites: 521 or equivalent, Mathematics 545, 567 or equivalent, or consent of instructor. Basic ability to design, implement, debug and validate code in a UNIX environment using Fortran, C or C++ is highly recommended.*

731 Computational Design (3)

Concepts of design optimization, including mathematical programming methods for unconstrained and constrained optimization problems; Derivation of discrete and variational sensitivity analysis techniques for direct and adjoint formulations for gradient computations; practical experience in using optimization programs with design applications; Emphasis on optimization problems where systems of partial differential equations are included as constraints (as in fluid and structural mechanics), and on problems involving shape optimization. *Prerequisites: Mathematics 567 or equivalent, and consent of instructor. An understanding of basic optimization techniques is also recommended.*

734 Viscous Flow Computation (3)

Computational methods for the laminar and turbulent boundary layer equations; introduction to stability and transition; physical and mathematical description of turbulent mean flows; turbulence modeling; introduction to computational methods for the Navier-Stokes equations. *Prerequisites: Engineering 534 or equivalent, and consent of instructor.*

799 Research and Dissertation (1-9)

Doctoral research. Preparation and defense of doctoral dissertation.

Computer Science (CPSC)

500 Fundamentals of Computer Science (3)

A foundation course presenting the material covered in Fundamentals of Computer Science I (150) and Data Structures and Program Design (160) at an accelerated rate. Graded satisfactory or no credit. *Prerequisites: MATH 151/152 and 161/162, or equivalents. Credit not applied to M.S. Computer Science degree.*

501 Structuring Programs and Data (3)

A foundation course presenting the material covered in Data Structures (312) and Software Design and Development (261) at an accelerated rate. Graded satisfactory or no credit. *Prerequisites: CPSC 500 and MATH 303 or equivalents. Credit not applied to M.S. Computer Science degree.*

502 Computing Systems (3)

A foundation course presenting the material covered in Digital Logic and Introduction to Computer Hardware (305) and Introduction to Operating Systems (251) at an accelerated rate. Graded satisfactory or no credit. *Prerequisite: CPSC 500 or equivalent. Credit not applied to M.S. Computer Science degree.*

503 Systems Programming (3)

A foundation course presenting the material covered in Computer System Organization and Assembly Language Programming (306) and Systems Programming (351) at an accelerated rate. Graded satisfactory or no credit. *Prerequisite: CPSC 502 or equivalent. Credit not applied to M.S. Computer Science degree.*

510 Theory of Computer Programming Languages (3)

Theory and design of computer language systems including the formal theory of syntax, semantics of algorithmic languages, language classification, and a survey of procedure and problem oriented computer programming languages. *Prerequisites: CPSC 503 or equivalent and knowledge of two high level languages.*

515 Advanced Data Base Systems (3)

An in-depth investigation of both relational and distributed database management systems including approaches to distributed query processing, concurrence control, and data-base reliability. *Prerequisites: CPSC 435 and MATH 303 or equivalents.*

520 Software Project Management (3)

Analysis and design of projects including implementation, justification, personnel and resources allocation, management using project scheduling. *Prerequisite: CPSC 501 or equivalent.*

526 Client-Server Systems (3)

The design of digital computer networks. Topics covered include the theory, design, engineering, installation, and performance analysis of networks to connect digital computers. The course will prepare students to plan, implement, and evaluate a network. Also includes peer-to-peer networks, the client-server model, network operating systems, and an introduction to wide-area networks. The network and implementation tools may vary to meet current development trends. *Prerequisites: CPSC 502 and 503 or equivalents.*

530 Compiler System Design (3)

A study of compilers and their relationships with their host computer systems, including the design of compilers themselves, the format of object programs, the nature of run time or object support systems, and the specific phases and techniques for implementation of compilers including scanning, lexical analysis, parsing, storage assignment, code generation, and error handling. *Prerequisites: CPSC 502 and 503 and MATH 303 or equivalents.*

532 Advanced Topics in Systems Software (3)

Current topics drawn from the areas of modern operating systems, parallel software, and distributed computing systems. Topics covered may include the theory, design, programming, security, and performance analysis of particular computer systems software. *Prerequisites: CPSC 502 and 503 or equivalents.*

533 Advanced Computer Architecture (3)

An advanced course in computer architecture. Topics may include classical uniprocessor architecture, parallel processing architectures, computer arithmetic, instruction sets, control unit design, instruction and arithmetic pipelines, CISC, RISC, superscalar and superpipelined architectures, memory hierarchies, cache and virtual memory mechanisms, and I/O operations. *Prerequisites: CPSC 502 and 503 or equivalents.*

535 Microcomputer Systems Architecture (3)

A study of representative microprocessor-based computer systems including basic concepts, software, architecture, programming, memory, interfacing and system design. *Prerequisite: CPSC 533 or equivalent.*

536 Computer Data Communications (3)

The study of data communication networks including characteristics of common carrier facilities, encoding and line conditioning techniques for transmission and error control and line and com-

puter interfaces, security and remote processing. *Prerequisites: CPSC 533 and MATH 307 or ENGR 222, or ENEE 473, or equivalent.*

537 Internetworking (3)

Coverage includes high speed Ethernets; switching at layers 2, 3, and 4; routing and routing protocols; access and congestion control; routing and security; the next generation Internet; emerging multicast protocols; performance evaluation and networking tools. The course will prepare students to design, plan, implement, and evaluate interconnections between networks. The networks and implementation tools may vary to meet current development trends. *Prerequisites: CPSC 426 or 526 and CPSC 536 or permission of instructor.*

538 Real-Time Embedded Systems (3)

Microcontroller systems architecture, I/O programming concepts, advanced real-time signal interfacing techniques, real-time realization of digital signal processing and filtering techniques. Projects included. *Prerequisites: CPSC 502 and 503 or equivalents.*

540 Design of Distributed Systems (3)

The design of information systems which provide services using client/server computing over a network. Topics covered include design methodologies, implementation languages and tools, performance evaluation, and security. The network and implementation tools may vary to meet current development trends. *Prerequisite: CPSC 501 or equivalent.*

541 Design of Web Interfaces (3)

This course will cover the principles of human interaction with computers, with application to the design of Web interfaces. Basic user interface principles, client-side scripting, server-side scripting, Java and Java toolkits. *Prerequisite: CPSC 440 or 540.*

542 Structured Data Exchange (3)

Survey of XML and the applications of XML. Coverage includes the XML document structure, Document Type Definitions, Extensible Stylesheet Language, how DTDs and XML schemas can be used to frame data and connect XML documents and the information they access, and data connection objects. The languages and implementation tools may vary to meet current development trends. *Prerequisites: CPSC 440 or 540 and CPSC 541 or permission of instructor.*

544 Computer Network Security (3)

This course is a study of key security issues and procedures in computer and mobile communication networks. Among the issues to be discussed are: the security of LANs, WANs, databases, and network operating systems; threats to computer networks through exploitation of network infrastructure design weaknesses; security flaws in the network infrastructure protocols; security of content in computer network services; risk assessment and security policies; and security in mobile communication networks. Procedures will include: network intrusion detection and forensics technologies, cryptographic and authentication systems, capability and access control mechanisms, and new developments in Internet routing and transport protocols, secure mail, directory, and multimedia multicast services. Current trends and research in security policies and technologies will also be discussed. *Prerequisite: CPSC 426 or 526 or permission of instructor.*

546 User Interface Development (3)

User interface design requirements; special user requirements; device types; dialog types and interaction types; empirical evalu-

ation of user interfaces; the use of predictive modeling; interface design and implementation tools; examples. *Prerequisites: CPSC 420, and CPSC 450 or 520.*

548 Computer Forensics (3)

This course examines procedures for identification, preservation, and extraction of electronic evidence. Auditing and investigation of network and host system intrusions, analysis and documentation of information gathered, and preparation of expert testimonial evidence will also be covered. Also, forensic tools and resources for system administrators and information system security officers will be explored. *Prerequisites: CPSC 502 and 503 or equivalents.*

550 Design and Analysis of Computer Algorithms (3)

Algorithm design techniques including divide and conquer, greedy method, dynamic programming, search and traversal, backtracking, branch and bound, graph algorithms. Introduction to the theory of NP-completeness and to methods of coping with NP-complete problems. Introduction to parallel algorithms. *Prerequisite: CPSC 501 or equivalent.*

560 Advanced Computer Graphics (3)

Advanced topics in computer graphics including interactive graphic displays, digitizing and data base management for graphics devices and display processors. *Prerequisites: CPSC 420 and MATH 255 or equivalents.*

570 Model Analysis and Simulation (3)

Advanced topics in simulation methodology, including design of simulation experiments, variance reduction techniques, estimation procedures, validation and analysis of simulation results; queuing systems; simulation implementation with GASP; continuous system modeling with CSMP. *Prerequisites: CPSC 430, and MATH 307 or ENGR 222, or equivalents.*

575 Programming with SAS (3)

Report generation, data management and data analysis using SAS and other data management utilities. *Prerequisite: CPSC 501 or equivalent.*

580 Introduction to Machine Learning (3)

Artificial Intelligence based algorithms and applications related to both supervised and unsupervised learning as implemented in software systems. Algorithms include neural networks, Bayesian networks, decision trees, and Genetic Algorithms. Applications include forecasting, planning, classification and other current topics. *Prerequisites: CPSC 502 and 503 or equivalents.*

581 Advanced Topics in Artificial Intelligence (3)

A selection from topics of current research interest in the area of artificial intelligence and knowledge-based systems. Topics covered may vary, but are drawn from such areas as natural language translation, knowledge representation, search and control strategies, intelligent tutoring systems, expert systems and diagnostic systems, and the construction of knowledge-based tools. *Prerequisites: CPSC 580 and MATH 303 or equivalents.*

590 Project (3)

A detailed study and formal report of a computer science topic, normally performed during the last term of work toward the degree. *Prerequisite: approval of Computer Science Graduate Coordinator.*

591r Special Topics (1-3)

Selected advanced problems of current interest. Ordinarily topics will cover those not available in other graduate courses. May be repeated. Maximum of six hours applied to degree. *Prerequisite: approval of instructor.*

592r Graduate Internship in Computer Science (1)

Supervised professional experience in industry at the graduate level. This course provides the structure and focus for a graduate intern field assignment, ensuring that the internship experience is appropriate and consistent with the student's course of study and professional development. May be repeated. Maximum of three hours applied to degree. *Prerequisites: sponsorship by a member of the Computer Science graduate faculty and approval of the Computer Science Graduate Coordinator.*

595r Design Project (1-4)

A detailed study, design, implementation and report of a real world scenario that will integrate material from the courses required in the certificate programs. May be repeated for credit with approval of the Computer Science Graduate Coordinator. *Prerequisite: approval of Computer Science Graduate Coordinator.*

597r Individual Studies (1-3)

To enable a student to study a selected topic in depth. A completed project and/or written report is required. May be repeated. Maximum of 3 hours may be applied to the degree. *Prerequisite: approval of instructor.*

599r Thesis (1-4)

The development of a project of thesis magnitude and quality. Department and library copies of thesis required. Oral defense required. Six total hours of thesis credit required for degree. May be repeated; maximum of six hours credit to be applied toward degree. Must register for course until thesis is completed. *Prerequisite: approval of major adviser and Computer Science Graduate Coordinator.*

400-Level Courses That May Be Taken for Graduate Credit

These courses may be used to satisfy requirements in some degree programs, subject to the approval of the student's major department and the Graduate Office.

There must be a substantial difference in expectations and work performance for graduate students in combined undergraduate/graduate courses. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students. This statement must also be recorded on the 400-level form that is submitted each semester to the Graduate School office for each student seeking graduate credit.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

420 Computer Graphics Applications and Algorithms (3)

Computer graphics systems, system software, data structures for graphics devices and display processors, representational algorithms and packaged graphics software. *Prerequisite: CPSC 312 with a grade of C or better.*

430 Topics in Simulation (3)

Digital simulation. A study of simulation languages and simulation techniques for solving many types of research problems from management, engineering, and science; simulation of large systems, design of simulation experiments for optimizations; applications using simulation languages. *Prerequisites: CPSC 312 with grade of C or better and an approved course in statistics.*

435 Data Base Management Systems (3)

Concepts and methods in the definition and management of data bases; physical and logical database design; the relational model; programming in a data base environment; topics in data base security, integrity, recovery and concurrence. *Prerequisite: CPSC 335 with grade of C or better or senior standing in Computer Science and approval of instructor.*

445 Automata, Complexity, and Computability (3)

An introduction to the classical and contemporary theory of computation including automata, formal languages, Turing machines, recursive functions, computability and uncomputability, complexity, and the classes of P and NP. *Prerequisites: CPSC 160 and MATH 303 with grades of C or better.*

450 Software Engineering (3)

A study of software development including the philosophy and techniques of software engineering and emphasizing analytical techniques useful to software designers. The course will include numerous programming assignments that will emphasize the areas of the design process; top-down, bottom-up, and structured programming approaches; different levels of test thoroughness; test approaches; test models; software reliability; and management techniques. *Prerequisites: CPSC 261, MATH 303, and ENGL 277 or 278 with grades of C or better.*

480 Introduction to Artificial Intelligence (3)

Artificial intelligence; simulation of cognitive behavior and self-organizing systems; heuristic programming including the use of list processing languages; data representation; pattern matching structures; applications in symbolic mathematics; survey of examples from representative application areas. *Prerequisite: CPSC 312 with a grade of C or better.*

Counseling

See School Psychology and Counseling

Criminal Justice (CRMJ)

500 Research Methodology I (3)

Emphasis on the development of research and design skills and related competencies encompassing writing skills, development of research resources, library utilization and computer applications involved in examining and reporting criminal justice issues. *Prerequisites: basic statistics course, research methods course.*

501 Social Control/Prevention (3)

An historical study of the development and evolution of the concept of social control and its implication for prevention; consideration of enforcement; political and societal impact toward social regulation.

502 Research Methodology II (3)

An overview of applied research and exploration of advanced concepts of research design. Application of computer to multivariate statistics, nonparametric tests, regression models, and secondary data. An applied research project is carried out. *Prerequisite: CRMJ 500.*

503 Criminal Justice Proseminar (3)

A comprehensive review of the criminal justice system focusing on how the system functions in theory and practice. Analyses of specific policies relevant to crime and the administration of justice is used to explore the process of forming public policy and the impact criminal justice professionals have upon the policy implementations.

505 Social Administration Within the Criminal Justice System (3)

An analysis of the administration of the criminal justice process in theory and practice in the United States. Includes the study of bureaucracy and complex organizations. Explores management strategies, leadership styles, and human resources issues relevant to the administration of criminal justice systems.

506 Police and Society (3)

The philosophy and role of American policing, politics and policing, managing police organizations, police-community relations, police operational and administrative practices, police research, police executive development, emergent issues and problems in policing.

510r Special Topics in Criminal Justice (3)

Concentration and research in selected fields of study. May be repeated. Maximum credit six hours.

512 Juvenile Delinquency and the Justice System (3)

Overview of the juvenile justice system, including historical development, philosophical orientation, organizational structure, and contemporary controversies. Examines police response to juveniles; the juvenile court; and juvenile corrections. Explores young people as both perpetrators and victims of crime.

513 Cross Cultural Diversity and Crime (3)

Critical examination of major theories, research findings, policies, and controversies concerning race, ethnicity, class, and gender to examine the interrelationship between criminal justice system operations and issues of human diversity and status.

516 Theoretical Perspectives of Crime (3)

Critical examination of current theoretical perspectives on crime and justice.

520 Crime Analysis (3)

Examination of various approaches to crime analysis and its effect on planning for criminogenic related programs.

521 Comparative Criminal Justice Systems (3)

Analysis of different approaches to law enforcement, criminal procedure and criminal law, juvenile justice systems, and correctional systems in cultures around the world. Specific attention given to human rights issues as defined by various international agencies.

525 The American Justice System (3)

Examination of the criminal, civil, and juvenile legal institutions. Explores the theoretical foundations of various types of law. Compares and contrasts consensus versus conflict models. Reviews the function of courts, legislature, and administrative agencies and the ways they impact upon criminal justice administration.

526 Ethics and Crime (3)

A detailed exploration of ethical issues in Criminal Justice. Special emphasis on morality and the law, human behavior, and ethical decision making in law enforcement, corrections and the courts. Major ethical systems will be discussed and then applied to dilemmas faced by professionals in each of the subsystems of the criminal justice system.

527 Organizational Crime (3)

Exploration of empirical research, theories and concepts related to crime committed within organizational contexts. Particular attention is paid to forms of syndicated crime, corporate crime, governmental corruption, and state crime.

530 Systems Planning (3)

Systemic approaches to criminal justice problem resolution and development of alternatives.

532 Victimology: Theory, Research and Policy Issues (3)

Examination of theoretical perspectives and policy issues in the field of victimology including defining victimization and rates of victimization. Examines how fear of crime and victimization has impacted the criminal justice system. Explores how victim advocacy movements and human rights organizations impact our understanding of victimology.

534 Crime and Popular Culture (3)

Explores the ways media and pop culture influence our understanding of crime, deviancy, and the criminal justice system. Examination of the social and symbolic construction of crime will be included by analysis of film, television, literature, music, popular press materials, and academic publications.

535 Correctional Theory, Issues, and Practices (3)

Critical analysis of correctional assessment, practices, and theory as applied to behavior change interventions with offender populations.

537 Drugs and Crime (3)

Historical and contemporary perspectives of drugs and crime. Examines the highly politicized nature of drug policy nationally and internationally. Explores the ways in which the war on crime has become synonymous with the war on drugs. Discusses the efficacy of the criminal justice system in addressing drug use.

540 Public Policy in Criminal Justice (3)

Analysis of public administration and management concepts and their application to the criminal justice system.

542 Terrorism and the Criminal Justice System (3)

Examines historical use of terror as a form of political power by the state, individual, and organized groups. Reviews the type of terrorist violence and justifications for their use of violence. Case studies of terrorism in various parts of the world will be used to evaluate the impact of terrorism on societies in modern times. Examines the ways in which the criminal justice system participates in investigations of and response to terrorist activities.

543 Correctional Theory and Intervention (3)

Examination of correctional strategies for adult and juvenile populations including the philosophical justification for punishment, incarceration, community-based corrections, rehabilitation, and correctional reform.

550 Crime Prevention (3)

Analysis of past attempts to control deviant behavior and extrapolation into future approaches.

560 Internship in Criminal Justice (3)

Supervised practicum in a criminal justice agency.

596 Thesis Seminar (3)

Examination of the thesis process including topic selection, proposal construction, research design, and overall research feasibility. Through intensive writing, brief lectures, and critical analysis from instructors and peers, the course is designed to provide the necessary guidance and peer support to enable successful completion and defense of thesis.

597r Individual Studies (1-3)

Enables a student to study selected topics in depth. Requires a written outline of work to be done, a statement describing the competencies to be developed and the method of assessment to be used in evaluation. Prerequisites: approval of program adviser.

599r Thesis (1-6)**400 Level Criminal Justice Courses That May Be Taken for Graduate Credit**

A number of 400-level courses are available in the Criminal Justice Program which may be taken for graduate credit. These courses may be used to satisfy requirements in some degree programs, subject to the approval of the student's major department and the Graduate Office.

400 Constitutional Law (3)

An examination of the leading constitutional principles pertaining to modern criminal procedure.

406 Juvenile Law (3)

Statutory and case analysis of judicial decisions, substantive juvenile law and procedures significant to practices of various agencies in juvenile justice. Prerequisite: CJP* 212 or approval of instructor.

425 Gender, Crime and Criminal Justice (3)

An overview of women's involvement in the criminal justice system as offenders, victims and professionals. Considerable attention will be given to women as victims of crime, the social system and the criminal justice process. On demand. Prerequisite: Criminal Justice 110 or completion of social science general education requirement or approval of instructor.

434 Gangs and the Criminal Justice System (3)

An overview into the characteristics and mentality of gang members. Students will learn how to recognize gangsterism, and understand the gangster's mentality and influence in America today. Prerequisite: Criminal Justice 110 or completion of social science general education requirements or approval of instructor.

460 Dispute Resolution (3)

Alternatives to the courts for conflict resolution, including negotiation, mediation and arbitration. Discussion of legal issues, ad-

vantages and limitations of the alternatives. Laboratory exercises in applying these methods. Prerequisite: Completion of Category C.

Economics (ECON)

500r Independent Study in Economics (1-3)**501 Concepts in Economics (3)**

National income; money and banking; fiscal and monetary policy; supply and demand; resource allocation; market structure; distribution of income.

505 Economics for Educators (3)

A study of macro- and microeconomics to include economic concepts, means, and methods of teaching economics at the elementary and secondary levels. Economic topics shall include: national income and its determination, money and banking, fiscal and monetary policy, international economics, operation of the price system, competitive and monopolistic market operation, factor pricing, and market imperfections. This course is intended for elementary and secondary educators. Students must demonstrate the likelihood that they will teach a course at the elementary or secondary level containing significant economic content. May not be taken for credit in the M.B.A. program.

507 Economics for Business Decision Makers (2)

This course examines the basic tenets behind the output and pricing decisions of firms operating in various market conditions. Business cycles, unemployment, inflation and fiscal and monetary policy are also investigated.

510 Macroeconomic Analysis for Business (3)

Determinants of the level of income and employment. Factors responsible for economic growth and income fluctuations. Money and capital markets. Economics forecasting. Monetary and fiscal policies. Prerequisite: 501 or equivalent.

520 Managerial Economics (3)

The economics of the individual firm in its decision-making process; price and cost theory of the firm and industry from the viewpoint of management decision-making. Prerequisites: 501, BMGT 503.

527r Topics in Economics (3)

Selected topics chosen by the instructor. Repeatable with permission. Maximum of six hours credit toward M.B.A. Prerequisite: 501.

529 Microeconomic Theory (3)

Demand analysis; market structure; production and cost; distribution of income. Prerequisite: 324 or 520.

597r Individual Studies (2-4)

Designed to enable students to study selected topics in depth. Requires a written outline of work to be done, a statement describing the competencies to be developed and the method of assessment to be used in evaluation. Prerequisites: approval of adviser and the Graduate Committee in Business.

598r Research (3)

Designed to enable students to conduct independent research. Prerequisites: admission to candidacy, approval of adviser and the

Graduate Committee in Business and submission of a formal prospectus two weeks prior to registration.

599r Thesis (3-6)

The development of a product of thesis magnitude and quality. Departmental and library copies of thesis required. Registration to be completed in one term or in two consecutive terms. *Prerequisites: admission to candidacy, approval of adviser and the Graduate Committee in Business and submission of formal prospectus two weeks prior to registration.*

A number of 400-level courses are available in the Department of Economics which may be taken for graduate credit. These courses may be used to satisfy requirements in some degree programs, subject to the approval of the student's major department and the Graduate Office.

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

404 International Economics (3)

The classical and modern theories of international trade; international trade accounting; exchange rates; tariffs and other restrictions on trade; recently created agencies and programs to promote international economic relationships; the influence of international economic relationships on world politics. *Prerequisites: 101, 102.*

417 Women in the Economy (3)

The role of women in the U.S. economy. An economic analysis of women's labor force participation, discrimination against women in the labor market, women's paid and unpaid work, the child care industry, and female poverty. On demand. *Prerequisites: 101, 102, or equivalent.*

425 Industrial Organization (3)

The structure of industry, business conduct, and economic performance; analysis of antitrust law and government regulation. *Prerequisites: 101, 102.*

426 Comparative Economic Systems (3)

Communism in Russia, socialism in England, and capitalism in the United States; fascism and other economic systems. *Prerequisites: 101, 102.*

444 Economics of Underdeveloped Areas (3)

Factors underlying economic progress of nations and geographic areas; analysis of resources, manufacturing and agricultural productivity, saving and investment, trade, monetary and banking system, and fiscal system. *Prerequisites: 101, 102.*

453 History of Economic Thought (3)

Development of theories of value and distribution, macroeconomics, money and banking, international trade, and business cycles; works of Smith, Malthus, Ricardo, Marx, Jevons, Marshall, Wickcell, Knight, Schumpeter, and Keynes. *Prerequisites: 101, 102.*

455 Urban Economics (3)

A study of the metropolitan economy with a problem orientation in areas of intra-metropolitan industry location, urban residential location and travel behavior, the urban ghetto, housing markets, urban transportation, and environmental quality. *Prerequisites: 101, 102.*

460 Introduction to Econometrics (3)

Introduction to the use of mathematical models in economic analysis and the statistical verification of those models. *Prerequisites: Business Management 212; Economics 101, 102 or equivalent.*

465 Economics of Regulated Industries (3)

Presentation and analysis of economic aspects of regulation of public service industries. *Prerequisites: 101, 102.*

Educational Technology (EDS: ED TECH)

605 Reflective Leadership I (3)

This course will engage students in a writing, re-writing activity in which the intended outcome is the construction of a set of carefully documented case studies of the practical problems of curriculum change and innovation.

606 Reflective Leadership II (3)

Reflective analysis of the case studies produced in Reflective Leadership I as a means of understanding how problems of education and schooling involve conflict between competing values (eg., teacher centered vs. student centered curriculum, progressive vs. traditional educational, vocational education vs. liberal learning.)

607 Seminar in Educational Leadership (3)

In-depth examination of the writings of selected authors in the field of educational leadership. Special attention will be placed on the values, valuing and valuational aspects of the leadership role. *Prerequisite: EDS 606.*

608 Technology in Education (3)

Overview of the technology appropriate for K-12 faculty and administrators as they pursue their instructional missions. Includes topical K-12 treatment of the legal and social implications of such technology. Laboratory experiences in both the creation and usage of such technology to support K-12 delivery of instruction and its administration. The intent of the course is to provide students with an understanding of the uses of technology within school systems and to initiate planning for its use within their respective work environments.

610 Program Evaluation (3)

Overview of the major theories or program evaluation, their philosophical origins and derivative procedures. The intent of the course is to facilitate an understanding of the principles of evaluation theory which will enable the student to design and conduct program evaluations, as well as interpret published evaluations of educational programs.

611 Advanced Supervision (3)

An historical and sociological analysis of the development of the field of curriculum supervision. Emphasis will be placed on how the meaning of supervision has changed and meant different things at different times in its evolution in the modern era.

612 School Culture and Educational Change Strategies (3)

In-depth examination and analysis of the cultures of elementary and secondary schools; school-community relations and relations with local, state and national educational organizations; analysis of major educational reform efforts and strategies for improving school reform efforts.

613 Teaching and Learning (3)

Examination of models of teaching and learning as they relate to the educational outcomes of students. Topics include a study of teacher and learner characteristics that affect the educational process as well as a critical review of teaching methods and strategies.

623 Applications of Computers as an Educational Tool: Interactive Media (3)

This course focuses on design, development, and implementation of interactive media in instructional settings. Topics include interactive videodisc, CD-ROM, digital audio, digital video, graphics, and skills being incorporated into classroom and school settings.

624 Distance and On-Line Learning (3)

Distance Learning, where the learner and instructor are in different places from one another and technology of some form is used to manage the communication between them is the key focus of this course. A second focus is on-line learning, the situation in which learners sit at keyboards which are connected to distributed resources and people using connections which may include cable, wires, satellite, or microwave connections.

625 Planning and Implementing Technology in Schools (3)

Planning for and implementing technology in schools. Students will examine governmental mandates and other influences impacting the technical skill training required of graduates and the related instruction schools must provide. Issues to be discussed include strategies for planning and managing technical programs, methods for establishing and maintaining collaborative community partnerships and innovative instructional approaches for training and using technology.

630 Instructional Design and Development (3)

The design, development, and production of instructional and educational materials to meet needs of learners and subject matter experts using instructional design models and skills.

690r Capstone Project (3)

The capstone project is conceptualized as a synthesizing activity combining the various strands of the degree program. It is anticipated that the project will take the form of an empirical analysis-utilizing qualitative and/or quantitative data-of an educational problem or innovation which has relevance for the student and the school district in which he or she is employed.

Electrical Engineering (EGEE)

500 Graduate Seminar (1)

Presentations of faculty and outside research in areas of current interest. Presentations of thesis research proposals by graduate students. Graded on a satisfactory/no-credit basis. Required of all first term graduate students, repeated as required with EGEE 598r.

501 Stochastic Processes(3)

Probability, random variables and stochastic processes. Functions of one or more random variables. Stationary processes, correlation and power spectra. Nonstationary processes. Brownian motion, Markov processes and Poisson processes. *Prerequisite: ENGR 322, or equivalent.*

502 Linear Systems (3)

Internal model (input-output) descriptions. External model (state variable) descriptions. Transformations to canonical forms. Solutions of the state equations. Matrix techniques. Discrete time systems. Controllability. Observability. BIBO stability, Lyapunov stability. *Prerequisite: ENGR 478, or equivalent.*

503 Digital Signal Processing (3)

Fundamentals of discrete-time signals, systems, and modern digital processing algorithms. Linear shift-invariant systems. Digital networks. Digital filter design methods. Discrete Transforms. Discrete random signal concepts. Quantization effects. Homomorphic signal processing. *Prerequisites: ENGR 325,377, or equivalent.*

510 Electromagnetic Field Theory II (3)

Rectangular cross section waveguides and cavities, including dielectric slabs, striplines, and microstrips. Circular cross section waveguides, including fiber optic cable. Spherical geometry waveguides. Scattering by strips, plates, circular cylinders, wedges, and spheres. Basics and applications of integral equations and moment methods using computer programs for wire radiation and scattering. Techniques and applications for geometrical theory of diffraction with computer programs for diffraction coefficients of conducting wedges. Green 's functions. *Prerequisite: ENGR 375, or equivalent.*

511 Communications II (3)

Influence of noise on AM and FM system performance. Threshold and threshold extension in frequency modulation. Phase-locked loop, carrier synchronization, and bit synchronization. Performance of digital communication systems in the presence of noise. Matched-filter concept and notion of probability of error as a criterion for system comparison. Calculation of system error rate and how to compare performance of systems. SNR of PCM and DM systems. Information theory and coding for error correction and detection. Telephone switching covering Strowger, Crossbar, and digital switching. ARPANET and packet radio protocols. Spread spectrum applications. *Prerequisite: ENGR 473, or equivalent.*

512 Fiber Optics (3)

Optical fiber as a transmission medium using ray theory and wave theory approaches. Character and practical aspects of optical fiber communications. Measurements undertaken in the laboratory and the field. Light sources and detectors with particular emphasis on system design applications and performance. Basic principles used for optical sensors. Electro-optic devices. *Prerequisites: PHY 232, ENGR 375, or equivalent.*

513 VLSI and Optronics (3)

Theoretical and practical aspects of the most advanced state of electronic technology to explain how VLSI circuits are fabricated and how various trade-offs are decided. Principles, phenomena, and methods appropriate for the optical spectra and integrated optics. *Prerequisites: ENGR 377, 375, or equivalent.*

514 Integrated Communication Systems (3)

An engineering description of systems used to process and transmit broadband signals - including both analog and digital transmission of high speed data and video information, as well as multiplexed voice transmission, such as HDTV, ISDN, and BUTN. *Prerequisites: ENGR 511, 512*

530 Optimal Control (3)

Introduction to the design of optimal controllers for linear systems; performance measures; design of discrete-time and continuous-time regulators; design of discrete-time and continuous-time tracking systems; introduction to dynamic programming and the Hamilton-Bellman-Jacobi equation; application of the minimum principle. *Prerequisites: EGEE 502, MATH 502.*

531 Estimation and Identification (3)

State estimation and parameter identification for dynamic systems. System observability and controllability. Covariance matrix, optimal recursive linear filtering, Kalman filters, Wiener filters. Nonlinear filtering, stochastic approximation, real-time parameter identification. *Prerequisites: EGEE 501, MATH 502.*

532 Neural Networks and Intelligent Control (3)

Overview of intelligent systems. Learning; generalization; goal oriented behavior. Expert systems. Fuzzy logic. Introduction to neural networks. Incorporating intelligence into controllers. Design of fuzzy controllers. Design of neurocontrollers. Design of fuzzy neurocontrollers. *Prerequisite: EGEE 501, 502, MATH 502.*

533 Non-Linear Control (3)

Major methods for analysis of nonlinear control systems. Phase plane analysis, Lyapunov theory, passivity. Describing functions, feedback linearization. Sliding control. *Prerequisites: EGEE 502, MATH 502*

534 Microprocessor Applications to Control (3)

This course develops state-of-the-art technology used in modern microprocessor control systems. Design methods and analytic methods for microprocessor control systems are developed. Various system configurations are developed as well as critical areas including sampling theory, finite length parameters, error detection and correction, simulation, and adaptive systems. *Prerequisites: ENGR 470, EGEE 501, 502, or equivalent.*

551 Power System Reliability (3)

Components and system modeling. Generating system reliability. Interconnected system reliability. Bulk power system reliability. Economics of reliability. *Prerequisites: EGEE 501.*

552 Power System Operations (3)

Power generation characteristics. Economic dispatch and methods of solution of the thermal dispatch problem. Transmission losses and loss formulas in the economic dispatch. Coordination equations. Unit commitment problem and an introduction to dynamic programming. Economic dispatching with limited energy availability. Hydrothermal coordination problem. Cost equations. Power system control and security. *Prerequisite: ENGR 225, 472, or equivalent.*

554 Electrical Machinery II (3)

This course develops transform methods for the design and analysis of electric machines. General reference frames are developed which embrace all other transforms for machine design and analysis. D.C. machines and synchronous and induction A.C. machines are covered. *Prerequisites: ENGR 471, 479.*

561 Power Electronics (3)

Design and analysis of power electronic devices, including electric motor drives and switching power supplies. Synchronous power switching analysis methods are developed. Power switching devices are studied including their design constraints from both a component standpoint and from a circuit design stand point. *Prerequisite: ENGR 377, or equivalent.*

562 Power System Protection (3)

Protection fundamentals. Generator protection. Transformer, reactor and shunt capacitor protection. Bus, motor, and line protection. Pilot protection. Stability, reclosing and load shedding. *Prerequisite: ENGR 472, or equivalent.*

570 Microcomputer Applications (3)

Microcomputer systems architecture, advanced real-time signal interfacing techniques, I/O programming concepts, real-time realization of digital signal processing and filtering techniques. Projects included. *Prerequisites: ENGR 470, or equivalent, EGEE 503, MATH 502.*

591r Special Topics in Engineering (3)

Selected advanced problems of current interest. Ordinarily, topics will cover those not available in other graduate courses. May be repeated. *Prerequisite: Consent of instructor.*

598r Thesis I (2-4)

The development of a project of thesis magnitude and quality. Admission to candidacy application submitted and approved. Thesis proposal approved by engineering thesis advisor and presented to meeting of EGEE 500 Seminar. Engineering faculty thesis committee formed. Historical background and up-to-date literature research of thesis topic completed, drafted and draft approved by thesis committee. Graded NP/SP by faculty thesis committee, to be replaced with letter grade by engineering thesis advisor on completion of thesis. *Prerequisite: EGEE 500 Seminar, approval of engineering thesis advisor. Corequisite: EGEE 500 Seminar.*

599r Thesis II (2-4)

The completion of a project of thesis magnitude and quality. Departmental and library copies of thesis required. Oral defense required. Three hours of credit required. May be repeated; maximum of three hours of credit to be applied toward degree. Must register for course until project is completed. Letter grade for three hours toward degree also applied retroactively to EGEE 598r. *Prerequisite: EGEE 500, EGEE 598r with satisfactory grade, approval of engineering thesis advisor.*

Elementary Education (EL ED)

Curriculum and Instruction (EDUC)

500 Introduction to Educational Inquiry (3)

Introduces the student to different approaches to research in education. Three broad categories of inquiry based on empirical science, phenomenology, and critical theory will be presented. Students will be expected to define a researchable problem and a plan for their graduate program that will culminate in a final project. *Requisite: must be taken during the student's first nine hours in the program.*

501 Methods of Educational Research (3)

Emphasis on the development of research skills and related competencies involved in investigating and reporting educational problems; study of basic statistical procedures; basic qualitative research methodologies are also examined. *Crosslisted as ESPY 501 and EDAS 501*

503r Current Topics in Education (2-4)

Special topics designed for specific groups as inservice education; study to include research in literature of current topics under discussion.

504 Methods of Educational Research: Qualitative (3)

A practical introduction to the emerging field of qualitative research in education. Students will be introduced to different types of qualitative inquiry, qualitative research methodologies and the different aims and purposes underlying qualitative research in education. However, because professional educators also need to be knowledgeable critics and informed consumers of quantitative research studies, basic quantitative research methodologies are also examined.

505 Descriptive and Inferential Statistics (3)

Types of data, experimental design, and parametric and nonparametric methods; some prior study in measurement and/or statistics recommended.

508 Collaboration and Consultation (3)

Rationale of strategies useful for professionals in education and related disciplines to function as effective collaborators; exploration of trends in intervention for individuals with special needs as well as self-assessment and practice of interpersonal, teaming, and communication.

509 Seminar for Cooperating Teachers (3)

Objective analysis and evaluation of teaching; emphasis on student teacher/cooperating teacher/college supervisor interrelationships.

510 Professional Ethics (3)

This course examines the ethical nature of teaching and, in particular, the teacher/student relationship. Areas of study include the nature of ethical inquiry, punishment and due process, intellectual and academic freedom, equal treatment of students and minorities, and the legal content of professional ethics.

512 Learning and Education (3)

An overview of the major structures used in research and used to understand learning in educational settings with particular attention to behaviorism, developmentalism and constructivism. *Crosslisted as EPSY 512*

513 Perspectives on Multiculturalism and Diversity (3)

Study of microcultures in the United States, their relationships to the macroculture and their significance for educational policy and practice. Explores diversity resulting from various socioeconomic class, race, ethnicity, gender, exceptionality, religion, language, sexual orientation and age. *Crosslisted as EPSY 513 and EDAS 513.*

514 Teaching in Diverse Classrooms (3)

Study of diversity that may be found within a classroom in the United States and the significance of this diversity for classroom teaching and learning. Explores variations in ability and exceptionality, socioeconomic class, race and ethnicity, gender, religion, and language. Emphasizes strategies for managing and instructing diverse populations in educational settings. Field component.

515 Assessment and Learning (3)

An introduction to student assessment practices routinely used in contemporary education settings. Emphasis upon the ethical use of measurement devices, developing an understanding of general measurement concepts, the interpretation and use of formal measures, and the development, administration, and use of informal (teacher-made) classroom assessment devices. Emphasis is placed upon the effective use of these devices to improve learning. *Crosslisted as EPSY 515.*

516 Introduction to Curriculum (3)

Introduces the student to the study of school curriculum. The course studies issues about curriculum design, development and evaluation by considering the persons involved, the types of inquiry used, and the ideas underlying choices and the criteria used to judge curriculum decisions.

520 Social and Historical Foundations of Education (3)

Acquaints prospective teachers with social and historical foundations of education. Provides a broad perspective on American education and analyzes issues from the foundations of education using students' personal experience and perspectives as future teachers. Field component. *Requisite: must be taken during the student's first nine hours in the program.*

521 Human Development Applied to Education (3)

A study of major theories and concepts related to the development of infants, children, and adolescents. Focus on typical and atypical development, age appropriate behavior, and developmental needs, particularly as they relate to educational practice. Field component required. *Requisite: must be taken during the student's first nine hours in the program. Crosslisted as EPSY 521.*

522 Instructional Planning and Evaluation (3)

An in-depth study of the elements of teaching that transcend specific disciplines. The skills of planning, specifying, and measuring educational outcomes for diverse student populations are stressed. A variety of educational strategies is also explored. *Prerequisites: EDUC 520 & 521*

523 Advanced Study in Early Childhood Development (3)

Studies development of normal and exceptional individuals birth to nine years; emphasis given to relationships among the significant persons in the child's life; topics include the development of language, formal, and informal assessment techniques.

524 Internship in Elementary/Early Childhood Education (3)

A supervised field experience designed to provide the graduate student in the last nine hours with an opportunity to demonstrate knowledge and competencies obtained in the M.Ed. program through a training internship; requires the creation of written outline of competencies to be attained. *Prerequisite: admission to candidacy.*

531 Evolving Patterns in Secondary Teaching (3)

Content and teaching strategies unique to a particular discipline. Emphasis on recent development. Exploration into curriculum research and models for curriculum implementation.

532 Innovative Programs in Science & Environmental Education (3)

An examination of a wide array of local, state, and federal programs and practices in science and environmental education. Emphasis on the role of school leaders in implementing innovative programs and practices. *Prerequisite: approval of instructor*

535 Teachers, Markets, and Society (3)

Designed to help teachers understand how markets and market economies operate in the world economy and to provide teachers with methods and materials for use in elementary and secondary classrooms. The course may not be repeated for academic credit.

538 Energy and Education (3)

Methods and materials for infusing energy education concepts into the K-12 curriculum; course designed for educators and natural resources personnel.

540 Curriculum and Strategies for Early Childhood Education (3)

Designed to extend the student's basic knowledge of curriculum to provide the opportunity and ability to modify and create curriculum approaches. The student will expand knowledge and demonstrate strategies used with children ages birth to eight years in a variety of settings.

542 Managing Emerging Social Behavior (3)

Concepts and theories about age-appropriate development needs and behaviors of Pre-K to 4th grade children. The students will also learn to use a variety of skills to assist children to continually acquire more mature skills for learning and for social interaction. These skills will be role played in class, and projects will include the use of these same skills by the students in Pre-K-4 classrooms.

545 Issues in Early Childhood Education (3)

A critical review and discussion of current research and issues in the growing and expanding field of early childhood education. Provides a forum for students to have an opportunity to critically examine the impact of current trends and approaches in the field. Designed to extend the knowledge and skills of educators and facilitate reflection on forces both inside and outside the classroom that affect work with young children.

550 Curriculum Development in Elementary and Middle School (3)

Analysis and applications of objectives and theoretical structures; issues in relation to principles of learning, needs of children; critical analysis of curriculum trends and resources; and the role of the teacher in curriculum development. *Prerequisite: EDUC 516.*

561 Literacy Instruction for Emergent Learners, Birth to First Grade (3)

This advanced focus in literacy will support teacher knowledge of best practices in classroom instruction aimed at ages of birth through first grade. Participants will learn the major theories of language development and the history of teaching reading in the U.S.; principles of balanced literacy; critical strategies in emergent literacy instruction; methods for creating a literacy environment; and strategies for supporting children's vocabulary development, word identification, and spelling pattern awareness. Current issues will be explored in the topics of phonics instruction, decodable text, literature-based approaches, phonemic awareness, and the competing theories of emergent literacy and "reading readiness."

562 Literacy Instruction for Elementary School Learners, Grade Two Through Five (3)

This advanced focus in supporting elementary school literacy will support teacher knowledge of best practices in classroom instruction and assessment. Participants will examine closely the development of a balanced reading program, how to prevent and remediate reading difficulties, methods of teaching word identification/vocabulary/spelling, strategies for supporting comprehension within a readers' workshop, developing/maintaining a writers' workshop, strategies for students' writing to learn, and how to organize/support literature circles. Interviews, conferences, self-reports, portfolios, observations, informal reading inventories, running records, miscue analysis, and Major Points Interview for Readers will be examined as authentic assessment processes.

563 Literacy Instruction for Middle/High School Learners (3)

This advanced focus in adolescent literacy will support teacher knowledge of best practices in classroom instruction. Participants will learn about the role of the cueing systems in student reading and teacher assessment, how to prevent and remediate adolescent reading difficulties, how to create a positive literacy environment in content coursework, methods of teaching word identification/vocabulary/spelling, strategies for supporting comprehension, study strategies, enriching student writing, communicating information to students/parents/administrators, and resources for curriculum development.

564 Practicum for Literacy Instruction (3)

This is an advanced focus in identifying and remediating problems in literacy acquisition and learning, as well as assessing growth in both teaching and learning. Coursework will support teacher knowledge of best practices in classroom instruction, with participants utilizing the inquiry approach as teacher-researchers to address specific challenges and needs of their classrooms and school.

570 History and Philosophy of Educational Technology (3)

Overview of the science and theory of the field of educational media; essential readings from historical background and current issues in the field. Social, cultural, historical and political implications related to instructional and educational technology, especially to the invention, adoption, and diffusion of technology in education.

571 Principles of Instructional Design and Development (3)

Overview of instructional design theories and principles and application in a variety of fields: education, business and industry, training, etc. Specific detail in applying each step on an instructional design process.

575 Educational Technology (3)

Application of computer and video technologies to the practice of teaching in a school setting. Focus is on ways to become an effective technology-user and on techniques for finding information, creating educational materials, and grappling with classroom data. Student use of technology and the tools available to empower learners to gather information, manipulate it, and create new information in a variety of forms.

576 Organization and Administration of Instructional Technology (3)

Techniques for integration and management of technology in education. Specific topics might include: integrating CAI, strategies for managing hardware, software, facilities, and training, program evaluation.

577 Multimedia Production Techniques (3)

Review of advantages and disadvantages of a variety of media types. Design and production of print materials, graphics, sound, animation and video to create and produce: overheads, slide tape, video, computer-based and internet educational application.

578 Computer-based Authoring Tools (3)

Survey of methods in computer-based authoring systems and advanced multimedia production technology. Design, production, and evaluation of computer-based training modules using one or more authoring systems.

590 Culminating Experience (3)

Directed research or development of a project under faculty supervision. Prerequisite: Admission to candidacy, approval of M.Ed committee. Co-requisite: *EDUC 596*.

591 Professional Teaching Experience (6)

For the employed teacher seeking initial teacher licensure is through the M.Ed. Elementary or Secondary Education: Licensure, this an intensive semester-long experience at the site of the candidate's teaching assignment. The course includes seminars in instructional planning and evaluation, educational psychology, and current issues related to education as well as reflective papers. UTC faculty observe and evaluate the pedagogical skills of the candidate through periodic classroom visits. Prerequisite: Application for and admission to the Professional Teaching Experience according to guidelines of the College of Education and Applied Professional studies. Corequisite: *Education 590*.

596 Induction Experience (9)

An intensive semester-long placement for master's degree candidates seeking initial teaching licensure. Seminars in instructional planning specific to the teaching discipline and in educational psychology accompanying the experience are integral.

597r Individual Studies (2-4)

To enable a student to study a selected topic in depth; requires a written outline of work to be done, a statement describing the competencies to be developed, and the method of assessment to be used in evaluation. Prerequisites: approval of adviser and department head.

598 Research (3)

To enable a student to conduct independent research. Prerequisites: *EDAS 501*, admission to graduate degree candidacy, approval of program adviser and coordinator of graduate programs in education. Requires the submission of a formal prospectus two weeks prior to registration.

599r Thesis (3 or 6)

The development of a product of thesis magnitude and quality; specific style and form may vary with the degree program. Department and library copies of thesis required. Oral defense required. Six hours of credit permitted. Registration to be completed in one term or in two consecutive terms. Prerequisites: *EDAS 501*, admission to graduate degree candidacy, approval of program adviser and coordinator of graduate programs in education. Requires submission of a formal prospectus two weeks prior to registration.

Engineering (ENGR)

504 Engineering Optimization Methods (3)

Engineering and mathematical optimizational techniques for engineering/engineering management applications will be covered with an understanding of how the techniques can be applied, the mechanics of application, and the use in assisting the engineering/engineering manager. Topics are classical optimization techniques, probabilistic techniques, linear programming, dynamic programming, inventory, and waiting lines. Topics will focus on application of techniques of various industry segments such as research, manufacturing, transportation, distribution and services.

526 Water and Wastewater Treatment Systems (4)

Theory, design, and operation of water and wastewater treatment systems. Unit operations and processes employed in the physical, chemical, and biological treatment of water and wastewater. Prerequisite: *307*.

528 Air Pollution Control Systems (4)

Emission control systems for industrial and power generating processes, stack sampling methods, air monitoring, dispersion of pollutants. The mechanics of particles suspended in the gaseous medium including particle motion, coagulation, and aerodynamic capture of particles. Social, economic, and political processes involved in pollution control. Prerequisite: *534*.

532 Advanced Thermodynamics (4)

A thorough study of macroscopic thermodynamics with emphasis on First and Second Law analyses, equilibrium criteria, and the thermodynamics of phase relationships. Phase rule; equilibrium between phases; composition relationships between phases; ideal and non-ideal solutions. Microscopic thermodynamics; a study of thermodynamics properties using kinetic theory and statistical mechanics. Prerequisite: *303*.

534 Transport Phenomena (4)

Heat, mass, and momentum transfer. Boundary value problems. The analysis of macroscopic physical systems based on the continuum equations. Development of conservation equations. Heat transfer and flow through conduits; conduction. Prerequisite: *405 and differential equations*.

536 Mass Transfer Operations (4)

Stagewise and differential mass transfer operations. Equilibrium stage concepts applied to mass transfer operations, emphasizing non-isothermal and multicomponent systems. Differential mass transfer operations; falling film, packed tower and bubble contracting devices; non-isothermal and multicomponent systems; current theories of mass transfer; mass, heat, and momentum transfer analogies. *Prerequisites: 432 and 534, differential equations.*

537 Computational Thermal Hydraulics (3)

An introduction to the techniques of computational fluid dynamics and heat transfer. Topics will include basic descriptive equations, discretization schemes, finite difference methods, finite elements, accuracy and stability of methods, the SIMPLE algorithm, the two-equation turbulence model, and numerical grid generation. Students will write finite difference programs in a language such as FORTRAN or C and use commercial finite element software. *Prerequisites: 225, 307, 405; MATH 245. MATH 518 is desirable.*

538 Heat Conduction and Radiation (4)

Solutions to problems in conduction and radiation using analytical and numerical techniques. *Prerequisites: 405; Mathematics 515.*

542 Finite Element Analysis (4)

An introduction to the finite element method; typical topics: structural analysis, structural dynamics, heat transfer, fluid mechanics; use of typical large-scale computer programs; innovative design and analysis; modeling techniques; geometric or material nonlinear analysis. *Prerequisites: 225; Mathematics 245, 255; consent of instructor.*

544 Applied Mechanics (4)

Selected topics in applied mechanics drawn from the following: virtual work, d'Alembert's principle, Lagrangian mechanics; relative motion, Euler angles, matrix formulation of rigid body mechanics; wave propagation, impact, and high speed processes; introduction to rheology. *Prerequisites: either 445 or both 248 and 446, Mathematics 515.*

552 Reliability Engineering (3)

This course presents concepts and methods of reliability engineering. Included are the theoretical and practical tools for the design, production, testing and maintenance of engineering systems and components having a predictably low probability of failure. A systems approach to reliability management is emphasized. The topics will focus on practical application of techniques for improvement during design, start-up and steady state operation of products and processes from the technical manager's perspective. *Prerequisite: ENGR 222 or equivalent.*

554 Technical Project Management (3)

All aspects of project management will be covered with emphasis on human and institutional interactions that occur during management of technical projects. Methods of resource identification and allocation, integration of scheduling and cost factors, development of project plans and control will be addressed. Project control methods such as PERT and CPM will be introduced. A project case study will be carried through the semester to illustrate decisions and problems encountered in technical project management. Individual presentations will be required. (also ENGM 554)

558 Advanced Engineering Economy (3)

This course examines the design and analysis of financial strategies in a technical environment. Emphasis is on the application of these strategies in competitive industry. Core topics include review and application of basic engineering economy concepts, mathematical techniques and models, treatment of risk and uncertainties, cost of capital, demand and price elasticity as it applies to capital investment decisions, financial statements, financial ratio analysis, taxes and inflation, capital budgeting, and financial planning. Special topics include ethics and legal perspectives. *Prerequisite: ENGR 352 or equivalent. (also ENGM 558)*

559 Systems Engineering and Analysis (3)

This course introduces and expands on the means of controlling the total system development process to ensure evolution of a high-quality, trustworthy, and cost-effective system capable of meeting user needs. The technology and tools needed are introduced and procedures and examples provided. The application to the improvement of existing systems is illustrated. Topics covered include systems engineering process and life cycle standards in systems engineering, systems engineering management, concurrent engineering, and systems analysis applications.

560 Statically Indeterminate Structures (4)

Deflections of bending and axial members; analysis by force methods and by slope-deflection. Methods of successive approximations and numerical procedures for the solution of complex beams and columns; moments and deflections of beams on elastic or plastic supports; buckling strength of columns; influence lines. *Prerequisite: consent of instructor.*

564 Advanced Structural Analysis and Design (4)

Advanced topics in structural engineering will be presented. Typical topics are: bending and buckling of plates and shells; nonlinear analysis of cables; analysis and design of such structures as thin concrete shells, pressure vessels, cable roof structures, machined and cast mechanical elements. *Prerequisite: consent of instructor.*

570 Advanced Statistics and Design of Experiments (3)

This course emphasizes those techniques and practices necessary for accomplishing repeatable and high-quality experimental results. The notions of data collection, estimation, hypothesis testing, and regression analysis for the purpose of comparing treatment and making decisions are reviewed. Analysis of Variance (ANOVA) as well as two- and multi-factor and chi square experimental designs are introduced and applications visited. Design of Experiments (DOE), including design concepts, procedures, and documentation requirements are stressed throughout the course. A project culminates the course, requiring application of topics within the DOE context. A statistical package is utilized throughout the course as both a teaching tool and a learning device. *Prerequisite: ENGR 222 or equivalent.*

590r Engineering Project (3)

An in-depth study and formal report of an engineering topic, normally performed during the last term of work toward the degree. May be repeated; maximum of three hours of credit to be applied toward degree. Must register for course until project is completed.

591r Special Topics in Engineering (3-4)

Selected advanced problems of current interest. Ordinarily topics will cover those not available in other graduate courses. May be repeated. Application of more than four hours for degree credit requires prior approval of the Graduate Engineering Committee. *Prerequisite: consent of instructor.*

599r Thesis (2-4)

The development of a project of thesis magnitude and quality. Departmental and library copies of thesis required. Oral defense required. Six hours of credit required. May be repeated; maximum of six hours of credit to be applied toward degree. Must register for course until project is completed. *Prerequisite: approval of Graduate Engineering Committee.*

400-level Courses That May Be Taken for Graduate Credit.

These courses may be used to satisfy requirements in some degree programs, subject to the approval of the student's major department and the Graduate School. The student may also wish to refer to course offerings under the master's of engineering management program.

There must be a substantial difference in expectations and work performance for graduate students in combined undergraduate/graduate courses. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students. This statement must also be recorded on the 400-level form that is submitted each semester to the Graduate School office for each student seeking graduate credit.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

430 Chemical System Design (3)

Application of systems design techniques to the design of chemical processes. Discussion of case studies including separation processes, heat exchanger networks, and process utilities. Individual or group design problems. *Prerequisites: 380, 432, 435. Corequisites: 433, 434.*

432, 433 Chemical Operations I and II (3,3)

Fundamental variables of chemical operations; generalized treatment of mass-transfer operations including separation processes. Multi-component phase equilibria. Application of fundamental principles of chemical operations for systems with simultaneous heat, mass and momentum transfer. Design projects both semesters. 432 fall semester/433 spring semester. *Prerequisites: 331, 405.*

434 Chemical Kinetics and Reactor Design (3)

Concepts of chemical kinetics applied to reactor design. Effects of temperature, pressure, concentration and catalysis on rates of chemical reactions. Design of batch, backmix, tubular and fluidized bed reactors. Individual or group design project. Spring semester. *Prerequisites: 331, 405; Chemistry 371.*

440 Advanced Fluid Dynamics (3)

Principles of continuity, momentum and energy applied to flow measurements, turbomachinery, open channel flow, compressible flow, and computational fluid mechanics using text and/or supplemental software. Design experience. Fall semester. Lecture 3 hours. *Prerequisites: 303, 307, 331, 405 with grades of C or better.*

441 Energy Conversion (3)

Broad-based energy conversion as applied to steam power, gas turbines, internal combustion engines, and nuclear power systems with combustion analysis using appropriate computer software for analyzing equilibrium combustion products. Design experience. Spring semester. Lecture 3 hours. *Prerequisites: 303, 307, 331, 405 with grades of C or better.*

442 Machine Design (3)

The analysis and design of machine elements including fatigue-failure, analysis of shafts, springs, screws, braces, clutches, chains, belts, welds and rivets, lubrication of journal, ball and roller bearings, and spur, helical, bevel and worm gears. *Prerequisites: 248, 348.*

443 Thermal Component Design (3)

Design of individual components of thermal systems. Economic trade-offs in sizing, choice of materials, number of passes and other design criteria. Examples of heat exchangers, refrigerators, steam cycle components and modern, innovative concepts. Spring semester. Lecture 3 hours. *Prerequisites: ENGR 307, 308, ENME 304, 309*

445 Mechanical Vibrations (3)

Free and forced vibrations of damped and undamped systems; single and multiple degrees of freedom using lumped parameter analysis. Matrix rotation: sweeping and rotation techniques. Design experience included. Spring semester. Lecture 3 hours. *Prerequisites: ENGR 248, ENME 348; Mathematics 245, 255.*

446 Advanced Mechanics of Materials (3)

Statically indeterminate structures; introduction to theory of elasticity; special topics in mechanics of materials. Fall semester. Lecture 3 hours. *Prerequisites: ENGR 246; Mathematics 245, 255.*

441 Production and Operations Management (3)

The detailed study of designing a product or service, through the process and systems of making and delivering the product, and controlling the operations. It provides a fundamental coverage of the concepts such as competitiveness and productivity, forecasting, supply chain management, inventory management, JIT, MRP and ERP, waiting lines, with the use of basic quantitative techniques. Fall semester.

443 Simulation and Modeling (3)

Simulation of complex discrete-event systems with applications in industrial and service organizations. Introduction to modeling, random number generation, simulation design, and current simulation software package. Applications include a variety of industrial situations, including manufacturing and logistics simulation. Spring semester. *Prerequisite: ENGR 222 or equivalent.*

450 Industrial Engineering Design (3)

Design of operations, facilities, and project controls. Topics include process organization, materials handling, information handling, scheduling and resource allocation. Case studies. Design project included. Spring semester. Lecture 3 hours. *Prerequisite: ENGR 385.*

457 Quality Control (3)

The design and analysis of quality systems. Fundamental coverage of statistical process control, quality control concepts, control charts, project specifications, process control, acceptance sampling systems, and other means of assurance widely used in many industries to improve product and service quality and to reduce costs. Fall semester. Lecture three hours, laboratory work included. *Prerequisite: ENGR 222 with a grade of C or better.*

458 Industrial Plant Layout (3)

Types and techniques of plant layout; process flow charts in routing operations. Design and selection of equipment, materials handling, and plant service facilities. Each student develops a scaled layout of equipment and services of a specific product as a major project. Fall Semester. Lecture 3 hours with design experience.

461 Engineering Information Systems (3)

Introduction to and application of basic concepts, design, development, and uses of engineering information systems. Topics include architecture and components of engineering information systems, problem analysis, modeling, design, development, and system maintenance. Theoretical and practical issues related to the manipulation of engineering information and design of queries is also discussed. Course culminates with a project. Spring Semester.

Engineering Management (ENGM)

550 Concepts in Engineering Management (3)

This course presents the basics of the operational theory and science of management. The essentials of management that are pertinent to practicing managers are emphasized. The theory, principles, and techniques are presented as an art — applying the science of the underlying organized knowledge of management to the realities of situations. Management is presented as a part of a larger system interacting with the total environment and encompassing economic technological, social, political, and ethical issues.

551 Legal/Ethical Perspectives in Engineering (3)

Course objectives are (1) to introduce the engineering manager to moral reasoning, ethical theories ethical principles, ethical rules, and foundation for ethical decisions as managers, (2) to describe the legal boundaries in which engineering managers must function, and (3) evaluate contemporary cases confronting engineering managers.

554 Technical Project Management (3)

All aspects of project management are covered with emphasis on human and institutional interactions that occur during management of technical projects. Methods of resource identification and allocation, integration of scheduling and cost factors, development of project plans and control are addressed. Project control methods such as PERT and CPM are introduced. A project case study is carried through the semester to illustrate decisions and problems encountered in technical project management. Individual presentations required. (also ENGR 554)

555 Technology Entrepreneurship and Leadership (3)

This course examines the understanding of technology, organizational, and human factor issues in technology companies of all sizes. Differences between entrepreneurship, technological leadership, innovation and trusteeship are examined. Technological

leadership and technological entrepreneurship are explored for various stages of a company's development and for various sizes of companies. A framework for examining principles of technological leadership and entrepreneurship in an operating enterprise will be applied to case studies. *Prerequisites: ENGM 550 and 12 hrs of graduate credit or approval of instructor.*

556 Quality Management Systems(3)

Introduction to quality management principles including its history, the role of total quality, and the philosophical perspectives supporting total quality. In-depth look at the management system and its relationship to total quality. Investigation of technical issues and the role of tools and techniques in the quality management process including methods, quality improvement and associated management models, and reliability in design and production. Exploration of methods of building and sustaining quality organizations. *Prerequisite: ENIE 457 or equivalent*

558 Advanced Engineering Economy (3)

This course examines the design and analysis of financial strategies in a technical environment. Emphasis is on the application of these strategies in competitive industry. Core topics include review and application of basic engineering economy concepts, mathematical techniques and models, treatment of risk and uncertainties, cost of capital, demand and price elasticity as it applies to capital investment decisions, financial statements, financial ratio analysis, taxes and inflation, capital budgeting, and financial planning. Special topics include ethics and legal perspectives. *Prerequisite: ENGR 352 or equivalent. (also ENGR 558)*

580 Product Development (3)

Examination of the activities necessary for the successful development of a product or service. The topics include the innovation process and new ventures, proposal preparation, technology assessment, integration with marketing and manufacturing, vendor qualification, product liability considerations, establishing and assessing product lifecycles, analysis of alternatives, strategic product planning, and managing innovation. *Prerequisites: ENGM 550 or consent of instructor.*

582 Value Management (3)

Practical application of modern Value Analysis principles to design and modification of products and processes to reduce cost and/or improve performance. Topics covered include functional analysis, functional costing, cost drivers, evaluation of alternative designs, proposal preparation and presentation. Emphasis on management of Value Analysis programs and case studies. Project required.

583 Strategic Management and Technology (3)

This course will focus on decision-making at the senior executive level. The overarching emphasis is on strategic management with focus on the integration of technical, marketing, financial, legal, and operations issues. Case studies are used, and combinations of oral and written reports are required. Industry examples come from both the manufacturing and service sector. *Prerequisite: ENGM 550 and 12 hours of graduate credit or approval of instructor.*

591r Special Topics in Engineering Management (1-4)

Selected advanced topics of current interest. Ordinarily, topics covered are those not available in other graduate courses. May be repeated. Application of more than four hours for degree credit requires approval of the Graduate Engineering Management Committee or Director of Engineering Management Program. *Prerequisite: Graduate standing and consent of the instructor.*

595 Research Methods Laboratory (1)

Introduction to the conduct of an engineering management research project. The identification and development of a project of magnitude and quality suitable for submission and approval by a project advisor and committee. Selection of an advisor and formation of a project review committee. Introduction to and conduct of literature review of related topics to the project. Application of engineering management science and theory to real world applications. Introduction to data collection design. Status reports, written final proposal, and class presentation required. Grading by project committee. Laboratory 2 hours. *Prerequisites: Engineering Management core (18 hrs.) and last 9 hrs. of program.*

English (ENGL)

500 Introduction to Graduate Studies in English: Methodology and Bibliography (3)

Emphasis on contemporary methods and aims of literary research; special reading designed to familiarize students with a wide range of available source materials and research techniques.

501r Special Topics in English Studies (3)

Maximum credit six hours. Approval of department head only.

510 Linguistics (3)

A dichotomous and synchronized treatment of selected linguistic topics: e.g., grammar, vocabulary, dialect, literary relationships, and pedagogy. (Formerly English 560).

512 Semiotics: The Study of Signs (3)

Advanced study of semiotics, i.e., the science of interpreting intentional sign, both verbal and non-verbal, in the several sorts of languages used by human beings and animals, whether the signs are oral, inscribed, gestural, or in the organized use of space. Although useful to English majors in both the literary and the writing tracks, this course is appropriate to students in all disciplines in which the interpretation of signs or symbols, in whatever mode, is central to inquiry.

513 Writing Essays for Publication (3)

An advanced writing workshop where students will write several types of essays and learn the ins and outs of getting those essays published. By the end of the course, students will have composed between 100-200 pages of writing in the following forms: Creative/reflective journal; Listserv discussion; Profile/Interview; Issues Essay; Memoir; Radio Essay (for NPR); Wild Card; your choice.

517 Medieval and Renaissance Rhetorics (3)

A study of Christian rhetoric, medieval rhetoric, and the rhetorics of the renaissance. Students will read selections from Augustine, Boethius, Christine de Pisan, Laura Cereta, Erasmus, Ramus, and Francis Bacon. They will also examine the historical and cultural contexts that shaped the rhetorics of these authors and periods.

518 Enlightenment and Continental Rhetorics (3)

A study of the influence of the Enlightenment and Continental developments on the continuing history and changing nature of rhetoric. The period from the seventeenth to the twentieth centuries was marked by revolutions in the science, philosophy, and politics. These revolutions had far reaching effects on traditional notions of the physical world, of knowledge and truth, of human nature, and of society. As a result, attitudes toward and

understandings of language, communication, and rhetoric were greatly affected. To understand the richness and complexity of the rhetoric of this period, students will read selections from Margaret Fell, Sarah Grimke, John Locke, Vico, Thomas Sheridan, George Campbell, Hugh Blair, Richard Whately, Alexander Bain, Nietzsche, Bakhtin, and others. They will also examine the historical and cultural contexts that influenced these authors.

519 Ancient Rhetorics (3)

The act of defining rhetoric is an act of locating oneself in a particular history as rhetoric is, indeed, a history of new rhetorics brought forth by revolutions and reformation. Richard McKeon believes, for example, that rhetoric is "an instrument of continuity and of change, of revolutionary change." Indeed, this revolutionary change has led to definitions of rhetoric ranging from Aristotle's "faculty of observing in any given situation the available means of persuasion" to Kenneth Burke's notion that rhetoric is everywhere and in everything. This course on the history of rhetoric offers a glimpse into ancient rhetorics of the sophists, the Greeks, and the Romans. Specifically, students will read selections on and from Gorgias, Isocrates, Plato, Aristotle, Cicero, and Quintilian as they study the historical and cultural contexts that produced these rhetorics.

520 Modern Rhetorical Theory (3)

The historical, philosophical, and cultural underpinnings of modern rhetoric. The major rhetorical theorists and currents of thought in contemporary rhetorical theory. Students will produce a scholarly paper on some aspect of modern rhetoric.

521 Rhetorical Analysis (3)

The use of rhetorical criticism to analyze cultural artifacts; to understand how symbolic systems construct their own persuasive realities; to practice oral and written rhetorical analysis in both individual and collaborative settings; to acquire some of the practical terminology common to the discipline of rhetoric. The rhetorical aspects of situations: context, symbols, environment, speech characteristics, writing characteristics, even clothes and color.

522 Orality, Print, and Hypertext (3)

Designed to help students obtain an historical perspective on writing as a technology and to understand the essential differences between human consciousness in oral cultures and human consciousness in writing cultures. Students will work to understand the historical and political underpinnings of the term "literacy."

523 Composition Theory (3)

Selected readings in writing theory and research. Extensive practice in critical writing.

524 Writing for Graduate Students I (3)

Designed to help students use writing as a means of mastering difficult readings so that they reflect that mastery clearly, coherently, and concisely in finely tuned written products.

525 Writing for Graduate Students II (3)

Continuation of English 524. Completion of English 524 or permission of instructor required. Emphasis on developing the ability to apply, interpret, and evaluate in clear, concise, and coherent writing.

527 Critical Theory (3)

Studies of major critics and historical developments (Classical, Medieval, Renaissance, Romantic, Modern, Postmodern) with practice in applying major critical concepts.

535 American Colonial and Federalist Literature: 1620-1820 (3)

An examination of the way American character is reflected in and shaped by writings of the period, including a study of various rhetorical modes such as autobiography, journals, and letters as well as religious, political, and literary texts. Includes such figures as Bradford, Edwards, Taylor, Cooper, and Irving.

536 American Renaissance: 1820-1860 (3)

An exploration of various genres during a period when America was trying to define itself culturally and artistically, following political independence. Includes such figures as Hawthorne, Melville, Poe, Thoreau, Emerson, Whitman, Stowe, and Fuller.

537 American Realism and Naturalism: 1855-1918 (3)

An examination, through fiction, poetry, and criticism, of the development of American literature between the Civil War and W.W. I. Includes such figures as Mark Twain, Henry James, Edith Wharton, Stephen Crane, William Dean Howells, W.E.B. Dubois, and Adelaide Crapsey.

538 Modern American Literature: 1912-1965 (3)

An examination through fiction, poetry, drama, and supportive critical works of the literature between W.W.I and the demise of writers in the 1960s, such as Hemingway and Faulkner. Includes other figures such as Fitzgerald, Langston Hughes, Marianne Moore, and T.S. Eliot.

539 Contemporary American Literature: 1965 to the Present (3)

A study of selected fiction, nonfiction, poetry, and drama of the period, examining critical questions about canon formation, forces shaping current literature, and genre development. Includes such figures as John Barth, Ellen Gilchrist, Toni Morrison, William Least Heat Moon, A.R. Ammons, and Anne Sexton.

544r Seminar: American Regional Literature (3)

A study of the literature of a particular region of America (such as Western, Midwestern, New England, or Southern), and its development in the context of landscape, history, language, ethnic groups, socio-economic conditions, and the larger nation. May be repeated only once, with different content. (See class schedule for current offerings.)

545r Seminar: Genre in American Literature (3)

A study of a particular genre—fiction, poetry, drama, or essay—with consideration of form, development, and history. May be repeated only once, with different content. (See class schedule for current offerings.)

546r Seminar: Ethnic Literature in America (3)

A study of one of the various bodies of ethnic literature that have developed from American's diversity and pluralism, such as African-American, Italian American, Native American, Jewish-American, etc., with consideration of its relationship to the history of literature, to the history of America, and its reflections of the culture of the given ethnic group. May be repeated only once, with different content. (See class schedule for current offerings.)

547r Seminar: Major Figures in American Literature (3)

A study of the writings of one to three authors. Includes consideration of biography, time and place, and relationship to literary history, forms, and themes. May be repeated only once, with different content. (See class schedule for current offerings.)

548 Seminar: Themes in American Literature (3)

A study of a selection of writings which treat a prominent theme in American culture, in the context of the development of America and its literature. Themes might include religion, political ideology, the world of business, nature, education, perceptions of time and space. May be repeated only once, with different content. (See class schedule for current offerings.)

549r Fiction Writing (3)

A course in which students write fiction and criticize each other's work; study fictional forms, techniques, and types from major critics of fiction; read and study published fiction with a view toward publication of their own fiction or criticism.

550r Workshop: Writing (3)

Advanced work in professional writing, creative or expository. Students will do much writing of their own, will study and apply concepts for analyzing and criticizing the writings of others in the seminar.

552r Poetry Workshop (3)

A course in which students write original poems and criticize each other's work and the work of published poets. Discussion is based on the study of traditional and innovative forms, techniques, and poetic principles, and on the reading of a variety of poetries from around the world.

553 Writing Assessment: Theory and Practice (3)

An overview of significant concepts related to the assessment of writing. An examination of key terms within the assessment field like "validity" and "reliability" as they relate specifically to the evaluation of writing. The phenomenology (a reader's experiential process) of reading and evaluating texts. The importance of context to writing assessment and the way differing contexts (for example: classroom/instructional vs. program or larger-scale) influence assessment goals and practices. Special attention will be paid to interventional or response practices (formative assessment) intended to help students improve writing in addition to evaluation or grading of finished written products (summative assessment).

554 Business and Industrial Writing (3)

Advanced study in the techniques and concepts of expository writing as used in business and industry, in scientific reports, technical analysis, brochures, periodicals, and intramural publications. Attention will be paid to the supervision and administration of such writing functions.

555 Proposals and Prospectus Writing (3)

Theory and practice in writing longer, more complex documents than those included in English 554. In-house proposals, grant proposals, sales proposals, article proposals (queries), scholarly and technical articles, and annotated bibliographies are examples of the types of writing covered in the course.

556 Practice of Teaching Writing (3)

This graduate seminar examines contemporary methods of teaching writing, with examples drawn primarily from the middle and secondary levels. Areas of inquiry will include de-

signing research-based writing curricular, designing effective writing assignments, responding to student writing, teaching in the context of standardized tests of writing and evaluating writing.

557 Teaching College Writing (3)

This graduate seminar is designed for students who are current or potentially future teachers of freshmen writing at UTC or other colleges or universities. We will study contemporary theories and practices of teaching writing at the university level.

558 Composition Studies as Cultural Critique (3)

Composition studies has been marked by a turn toward cultural critique over the past decade. This critical turn draws on theories of Marxism, poststructuralism, feminism, and cultural studies which contend that our subjectivities—the screen through which we perceive reality—are shaped by cultural codes that generally control our behavior and perpetuate the status quo unless we resist the power of these discourses to determine our choices. Advocates of cultural studies and other critical approaches to composition instruction argue that reading and writing involve the negotiation of various discourses driven by these conflicting ideologies; thus, they see the ability to recognize these discourses as an important component of literacy skills.

559r Advanced Internship in Writing (3)

Supervised internship in a professional writing setting related to a student's academic and/or career goals. Approval of internship coordinator during the fall semester is required for spring internships. May be repeated once, with a different internship setting.

562 Literature of England: 1300-1500 (3)

Reading in medieval English literature, including selections from Chaucer and the Gawain-poet as well as debate poems, historical poems, and short religious and secular lyrics. Emphasis on critical approaches to medieval poetry.

563 Chaucer (3)

A critical introduction to Canterbury Tales or to Troilus and Criseyde, with emphasis on reading and translation skills, historical and philosophical background, and critical thinking and writing.

565 Early English Drama (3)

Early English drama (950-1550), including liturgical drama, selections from the Wakefield, York, and other cycles, and the humanist drama of the early Renaissance. Texts are studied in the original Middle English and Early Modern English.

567 Shakespeare: The Career (3)

A study of examples of the plays (comedy, history, tragedy, romance) with attention to stage craft, themes, artistic development, the poetry, poetics, and bibliography.

569 Non-Dramatic Literature of the English Renaissance (6)

Representative works of non-dramatic prose and poetry from the Renaissance period.

571 The Age of Dryden, Pope, and Swift (3)

Readings and studies of selected writings from Restoration and early eighteenth-century England (1660-1745). In addition to Dryden, Pope, and Swift, the course includes such figures as Addison, Steele, Gay, Defoe, Behn, Congreve, and Butler.

572 The Age of Samuel Johnson (3)

Readings and studies of selected poetry, fiction, drama, and prose of middle and later eighteenth-century England (1745-1789), with special emphasis on Samuel Johnson and his circle. In addition to Johnson, includes such figures as Boswell, Gray, Collins, Goldsmith, Reynolds, Burke, and Smart.

573 Development of the British Novel in the 18th and 19th Centuries (3)

Reading and studies tracing the development of the British novel from its origins in the eighteenth century through Dickens, George Eliot, and their contemporaries in the nineteenth century.

574 British Literature of the Romantic Period (3)

Assignments in the principal British authors of the period 1798–1834—Wordsworth, Coleridge, Byron, Blake, Keats, and Shelley—with emphasis on the developing Romantic traditions in English art and thought.

575 Victorian Literature (3)

Assignments in the principal British authors of the period 1834–1900—Carlyle, J.S. Mill, Newman, Tennyson, Browning, Arnold, Ruskin, Dickens, and others—with special emphasis on defining the characteristics of “Victorianism,” as manifested in the representative writings of the period.

576 British Transitional Literature (3)

A critical examination of representative English and Anglo-Irish authors of the period 1880–1920, with emphasis on analyzing the “transition” from late Victorian art and thought to early Modernism.

578 Post-Modern British Literature: 1965–Present (3)

Approximately 1965 marked an epoch in Western culture and witnessed the advent of new cultural models of reality and therefore also new modes and methods of fiction. This course assesses the relevance of this moment to contemporary British literature, whether or not some works seem to fulfill a peculiarly “post-modernist” vision.

579 Modern and Post-Modern American Drama (3)

An examination of major twentieth-century dramatic works, with emphasis on modern and post-modern drama as a reflection of intellectual, political, social, cultural, and economic developments of the twentieth century and their impact on the major modes of twentieth-century theatre.

582 English Literature, Genre: The Short Poem in English (3)

Students study short poems (1-500 lines) in English, in relation to history, genre, techniques (such as meter, structure, imagery, metaphor, figurative devices), meaning, and aesthetic and moral judgment.

585r Seminar in a Major Figure (3)

A seminar course devoted to a major writer in English. The course will consider biography, time and place, relationship to literary history, forms and themes. May be repeated only once, with different content. (See class schedule for current offerings.)

586 Literature in the Elementary School (3)

Primarily for active teachers: consideration of suitable selections, effective methods of teaching, and the use of literature in relation to other subjects, such as history, geography, and social customs. *Prerequisite: permission of the department head.*

587 Teaching Literature in the Middle School (3)

Primarily for active teachers: consideration of suitable selections, effective methods of teaching, and the use of literature in relation to other subjects, such as history, geography, and social customs. *Prerequisite: permission of the department head.*

588 Teaching Literature in the Senior High School (3)

Primarily for active teachers: consideration of suitable selections, effective methods of teaching, and the use of literature in relation to other subjects, such as history, geography, and social customs. *Prerequisite: permission of the department head.*

598r Research Project (3)**599r Thesis (1-6)****Environmental Sciences (ESC)****501r Selected Topics (1-4)**

Study of selected topics and recent developments in the area of environmental sciences. Graded S or NC.

502 Mechanisms in the Environment (3)

This course is designed to provide students a sound background in biological and chemical mechanisms that control terrestrial, aquatic, and atmospheric structure and function. Evaluation of mechanisms will include both organismal, ecological, and global perspectives.

503 Microbial Ecology (4)

A study of microorganisms in their natural environment with regard to microbial evolution, growth, interactions, dispersal mechanisms, ecological significance, and biotechnology applications. Lecture 3 hours, laboratory 2 hours.

504 Bioremediation (4)

A study of the potential use of biological systems in the remediation of areas contaminated with toxic pollutants. Lecture 3 hours, laboratory 2 hours.

505 Biodiversity and Natural Resources Conservation (3)

Study of the ecological principle of natural resources conservation and management, using a problem-solving approach. Scientific assessment of the condition of ecosystems and appropriate management strategies.

506 Advanced Ecology (3)

A study of ecological principles including ecosystem functioning, organismal interactions, and techniques used to model these functions and interactions.

512 Applied Statistics for Environmental Scientists (3)

Application of statistical methods to environmental problems, including sampling designs, hypothesis testing, analysis of variance and nonparametric statistics.

514 Environmental Law and Regulations (3)

Study of the principal pollution control and natural resource laws, including environmental impact assessment and planning laws; laws regulating air pollution, water pollution, and hazardous wastes; law protecting endangered species and wetlands; and international environmental law.

517 Advanced Environmental Law (3)

Advanced study of selected federal and state environmental laws and policies. Students will examine evolving law and policy issues, such as environmental justice, ecosystem management, growth management, urban sprawl, biodiversity, conservation, forest management, mitigation and mitigation banking, and trade and the environment.

518 Case Studies in Environmental Problems (3)

In depth study of the application of environmental law and policy to specific environmental problems using the case study method. Course will focus on four factors in each case study: 1) characterize the environment, 2) identify human modification to the environment, 3) examine law and policy responses to modification of the environment, and 4) critique the responses. Examples of potential case studies include South Chattanooga, Tellico Dam, Pigeon River, Florida Everglades, New Jersey Pinelands, Pacific Northwest Forests, and the Brazilian Pantanal.

521 Seminar in Environmental Ethics (3)

Examination of questions of rights and values which arise from reflection on human beings' relationship to their natural environment. Emphasis on the constructive problem of developing a general environmental ethic.

533 Environmental Genetics (3)

Applications of genetic concepts in three major areas: population genetics, molecular analysis, and management decisions. Includes case studies in application of genetics.

550r Microbiology (3-4 each)

A study of selected topics in microbiology. Topics will be selected from such areas as structure and function of the prokaryotic cell, food microbiology, industrial microbiology, soil microbiology, pathogenic microbiology, microbial metabolism, immunology, and virology. May be repeated when the topics differ.

561 (also GEOG 561) Advanced Applications of Remote Sensing and Geographic Information Systems (3-4)

Use of aerial photography and digital data for practical application and analysis of local environs. Primary systems are ERDAS ARC GIS, and Arcview. *Prerequisites: GEOG 465 or GEOG 466 or their equivalents.*

565 Ecological Toxicology & Risk Assessment (3-4)

Sources, transport, chemical behavior, transformation, and toxicity of environmental contaminants; their impacts on ecosystems, and risk assessment for humans. *Prerequisites: ECS 460 or ESC 502.*

570 Seminar (1)

Presentation of programs of current biological interest by students, faculty, and visiting speakers. Each student will be required to present or take part in discussion of a topic each week. Required during first year in graduate program.

571 Seminar (1)

Presentation of programs of current environmental interest by students, faculty, and visiting speakers. Each student will be required to present or take part in discussion of a topic each week. Required during first year in graduate program.

597r Individual Research (1-3)

Supervised individual projects designed to enable students to study selected topics in depth. A written report research paper is required. *Prerequisites: Admission to candidacy, approval of adviser.*

598r Internship (1-6)

The application of acquired knowledge while working for an appropriate sponsoring organization actively involved in interdisciplinary environmental activities. *Prerequisite: Admission to candidacy, approval of advisor and representative of the sponsoring organization.*

599r Master's Thesis (1-6)

The development of a research based thesis. Department and library copies of thesis required. *Prerequisites: Admission to candidacy, approval of adviser.*

400-Level Courses That May be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

- 406 Limnology and Reservoir Ecology (3)
- 410 Environmental Law and Agencies (3)
- 430 Problems in Environmental Management (3)
- GEOL 445 — Hydrology (3)
- 455 Demographic Analysis (3)
- ESC 460 General Toxicology (3)
- 465 Geographic Information systems (3)
- 466 Remote Sensing (3)
- 480 Seminar on the Environment (1)
- 481 Politics and the Environment (3)
- 482 Technology and the Environment (3)
- 483 Economics and the Environment (3)
- 484 Values and the Environment (3)
- 490 Environmental Studies Senior Project (3)
- 491r Environmental Studies Internship (Specific Agency, etc.) (1-4)
- 496 Environmental Field Camp (3)
- 497r Research (1-4)
- 499r Group Studies (1-4)

Finance (BFIN)

500 Independent Study in Business Administration (1-3)**518 Financial Markets and Institutions (3)**

This course is designed to introduce the wide variety of instruments available for financing projects and controlling risk in today's global economy. Students will become familiar with the operational, regulatory, and transitory characteristics of financial markets and institutions. Topics include the international mon-

etary system; stock, bond, mortgage, futures, and options markets; pension funds; investment firms; commercial banks; insurance companies; and international transactions. *Prerequisite: BFIN 582.*

534 Entrepreneurial Finance (3)

Entrepreneurial Finance will familiarize the student with the formation and financial management of high potential businesses. The course presents a profile of entrepreneurial financial management methods of both successful and unsuccessful entrepreneurs. Topics include the viability of proposed ventures, potential sources of financing, cash flow management, and planning for growth. *Prerequisite: BFIN 582.*

540 Problems in Finance (3)

A case course covering techniques of financial analysis and management of short-term, intermediate, and long-term funds; short-term and capital budgeting as well as capital structure management are included. *Prerequisite: BFIN 582.*

543 Commercial Bank Management (3)

Theory and practice of commercial banking with attention to bank structure, management, loans, investments, and marketing bank services. The influence and setting of central banks, monetary and fiscal policy. Current problems and issues in commercial banking and banking management. *Prerequisite: BFIN 582.*

546 Investments (3)

Theory of investment; classification of media; security analysis; investment market mechanisms; securities legislation; institutional aids to the investor; investment timing; formulation of investment programs. *Prerequisite: BFIN 582.*

576 International Financial Management (3)

This course provides the student with a framework for understanding the fundamental financial and economic influences on international businesses. Emphasis is on understanding exchange rate determination, political risk, hedging of foreign exchange risk, financing of international trade, and short and long term financial decision-making. *Prerequisite: BFIN 582.*

582 Financial Management (3)

The goal of this course is to acquaint all business students with the primary concepts and techniques of financial analysis. The course will build upon the skills obtained in accounting and economics and use those skills for making decisions regarding a firm's use of capital toward the goal of maximizing the value of the firm. It is assumed that all students are familiar with financial statements and basic statistical and economic principles. The first part of the course will develop the tools used in modern financial analysis, including financial statement analysis and valuation techniques. Latter portions will apply these tools to decision-making for long-term (capital budgeting and cost of capital) financial management for both large and small firms. Every semester. *Prerequisite: BFIN 573*

597r Individual Studies (2-4)

Designed to enable students to study selected topics in depth. Requires a written outline of work to be done, a statement describing the competencies to be developed and the method of assessment to be used in evaluation. *Prerequisite: approval of adviser and the Graduate Committee in Business.*

598r Research (3)

Designed to enable students to conduct independent research. *Prerequisites: admission to candidacy, approval of adviser and the Graduate Committee in Business and submission of a formal prospectus two weeks prior to registration.*

Foreign Languages and Literatures (FLNG)

400-Level Courses That May Be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

Classical Civilization

- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

French (FRENCH)

- 401r Special Topics in French Language or Literature (2-3)
- 405 Romance Philology (3)
- 407 Seventeenth Century French Literature (3)
- 409 Eighteenth Century French Literature (3)
- 411 Nineteenth Century French Literature (3)
- 413 Twentieth Century French Literature (3)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

German

- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Greek (GR + LAT)

- 425r Special Topics in Greek Literature (2)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Latin (GR + LAT)

- 425r Special Topics in Latin Literature (2)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Modern Languages

- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Spanish

- 400r Topics in Spanish Literature (3)
- 401r Special Topics in Hispanic Language or Literature (2-3)
- 402r Topics in Spanish American Literature (3)
- 403 Cervantes (3)
- 405 Romance Philology (3)
- 406 Spanish Phonetics and Phonology (3)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Geography(GEOG)

501r Selected Topics (1-4)

Study of selected topics in geography.

515 Regional Environmental Management (3)

Study and evaluation of geologic, topographic, hydrologic and atmospheric factors which potentially and actually have an impact on regional development and management. Special attention given to natural hazards. *Prerequisite: Geography 415.*

525 Regional Land Use and Transportation (3)

Study of the characteristics and patterns of regional land use and transportation. *Prerequisite: Geography 415.*

560 Topics in Remote Sensing (3)

Treatment of the special application of remote sensing to regional land use problems such as strip mining, crop forecasting, mapping, resource evaluation, hydrology, air and water pollution. *Prerequisite: Geography 465.*

561 (also ESC 561) Advanced Applications of Remote Sensing and Geographic Information Systems (3-4)

Use of aerial photography and digital data for practical application and analysis of local environs. Primary systems are Ebditic and ArcInfo. *Prerequisites: Geography 465 or Geography 466 or their equivalents.*

400-level Courses That May Be Taken for Graduate Credit

- 407 Environmental Conservation (3)
- 409 Economic Geography (3)
- 415 Urban Geography (3)
- 465 Remote Sensing and Imagery Analysis (3)
- 466 Geographic Information Systems (3)
- 480 Geography Seminar (1)
- 496r Geography Field Camp (1-6)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Geology(GEOL)

501r Selected Topics (1-4)**510 Application of Thermodynamics to Real Systems (3)**

Special use of thermodynamic principles to natural systems beyond the range of theoretical study. *Prerequisite: 406 or equivalent.*

530 Coal Sedimentation and Stratigraphy (3)

Focus is on the stratigraphic and sedimentological factors of coal strata in the coal provinces of the world, especially of the eastern U.S. Interpretation of rock record as to paleodepositional environment. *Prerequisite:* 431.

535 Problems of Coal Economics (2)

Consideration of coal quality, quantity and other relevant geologic conditions which establish economic constraints on coals extraction.

400-level Courses That May Be Taken for Graduate Credit

- 405 Principles of Geochemistry (4)
- 407 Dynamic Earth (4)
- 431 Sedimentary Petrology (3)
- 436 Fossil Fuels (4)
- 445 Hydrology (3)
- 450 Economic Geology (3)
- 451 Structural Geology (4)
- 452 Field Methods in Structural Geology (4)
- 454 Geologic Mapping (3)
- 474 Water Quality Survey (3)
- 480 Geology Seminar (1)
- 490 Senior Seminar (2)
- 496r Geology Field Camp (1–6)
- 497r Research (1–4)
- 498r Individual Studies (1–4)
- 499r Group Studies (1–4)

Health and Human Performance (ATTRN)

Health and Human Performance (EHLS)**500 Athletic Training Techniques (3)**

Introduction of athletic training skills and techniques such as taping, wrapping, bracing, immobilization, splinting, transporting, non-weight bearing techniques and preparticipation examinations. Includes laboratory experiences.

505 Management of Exercise Science, Health, and Leisure Studies (3)

This course presents a comprehensive overview of the management of sport. Its content (organizational theory of sport, group decision making, labor relations, sport politics and ethics, sport licensing, budget and finance) is presented through case study and practical application.

506 Legal and Ethical Issues in Sports Medicine (3)

This course presents a comprehensive overview of ethics and the law as they apply to sport. Fundamental legal and ethical principles that most directly affect the actions and activities of sports professionals will be presented by selected case studies.

507 Sociology/Psychology of Sport (3)

Emphasis upon exercise science and leisure sport as a socio-cultural psycho-cultural force; psychological/sociologic concepts applied to exercise science, leisure studies, and sport. Seminar setting.

510 Advance Interpretation of ECG (3)

Further study of EKG interpretation including myocardial infarction, stress testing and clinical implications for the rehabilitative process.

511 Therapeutic Agents Lab (1)

This lab accompanies EHLS 512 - Therapeutic Agent in Rehabilitation. The student will learn psychomotor skills by applying various therapeutic modalities in a practical environment. Proper SOAP not documentation will be presented to properly record modalities in a clinical setting. Critical thinking skills will be applied by the student in the determination of the frequency and protocol development for each modality technique.

512 Therapeutic Agents in Rehabilitation (3)

A course designed to teach theoretical applications of therapeutic modalities in the treatment of athletic injuries and conditions. Scientific/physiological rationales will be provided along with selection criteria, indications, contraindications and clinical applications.

513 Therapeutic Exercise in Rehabilitation (3)

A classroom and practical study in the appropriate use of therapeutic rehabilitation techniques for athletic injuries, encompassing scientific/physiological rationales, selection criteria, indications/contraindications, clinical applications, and psychological aspects of rehabilitation.

514 Lower Extremity Lab (1)

This lab accompanies EHLS 581 Lower Extremity Evaluation. The student will learn psychomotor skills by applying various evaluation techniques for injuries to the lower extremities, pelvis and low back. Detailed anatomy, biomechanics, evaluation, including postural assessment, and immediate care will be discussed for formulating clinical impressions and treatment.

515 Upper Extremity Lab (1)

This lab accompanies EHLS 581-Upper Extremity Evaluation. The student will learn psychomotor skills by applying various evaluation techniques for injuries to the upper extremities, thoracic and cervical spine, face and abdomen and thorax. Detailed anatomy, biomechanics, evaluation, including postural assessment and immediate care will be discussed.

516 Rehabilitation Lab (1)

This lab accompanies EHLS 512-Therapeutic Exercise in Rehabilitation. The student will learn psychomotor skills by applying various therapeutic exercises in a practical environment. Proper SOAP note documentation will be presented to properly record exercises in a clinical setting. Critical thinking skills will be applied by the student in the determination of the frequency and protocol development for each exercise technique.

517 Advanced Clinical Exercise Physiology (3)

An analysis of the complex interrelationships of organ systems relative to exercise training with an emphasis on athletes and the role of exercise in rehabilitation. *Prerequisite:* Graduate standing, EHLS 316, 317, or equivalent.

518 Advanced Exercise Prescription (3)

Comprehensive overview of the physical, physiological, and metabolic responses of the human body to exercise testing and training both in health and disease. An overview of environmental and legal considerations in the prescriptive process will also be discussed. *Prerequisite:* Graduate standing, EHLS 316, 317, or equivalent.

519 Pediatric/Adolescent Exercise Physiology (3)

A comprehensive overview of the physical, physiological, and metabolic responses of children and adolescents to exercise training and participation. *Prerequisite: Graduate standing, EHLS 316, 317, or equivalent.*

520 Cadaver Anatomy of the Trunk and Extremities (4)

Prosection of human cadavers with emphasis on the musculoskeletal, articular, nervous and vascular systems. Prosection experiences will be supplemented with classroom lectures. The role of anatomical structures as they relate to athletic injury mechanism, evaluation and rehabilitation will be emphasized.

521 Pathomechanics and Assessment (3)

Advanced techniques of assessing static and dynamic posture, gait, pelvis and low back dysfunction and muscular imbalances. There is a substantial emphasis on biomechanical principles of tissue types as they relate to injury prevention and etiology of pathology. There is also a unit on occupation medicine. Includes lecture and laboratory sessions.

522 Functional Rehabilitation Concepts I (3)

This course is designed to provide the athletic trainer with advanced knowledge and skills that relate to modification of physiological process associated with musculoskeletal injury, pain and tissue repair for the purpose of restoring optimal musculoskeletal function in individuals who engage in physically demanding activities.

523 Functional Rehabilitation Concepts II (3)

This course is designed to provide the athletic trainer with the opportunity to acquire knowledge and skills that relate to the process of rapidly restoring optimal musculoskeletal function after injury and procedures for protection of healing tissues during participation in physically demanding activities.

524 Seminar: Current Research Issues in Health and Human Performance (2)

Discussion of current trends and issues in research in sport medicine and related professions. The primary objective of this course is to facilitate the student's identification of a research topic for a thesis or project. Additional topics will include ethical considerations of research, thesis committee selection, literature reviews and other topics that will assist the student in the research process.

525 Observation Experience (3)

Supervised off-campus on-the-job learning experience designed to provide students opportunities to observe in a private clinic, educational setting, sports organization involved in athletic health care, emergency room or other related healthcare settings. Application must be approved one semester in advance. *Prerequisite: EHLS 514, 515, 527, 553, 563, 581, 582.*

526 Clinical-Industrial Business Principles (3)

This course is designed to provide athletic trainers and health promotion students with the opportunity to acquire knowledge and skills that relate to clinical and corporate roles and the rapidly changing nature of administrative responsibilities in the scholastic, collegiate and professional sports settings.

527 General Medical Aspects in Athletic Training (3)

This course in an overview of the knowledge, skills and values that the entry-level athletic trainer must possess to recognize,

treat and refer when appropriate, the general medical conditions and disabilities of athletes and others involved in physical activity.

529 Laboratory Methods and Procedures in Exercise Physiology (3)

This course is a combination of lecture and lab. It is designed to be a complementary class to EHLS 517 Clinical Exercise Physiology. Its purpose is to give the student hands on experience with both the acute and chronic physiological changes that result from exercise.

530 Assessment of Worksite Health & Human Performance (3)

An integrated, step-by-step approach to planning for, implementing, and assessing worksite health and human performance in a variety of settings.

535 Promotion of Worksite Health and Human Performance (3)

An integrated, step-by-step approach to planning for, implementing, and evaluating worksite health and human performance programs in a variety of settings.

536 Principles and Practices of Managing Lost Time and Healthcare Costs (3)

This course will examine issues and strategies that research has demonstrated to be beneficial in managing lost time and healthcare costs.

541 Exercise and the Older Adult (3)

Examines the scientific evidence concerning the relationship between physical activity level and physical, mental, and social-psychological well being during aging.

545 Cardiopulmonary Rehabilitation (3)

This course details the functions of the cardiovascular and respiratory systems emphasizing pathophysiology and treatment. Special reference will be made to exercise as a mode of therapy.

553 Athletic Training Practicum I (3)

This course is the student's first clinical rotation in the ATEP. The student will integrate psychomotor skills/clinical proficiencies learned in the didactic component of the program in the clinical setting under the direct supervision (physically present) of an approved clinical instructor (ACI). This practicum course will be administered from a clinical/laboratory and the students will learn the professional aspects of athletic training as well as the day-to-day operation of an athletic training facility, including basic record keeping and facility maintenance. There will be a lecture component in this course. *Prerequisites: Exercise Physiology, EHLS 500 and Permission of ATEP-Director.*

556 Research Methods in Exercise Science and Health (3)

This course is designed to provide the athletic trainer with knowledge that relates to sports medicine research, including critical analysis of published research in the field and preparation of a research proposal.

557 Pharmacology and Fitness Testing (3)

Students will learn how to properly administer and interpret fitness tests. Students will learn how to screen individuals to determine the appropriateness and safety of test administration. This

includes being able to perform aerobic fitness tests, strength measures, musculo-skeletal endurance, body composition, flexibility and balance. Students will then learn how to properly interpret data from the exercise test.

563 Athletic Training Practicum II (3)

This course is the student's second clinical rotation in the ATEP. The student will continue to integrate clinical skills learned in the didactic component of the program into the clinical setting under the direct supervision (physically present) of an approved clinical instructor (ACI). This practicum course will be administered from a clinical/laboratory setting on campus. The student will build on skills and responsibilities from Practicum I and will learn and apply psychomotor skills/clinical proficiencies from the NATA Competencies in Athletic Training. There will be a lecture component in this course. *Prerequisites: Sports Psychology/Sociology, EHLS 553 and Permission of ATEP-Director.*

565 The Psychological Impact of Injury, Illness and Chronic Disease (3)

The exploration of how an adult copes with an acute injury, illness or chronic disease. Critical review of the psychological, vocational, and the social implications involved in such conditions as chronic pain, coronary artery disease, orthopedic trauma, cancer, rheumatoid arthritis, and a range of functional somatic disorders.

573 Athletic Training Practicum III (1)

This course is the student's third clinical rotation in the ATEP. Students will be responsible for assisting in the healthcare of athletes during practices, games, and treatment and rehabilitation under the supervision of an ACI or CI either on campus or at an off-campus affiliate site. The student will apply new skills learned in the didactic component of the program. The students will also build on the psychomotor skills/clinical proficiencies and responsibilities from Practicum II. There will be a lecture component in this course. *Prerequisites: EHLS 563 and Permission of ATEP-Director.*

575 Research in Exercise Science, Health, and Leisure Studies (1-4)

Investigation of problems of an individual; professional nature relating to areas of exercise science, health, or leisure studies. *Prerequisites: Graduate standing, EDAS 501, EHLS 401, and approval of department head.*

578 Internship in C/I Health & Human Performance (6)

Supervised internship in leadership and administrative positions in worksite health and human performance. Full time contact, minimum eight weeks, concurrent integrative seminars. Every semester. *Prerequisites: All course work completed except EHLS 598 or 599, CPR certification.*

581 Lower Extremity Evaluation (3)

A classroom study in clinical evaluation of lower extremity, pelvis and low back injuries and conditions commonly sustained by the physically active. Emphasis is placed on proper evaluation for the purpose of 1) administering first aid and emergency care and 2) making appropriate referrals to physicians for diagnosis and medical treatment.

582 Upper Extremity Evaluation (3)

A classroom and practical study in clinical evaluation of upper extremity, thoracic and cervical/spine, face, abdomen and thorax injuries and illnesses commonly sustained by the physically

active. Emphasis on proper evaluation for the purpose of 1) administering proper first aid and emergency care and 2) making appropriate referrals to physicians for diagnosis and medical treatment.

583 Advanced Athletic Training Practicum (3)

This course is the student's fourth and final clinical rotation in the ATEP. Students will be responsible for assisting in the healthcare of athletes during practices, games, and treatment and rehabilitation under the supervision of an ACI or CI either on campus or at an off-campus affiliate site. The course is designed to provide the student with a means to integrate and augment all concepts, skills and knowledge covered in the curriculum. In addition to lecture and clinical proficiency evaluation, much of this course is discussion based and requires the students to be fully participative. This course discusses the planning, coordination, and supervision of all administrative components of an athletic training program. Administrative/leadership skills will be emphasized.

596 Pre-Thesis (3)

This course is designed to facilitate graduate research in the area of athletic training and/or allied health. Although the class will meet as a group on a number of occasions, work in this course will largely develop out of individual research efforts and through individual meetings with the instructor. The instructor will help to refine the topic, guide toward appropriate research resources, and give written and oral feedback at the various stages of the thesis.

597r Individual Studies (2-4)

To enable a student to study a selected topic in depth; requires a written outline of work to be done, a statement describing the competencies to be developed, and the method of assessment to be used in evaluation. *Prerequisites: approval of adviser and the department head.*

598 Research (3)

Designed to enable students to conduct independent research. *Prerequisites: admission to candidacy and approval of advisor.*

599r Thesis (3-6)

This course is designed to guide selection of a research problem, review of pertinent literature, collection and analysis of data, and composition of a thesis. Students will design a research project, locate and evaluate relevant information, and present research findings according to graduate/professional standards. A total of six hours of credit is awarded over two terms.

400-Level courses that May Be Taken for Graduate Credit

Several 400-level courses are available in the Exercise Science, Health, and Leisure Studies Department which may be taken for graduate credit. These courses may be used to satisfy requirements in some degree programs, subject to the approval of the student's major department and the Graduate School Office.

There must be a substantial difference in expectations and work performance for graduate students in combined undergraduate/graduate courses. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students. This statement must also be recorded on the 400-level form that is submitted each semester to the Graduate School office for each student seeking graduate credit.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

400 Current Topics and Problems in Exercise Science and Sport (3)

Investigation and exploration of selected topics and problems in exercise science and leisure sports significant for pedagogy, management, coaching in both schools and agencies providing sport and leisure services. Summer. *Prerequisites: senior level and approval of instructor; or graduate standing.*

401 Measurement and Evaluation in Exercise Science and Leisure Sports (3)

Introduction to basic statistics, measurement, evaluation, tests of neuromuscular ability, muscular strength and endurance, balance, flexibility, motorability, health related fitness; grading, constructing knowledge tests, measurement of human ability and instructional outcomes. Fall semester. *Prerequisites: Equivalent of EHLS 201, 332; MATH F120; senior level or approval of instructor; or graduate standing.*

402 Philosophical Foundations of Exercise Science and Sport (3)

Identification and implication of prominent philosophical schools of thought as they impact the professional decision making in exercise science and sport; emphasis upon development of a philosophical process, logical thinking, values clarification, and moral implications. On demand. *Prerequisite: senior level or graduate standing.*

404 Motor Learning in Exercise Science and Leisure Sport (3)

Conceptual understanding of the principles of performance of motor skills to include information processing and the functional properties of the motor system. On demand. *Prerequisite: EHLS 317 or approval of instructor.*

405 Management of Athletics and Leisure Sport (3)

Management principles, information retrieval and processing, sport law, public relations, personnel direction, faculty development, and financial administration as they relate to sport, athletics, and leisure services. Spring semester. *Prerequisites: EHLS 304 or 332; approval of instructor; or graduate standing.*

407 Sociology/Psychology of Exercise Science & Leisure Sports (3)

Emphasis upon exercise science and leisure sport as a socio-cultural psycho-cultural force; psychological and sociological concepts applied to human performance in exercise and sport. *Prerequisite: senior level or graduate standing.*

408 Seminar, Current Advances in Bio-Kinetics (3)

Current advances in kinesiology and physiologic principles of exercise science athletic coaching, and sport. On demand. *Prerequisite: equivalent of EHLS 317 or 318; approval of instructor; or graduate standing.*

417 Advanced Exercise Physiology (3)

This course details the function of organ systems emphasizing mechanisms of control and regulation during exercise. Fall semester. *Prerequisites: BIOL 208, 209, CHEM 122, EHLS 317, and approval of instructor.*

418 Exercise Prescription in Health and Disease (3)

This course presents a comprehensive overview of the physical, physiological, and metabolic responses of the human body to exercise testing and training in both health and disease; the processes involved in prescribing safe and effective therapeutic exercise for healthy individuals as well as for patients with heart and lung disease, diabetes, and obesity will be discussed. Spring semester. *Prerequisites: EHLS 316, 317 and approval of instructor.*

436 Exercise Science and Health Promotion for the Developmentally Challenged (3)

Lecture, demonstration, and practical experiences in the study of exercise, health, and leisure sport and their implications for the developmentally challenged; emphasis on methods and techniques for teachers, coaches, and exercise leaders in meeting the legal, ethical, and moral obligations of the developmentally challenged. *Prerequisites: equivalent of EHLS 302 and junior level; or graduate standing.*

451 Family Life Studies (3)

Extended study of problems and issues related to family life and human sexuality; development of learning units for use in schools and community.

452 Aging, Dying, and Death Studies (3)

Analysis of concepts and attitudes toward aging, death, bereavement, prevention and control of communicable and degenerative diseases.

453 Substance Use, Misuse, and Abuse (3)

Extended study of problems and issues related to use, misuse, and abuse of alcohol and other drugs; development of learning units for use in schools and community. Fall and Spring semesters.

455 Methods and Strategies in School Health Education (3)

Investigation of current curricula and teaching strategies employed in health education. Fall semester alternate years.

456 Research Methods in Exercise Science and Health Promotion (3)

Study of health problems and current professional literature; review of new approaches in techniques and methodology used in health research. Spring semester. *Prerequisite: approval of instructor or EHLS senior or graduate standing.*

470 Current Topics and Issues in Leisure Studies (3)

Survey of problems and concerns facing recreation leadership; management, facilities development, environmental impact, and special population groups. *Prerequisite: junior level standing or above.*

479, 480 Internship in Leisure Studies (6,6)

Supervised internship in leadership and administrative positions; full-time contact, minimum eight weeks, concurrent integrative seminars. *Prerequisite: approval of program leader and EHLS department head.*

490r Workshop and Seminar (2-4)

Special problems; inservice education for specific groups; research in professional literature and evaluation measures to topics studied.

History(HIST)

501r Special Topics in History (3)

Courses on selected topics in American, European, or non-Western history, designed for graduate students pursuing the M.Ed. in secondary education.

508r Historical Problems (1-6)

Directed readings and study in historical problems. *Prerequisites: graduate status and permission of instructor. Maximum credit six hours.*

400-Level Courses That May be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

411, 412 American Intellectual and Social History (3,3)

415, 416 Economic History of the United States (3,3)

419 The City in American History (3)

421 European Women's History to 1800 (3)

497r Research (1-3)

498r Individual Studies (1-3)

499r Group Studies (3)

Human Ecology(HECO)

534 Advanced Clinical Nutrition (3)

The study of diet as it relates to prevention and treatment of disease. Impact of disease on cellular organelles and biochemical pathways related to nutrients. Experiences in nutritional assessment techniques. Dietary calculations for obesity, diabetes mellitus, cardiovascular disease, and gastrointestinal disorders. *Prerequisites: HECO 135 and permission of instructor. Recommended: HECO 434.*

535 Cellular Nutrition (3)

A highly intergrated view of nutrient roles at the cellular and subcellular level. Emphasis on the multiplicity of functions of nutrients. Review of current literature in the expanding roles of phytochemicals and functional foods in health promotion. *Prerequisites: HECO 135 and permission of instructor. Recommended: HECO 335.*

536 Advanced Sports Nutrition (3)

The integration of nutrition at the cellular level related to physical performance requirements during activity. Assessment of nutritional needs of athletes and effects of dietary alteration and

nutrition supplements on performance. Individual client cases will be presented in a grad rounds format by students. *Prerequisites: HECO 135 and permission of instructor. Recommended: HECO 336.*

400-Level Courses That May Be Taken for Graduate Credit

Several 400-level courses are available in Human Ecology which may be taken for graduate credit. These courses may be used to satisfy requirements in some degree programs, subject to the approval of the major department and the Graduate School Office.

There must be a substantial difference in expectations and work performance for graduate students in combined undergraduate/graduate courses. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students. This statement must also be recorded on the 400-level form that is submitted each semester to the Graduate School office for each student seeking graduate credit.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

412 Historic Textiles (3)

The development of textiles from ancient times to the twentieth century with emphasis upon fiber, color application, fabric construction, and design motif particular to select countries or cultures; includes conservation and display techniques appropriate for historic textiles. Spring semester. *Prerequisite: HECO 226**

430 Food System Administration I (3)

Management, organization, administration of food service in institutions. Fall semester. *Prerequisite: HECO 135 Alternative Years.*

431 Quantity Food Service (3)

Principles, methods, and techniques in planning, purchasing, production, and service of food in quantity; selection and use of equipment; quality standards; laboratory experiences in approved local institutions. Spring semester. Alternative Years. *Prerequisites: HECO 430 or HECO 432.*

432 Food Systems Administration II (3)

A continuation of 430 with emphasis on production, manpower, facility, and financial planning in food service and hospitality systems. Fall semester. Alternative Years. *Prerequisite: HECO 135.*

434 Perspectives in Clinical Nutrition I (3)

The study of diet as it relates to prevention and treatment of disease. Experience in nutritional assessment techniques. Dietary calculations for obesity, diabetus, cardiovascular disease, and gastrointestinal disorders. Fall semester alternate years. *Prerequisite: HECO 135, BIOL 208, 209. Pre or corequisite: HECO 335.*

436 Perspectives in Clinical Nutrition (3)

The study of diet and disease; application of appropriate nutritional therapies for endocrine disorders, hypemetabolic condi-

tions, immune system disorders, pulmonary diseases, cancer, liver, and renal disease. Spring semester. *Prerequisites: HECO 434.*

445 Families: Home, School, Community Partnerships (3)

A study of the family system as it assumes the child rearing function and parents the developing child throughout the stages of the family life cycle. Special attention is given throughout the stages of parent-professional, parent-community relationships and skills and approaches for building successful partnerships with families. Includes the study of families with "special" circumstances, and how professionals can be supportive and facilitative. Every semester. Field component.

497r Research (1-4)

498r Individual Studies (1-4)

499r Group Studies (1-4)

**HECO 226 has prerequisite of HECO 222 which as a prerequisite of 120.*

Humanities (HUMAN)

400-Level Courses That May Be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

497r Research (1-4)

498r Individual Studies (1-4)

499r Group Studies (1-4)

University Studies

Professor Burhenn, Head

400-level Courses That May Be Taken for Graduate Credit

499r Interdisciplinary Studies (1-4)

Learning and Leadership (EDD)

710 Leadership Perspectives and Reform (3)

This course is an overview of basic concepts and theories of leadership. The primary focus of the course is for participants to use leadership theory to analyze various situations and create and apply solutions grounded in leadership theory. In addition, participants will engage in several self-assessments of their own leadership style preferences, and will evaluate their potential effectiveness as a leader based on identified strengths and weaknesses.

**The schedule for the dissertation process is not included because it is highly flexible and individualized*

*** The Individual Learning and Leadership Plan (ILLP) is ongoing throughout the program.*

711 Organizational Development and Policy (3)

This course is an overview of schools as learning organizations, including organizational theory, systems theory, human resources development, community relations, policy development and resource development.

720 Ethical and Moral Bases of Education (3)

Schooling is a moral enterprise and particular problems in schools often have an ethical dimension. This course provides an overview of the major ethical theories in the history of philosophy and their application in several major issues experienced in schools; e.g., punishment, intellectual freedom, equity, social justice, diversity, and due process. This is an applied ethics class in that much of the instruction involves the analysis of case studies.

721 Twentieth Century Reform in American Schooling (3)

The history of educational reform can be understood in the context of three developments: socio-political change, the occupation of educational administration, and movements to change the curriculum. Understanding of this history is accomplished through the reading of primary texts, independent study of particular aspects of this history, and class discussion.

730 Educational Research (3)

Educational research is both quantitative and qualitative in nature. This course provides an overview into methodologies and practices associated with such research. This course is an application of techniques and processes used in addressing a significant issue for a group with which the participant is affiliated. The product is a research paper properly formatted and documented in APA style.

731 Topics in Statistics (3)

Topics in statistics will be taught using a combination of readings, problems, web sites, and distance learning. Much of the traditional analyses of data sets will focus on statistical data sets representing schools, systems, participants, and teachers. These data sets are available from electronic archives representing collections by federal and state government, higher education, and educational research agencies. The emphasis is on real life data, data that has been cleaned and exported from a school or system on topics such as achievement, gain, school climate, and school government.

740 Contemporary Visions of Human Learning (3)

This course will provide an overview of and reference for contemporary views of human learning. Emphasis will be placed on the development of sufficient background to guide instructional efforts in educational settings. Major models of learning theory will be discussed and participants will demonstrate advanced skills in two major theoretical models.

750 Curriculum Models and Institutional Design (3)

This course will offer students the opportunity to investigate supervision theories as well as curriculum models. This course will offer participants the opportunity to become acquainted with important models of curricular design and with issues related to curriculum and instruction. The focus will be on gaining a broad base of knowledge about several curriculum models and about the theories and characteristics of each. Students will develop signifi-

cant knowledge about and will demonstrate proficiency in evaluating factors related to curriculum models which may be implemented in schools. Specific emphasis will be given to the interrelated nature of supervision theories in education settings and their impact on curriculum. In addition, relevant research and best practices will be explored with an effort to relate these specifically to the school situation.

751 Curriculum Implementation, Governance and Assessment (3)

The purpose of this course is to explore the foundations, design, development and implementation of curriculum in preK-12 and other settings and to examine the administrators', teachers', and leaders' roles in curriculum decision-making, development and implementation. Students completing this course should be able to apply the concepts and information in an appropriate fashion to an educational setting. In addition, the role of the supervisor in curriculum development and faculty effectiveness will be studied.

760 Program Evaluation (3)

This course will introduce the learner to the background and theory of program evaluation applied to educational settings. Participants will investigate the various models that have emerged, will determine the relative merits of each model and its suitability and requirements in specific educational evaluation activities. Building upon these attained competencies the participant will develop and complete an evaluation design within an educational setting.

761 Educational Assessment (3)

This course will discuss contemporary individual and group approaches to the assessment of learners. Traditional assessment models will be examined and critiqued and more novel approaches will be discussed. Strengths of each approach will be described and the utility of each will be examined in reference to the desired outcome of the planned measurement.

762 Program Evaluation in Schools (3)

This course will provide an opportunity for the student to evaluate school settings from the multiple vantage points of learning theory. Students will be expected to apply concepts acquired in EDD 760 to the requirements of the course.

770 Dissertation Seminar (3)

This represents an intense investigation of the dissertation process. Its purpose is to focus upon the development of a student's knowledge base and ability to undertake scholarship. The purpose is to prepare the student to understand and create scholarship through intellectual endeavor and the use of research skills as they embark upon the completion of their dissertation.

780R Dissertation (3-12)

Each doctoral participant must complete a dissertation as a major requirement for the Ed.D. degree. The dissertation topic will be selected by the candidate with the advice and approval of the participant's dissertation committee. The participant must present a dissertation proposal describing the research project for review and approval by the committee prior to beginning work on the dissertation. The candidate will confer frequently with the dissertation committee for mentoring and advice throughout the process. The dissertation is the primary means by which the candidate demonstrates proficiency as an independent scholar.

Course syllabi have been developed for all new courses in the program. They are provided in Appendix C.

Legal Assistant Studies (LAS)

400-Level Courses That May Be Taken for Graduate Credit

- 400 Intellectual Property (3)
- 410 Employment Law (3)
- 420 Legal Issues in Health Care (3)

Management (BMGT)

500r Independent Study in Business Administration (1-3)

511 Business Research Methods (3)

An introduction to research methodology with emphasis upon the compilation, analysis and interpretation of data. Experiment design, research instruments and resources, sample theory and design, parametric and nonparametric tests for significance, statistical inference. Research reports. *Prerequisite: BMGT 571.*

514 Business Database Systems Management (3)

Discussions of various business database system management issues such as relative advantages and disadvantages of database approach and file approach to data management, database planning, database design methodology, logical database design, physical database design, and the other database administration functions. Survey of database technology applications trends as related to business domains, including coupling of expert systems and database management systems and using database for decision support. *Prerequisite: BMGT 584 or consent of the instructor.*

515 Business Knowledge-Based Systems Management (3)

Survey of principles, concepts, and techniques for knowledge-based systems management from the business perspective. Exploration of strategic significance of knowledge-based systems in the effort to gain and sustain competitive advantage. Introduction to knowledge representation mechanisms and issues relating to knowledge-base verification and validation. Hands-on experience with knowledge engineering using user-friendly expert system development tools. *Prerequisite: BMGT 584 or consent of the instructor.*

516 Business Data Communications (3)

Survey of technical aspects of data communications and the related managerial issues concerning computer network management. Discussion of layered network architectures and communication protocols at various abstraction levels. Overview of features of local area networks and wide area networks. Examination of system analysis techniques for business computer network design. *Prerequisite: BMGT 584 or consent of the instructor.*

517 Business Information Systems Development (3)

Survey of techniques and methodologies for user requirements analysis and systems design in development of business information systems. Examination of strategies for improvement of systems development productivity. Introduction of directions of new technological development, such as object-oriented paradigm and knowledge-based approach, from the business applications perspective. Discussion of various practical issues including controls and security, implementation strategies, integration with other systems, and system maintenance problems, etc. *Prerequisite: BMGT 584 or consent of the instructor.*

525 Organizational Behavior Theory and Practice (3)

An examination of the theoretical and research foundations that explain behavior within the context of formal organiza-

tions. Topics covered include perception, attitude, motivation, personality, stress, group behavior, leadership, and organizational development. *Prerequisite: BMGT 575 or equivalent.*

526 Business Leadership (3)

In-depth coverage of the theories, skills and issues related to effective leadership practice in business organizations. Exploration of individual leadership strengths and weaknesses, ethical issues for leaders, and the roles leaders play in organizations. *Prerequisite: BMGT 575 or consent of the instructor.*

527 Organizational Theory (3)

Advanced concepts of organizing, structuring, and managing an organization are addressed within both a profit and a not-for-profit environment. Topical material presented in lecture format will be combined with case oriented seminars to involve the student in practical concepts of organizational design. *Prerequisites: BMGT 575 or permission of the instructor.*

528 Industrial Relations and Human Resource Management (3)

A course designed to acquaint the student with the general principles of personnel management and industrial relations including the legal aspects of employment and union management relations. Course will use lecture, cases, readings, and a term paper.

529 EEO Management (3)

The aim of this course is to provide students with a knowledge of equal employment opportunity requirements and their impact on personnel and management practices. Emphasis on laws and regulations pertaining to race, sex, religion, national origin, age, and handicap discrimination. *Prerequisites: personnel course (Business Management 332 or 528) or permission of the instructor.*

530 Communication Across Cultural Boundaries (3)

This course is designed to improve communication skills for the student's self-development and for communicating in business. It is primarily concerned with the following three areas: The process of communication, oral reports, briefings, presentations to groups as well as conferences and meetings, and business letters. Students will be introduced to the international aspects of communication by conducting a short report by interviewing workers in multinational companies as to barriers related to business communication.

538 International Management

This course is designed to provide fundamental knowledge of contemporary managerial problems as presented in foreign-influenced environments. Uniqueness of problems in planning, control, choosing foreign associates, plant locations, labor bureaucracy, legal constraints, and trade with foreign governments will be highlighted by text and through discussion of articles from current business periodicals. *Prerequisite: BMGT 575 or instructor's permission.*

540 Managing Innovation (3)

An in-depth study of the phenomenon of innovation—its nature, process, and typology. Examination of the innovation process in its varied manifestations. Skills related to innovation will be studied along with the case histories of successful innovators. The creation and nurturing of new organizations around innovative product ideas will be examined. Discussion of various issues including corporate culture, team based participation, strategy,

entrepreneurship, and marketing as they impinge on the innovative phenomenon. *Prerequisites: BMGT 584, BMKT 586, BACC 585, and BFIN 582 or consent of instructor.*

555 Management Science (3)

A quantitative approach to business decision making. Model construction, algebraic models, E.O.Q. and break even. Certainty models, linear, integer and dynamic programming. Statistical models, simulations, stochastic processes, P.E.R.T. and network analysis. Game theory and elementary queuing theory. *Prerequisites: BMGT 571, 576 or equivalent.*

570 Problems in Operations Management (3)

This case study course should strengthen the skills and abilities of the student in three areas: (1) describing and understanding the operating process, (2) measuring and analyzing this process, and (3) developing and evaluating plans for changing the operating process within the context of the entire organization and its strategies. *Prerequisite: BMGT 576 or equivalent.*

571 Business Statistics (3)

The course presents statistical concepts and their application for managerial decision-making. Computer based statistical analysis and the application of the insights gained through such statistical analysis for developing effective business decisions will be integrated into every aspect of the course. Topics addressed include organizing and summarizing data using databases, queries, graphical and tabular presentation of data using spread sheets, probability theory and sampling distributions integrated with analysis of data, estimation and hypothesis testing for one and more than one populations, correlations, and regression analysis, and introduction to quality control.

573 Business Law and Ethics (3)

This course is intended to trace the historical foundations of business ethics and deeply examine the moral, legal, and economic perspectives that guide decision-making in this area. This course uses a case-based approach to help students understand the legal rules, regulations and process that affect business decision-making as well as the ethical implications of managerial decisions.

575 Human Behavior and Organizations (3)

The course is designed to be an introduction to general management and organizational behavior. The process of planning, organizing, staffing, and directing will be examined with emphasis on their relationship to organizational effectiveness within an international framework. Upon successful completion of the course, the student should be better able to manage the physical, technical, and human resources of an organization.

581 Management of Information Systems (3)

This is an introductory course designed to familiarize students with managerial aspects of information technology in business organizations. The course provides a balance between technical and managerial aspects of information systems. Technical topics include hardware, software, databases, telecommunications and the Internet. Managerial aspects include Electronic Commerce, using IT for competitive advantage, knowledge management, decision support systems, and business process redesign.

583 Production and Operations Management (3)

Topics addressed include production process selection; capacity scheduling; inventory management; product and process quality control issues; supply chain management; service operations management; and project scheduling. Every semester. *Prerequisite: BMGT 571.*

584 Management Applications (3)

This course focuses on the learning and application of interpersonal and communication skills that are necessary for effectively managing people in the workplace. As such is a highly interactive course that will make extensive use of group case analysis and role-playing. *Prerequisite: BMGT 575 or equivalent.*

597r Individual Studies (2-4)

Designed to enable students to study selected topics in depth. Requires a written outline of work to be done, a statement describing the competencies to be developed and the method of assessment to be used in evaluation. *Prerequisites: approval of adviser and the Graduate Committee in Business.*

598r Research (3)

Designed to enable students to conduct independent research. *Prerequisites: admission to candidacy, approval of adviser and the Graduate Committee in Business and submission of a formal prospectus two weeks prior to registration.*

599r Thesis (3-6)

The development of a product of thesis magnitude and quality. Department and library copies of thesis required. Registration to be completed in one term or in two consecutive terms. *Prerequisites: admission to candidacy, approval of adviser and the Graduate Committee in Business and submission of formal prospectus two weeks prior to registration.*

Marketing (BMKT)

Business Marketing Courses for Graduate Students Only

Only students admitted to UTC as degree or transient graduate students may take 500-level business courses. A selection of the graduate business courses is offered in the evening each semester including the summer.

500 Independent Study in Business Administration (1-3)**540 Entrepreneurship and New Ventures (3)**

This course is designed to investigate the entrepreneurial process from a variety of perspectives. The primary focus is the activities that occur from conception to the birth of a new venture, although issues of report growth and harvest will also be covered. *Prerequisites: BFIN 582, BACC 585, BMGT 584, and BMKT 586.*

545 Family Business Concepts and Practice (3)

Critical issues in family business are covered with incidents, tools, readings, and selected cases to illustrate those issues. There will also be a comprehensive review of research studies and practices in the management of family businesses.

563 E-Business: Managing the Strategic Marketing Process (3)

The Internet has emerged as a key tool with computer mediated business environments changing traditional business models. This course provides hands-on coverage of the tools, terminology and strategic decision-making involved in e-business. Managing

the strategic marketing implications of the Internet will be examined across a range of organizational models—from entrepreneurial startups to small businesses and large corporations, in both for profit and not-for-profit sectors. *Prerequisites: BMKT 574 or equivalent.*

565 Problems in Marketing (3)

An application of marketing tools and concepts to problem solving, decision making, and determination of market opportunity; areas include demand stimulation, channel selection and evaluation, marketing research, pricing, product development, and orchestration of marketing programs. *Prerequisite: BMKT 574 or equivalent.*

566 Seminar in Marketing (3)

Seminar designed to integrate the student's understanding of marketing. A participation seminar based on student papers, invited speakers, and other activities. *Prerequisite: BMKT 574 or equivalent.*

586 – Marketing Management (3)

The goal of this course is to provide a decision-oriented overview of marketing management. This course focuses on the management challenge of designing and implementing marketing strategies that maximize customer satisfaction and firm profitability. Every semester. *Prerequisites: ECON 501 and BACC 572.*

597r Individual Studies (2-4)

Designed to enable students to study selected topics in depth. Requires a written outline of work to be done, a statement describing the competencies to be developed and the method of assessment to be used in evaluation. *Prerequisites: approval of adviser and the Graduate Committee in Business.*

598r Research (3)

Designed to enable students to conduct independent research. *Prerequisites: admission to candidacy, approval of adviser and the Graduate Committee in Business and submission of a formal prospectus two weeks prior to registration.*

599r Thesis (3-6)

The development of a product of thesis magnitude and quality. Department and library copies of thesis required. Registration to be completed in one term or in two consecutive terms. *Prerequisites: admission to candidacy, approval of adviser and the Graduate Committee in Business and submission to prospectus two weeks prior to registration.*

Mathematics (MATH)

Courses for Graduate Students Only**501r Advanced Special Topics (3)**

Concentration in selected fields of study. *Prerequisite: approval of instructor.*

502 Transform Methods (3)

The Laplace and Fourier Transforms and solution methods of boundary and initial value problems in ordinary and partial differential equations, integral equations, and difference equations. Existence and characteristics of these transforms, inversion formulas, special functions, and generalized functions. Construction of other transforms via Sturm-Liouville theory and orthogonality. *Prerequisites: 255, 245 with minimum grades of C and graduate standing, or consent of instructor.*

515 Applied Mathematics for Science and Engineering I (3)

Topics in applied mathematics to be selected from series solution of ordinary differential equations including a treatment of the higher functions; Legendre polynomials, Bessel functions, Laguerre and Hermite polynomials, the Hypergeometric function; Sturm-Liouville problems; orthogonality; eigenfunction expansions and the generalized Fourier Series; solution of partial differential equations of physics and engineering; Fourier, Laplace, and other integral transforms; first order PDE systems via characteristics; special functions. *Prerequisite: 440 with minimum grade of C or consent of instructor.*

516 Applied Mathematics for Science and Engineering II (3)

Advanced topics in applied mathematics to be selected from partial differential equations with a discussion of quasi-linear systems and shock waves, integral equations, generalized and weak solutions; calculus of variations and control theory; nonlinear waves and evolution equations and hyperbolic conservation laws. *Prerequisite: 515 or consent of instructor.*

524 Operations Research III (3)

Topics in integer programming, Markov models, dynamic programming, and nonlinear programming and optimization. Course will be an extensive coverage of one or more of the above areas. *Prerequisite: 414 or 424 with minimum grade of C or consent of instructor.*

545 Numerical Analysis I (3)

Numerical solutions of equations in one variable; interpolation and polynomial approximation; numerical differentiation and integration; initial value problems for ordinary differential equations; direct methods for solving systems of linear equations.

547 Numerical Analysis II (3)

Iterative techniques for solving systems of linear equations; approximation theory; eigenvalue and eigenvector approximation; boundary value problems for ordinary differential equations; numerical solution to partial differential equations.

566 Numerical Analysis II

Iterative techniques for solving systems of linear equations; approximation theory; eigenvalue and eigenvector approximation; boundary value problems for ordinary differential equations; numerical solution to partial differential equations. *Prerequisites: Math 565 or consent of instructor.*

567 Numerical Solution of Partial Differential Equations I.

Finite difference methods for solving elliptic, parabolic, and hyperbolic equations; stability analysis; convergence properties; consistency of numerical schemes. *Prerequisite: Math 566.*

568 Numerical Solution of Partial Differential Equations II.

A continuation of topics covered in Math 567: Numerical Solution of Partial Differential Equations I with additional applications. *Prerequisite: Math 567.*

400-Level Courses That May Be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

- 401 Mathematics of Interest (3)
- 403 Graph Theory and Combinatorics (3)
- 407 Introduction to Probability and Statistics (3)
- 408 Mathematical Statistics (3)
- 410 Number Theory (3)
- 412 Linear Algebra and Matrix Theory (3)
- 414 Operations Research (Linear) (3)
- 420 Applied Statistical Methods (3)
- 422 Introduction to Point Set Topology (3)
- 424 Operations Research (Nonlinear) (3)
- 428 Packages for Mathematical Computations (3)
- 430 The Historical Development of Mathematics (3)
- 440 Applied Analysis (3)
- 445 Advanced Differential Equations (3)
- 450 Modern Analysis (3)
- 452 Basic Concepts of Geometry (3)
- 454 Abstract Algebra (3)
- 460 Techniques of Applied Mathematics (3)
- 470 Introductory Complex Variables (3)
- 475 Research Seminar (1)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Music (MUSIC)

Courses For Graduate Students Only**500r Graduate Ensemble (1)**

Participation in large or small ensembles as appropriate for the program of the student, and as approved by the student's graduate advisory committee. *Prerequisite: Division Jury.*

501r Special Topics (1-4)**502 Seminar in Music History and Research (3)**

Comprehensive survey of music history and methods of research in music history. Extensive experience with primary sources and style in scholarly writing on music. Research papers and in-class presentations on selected topics. Students will gain familiarity with library use skills and music materials. Areas covered will include music bibliography, research and writing techniques. Required of all candidates for the Master of Music degree.

503 Music Theory (2)

A comprehensive review of the elements of music theory. Credit may not be applied to degree program.

505 Seminar in Music Theory (3)

A survey of theoretical principles, with emphasis on techniques of analysis leading to the study of a musical score for performance.

507 Advanced Analysis (3)

Compositional, analytical techniques with emphasis on complex harmonic and procedural developments of the late nineteenth and twentieth centuries.

508 Research Methods in Music Education (3)

A study of research methodology with emphasis on the functional understanding of research as it applies to music teaching and learning. Required for the Master of Music degree with a concentration in music education.

509 Musical Styles (3)

Study of characteristic features of musical style in various periods of music history.

511 Music Before 1600 (3)

A study of works, both monodic and polyphonic, characteristic of European music before 1600. Extensive work with primary sources required. Preparation of research papers and class presentation of assigned topics in conference with instructor. *Prerequisite: 502 or permission of department head.*

512 Music From 1600 to 1750 (3)

A study of works characteristic of the period and illustrative of musical trends in the era. Extensive work with primary sources required. Preparation of research papers and class presentation of assigned topics in conference with instructor. *Prerequisite: 502 or permission of department head.*

513 Music From 1725 to 1825 (3)

A study of works characteristic of the period and illustrative of musical trends in the era. Extensive work with primary sources required. Preparation of research papers and class presentation of assigned topics in conference with instructor. *Prerequisite: 502 or permission of department head.*

514 Nineteenth-Century Music (3)

A study of works characteristic of the period and illustrative of musical trends in the era. Extensive work with primary sources required. Preparation of research papers and class presentation of assigned topics in conference with instructor. *Prerequisite: 502 or permission of department head.*

515 Twentieth-Century Music (3)

A study of works characteristic of the period and illustrative of musical trends in the era. Extensive work with primary sources required. Preparation of research papers and class presentations of assigned topics in conference with instructor. *Prerequisite: 502 or permission of department head.*

520 Studies in Music Curricula (3)

The planning, sequencing, implementing, and evaluating of curricula in music with respect to music learning theory and school organizational.

521 Psychology of Music (3)

Survey of the field of human musical behavior from a psychological perspective with emphasis on music perception and music learning. Bibliographic study in the psychology of music is included.

522 Seminar in Music Education (3)

Contemporary philosophies of music education; building instructional programs; evaluation of music teaching and learning, aesthetic education; experimental research; administration of school music program.

527 Advanced Arranging (2)

Practical experience in advanced techniques in arranging for small instrumental ensembles, choral groups, large bands and orchestra.

528 Advanced Conducting (2)

An intensive study of choral and instrumental conducting methods and techniques and their application in laboratory sessions. *Prerequisite: 310 or 328 or permission of department head.*

530 Kodaly Level I (3)

An introduction to the philosophy and practice of the Kodaly method of music education. Focus on Solfege, ear training, conducting, folk song analysis, and teaching the methodology. *Prerequisite: Permission of the instructor.*

531 Kodaly Level II (3)

Application of the Kodaly method of music education in elementary and secondary school settings. Further development of skills in Solfege, ear training, conducting, folk song analysis, and pedagogy. *Prerequisite: MUS 530, Kodaly Level I.*

532 Kodaly Level III (3)

Application of the Kodaly method of music education in elementary and secondary school settings. Further development of skills in Solfege, keyboarding, ear training, conducting, folk song analysis, and pedagogy. *Prerequisite: MUS 531, Kodaly Level II.*

535 The History and Philosophy of Music Education (3)

This course surveys the historical and philosophical foundations of music teaching and learning, with emphasis on the effects of systematic beliefs and past events on the music classroom.

538 Testing, Measurement, and Evaluation of Musical Experiences (3)

This course provides an introduction to educational testing, measurements, and evaluation of musical exercises and behaviors.

542 Problems in Musical Theater Production (2)

Detailed study of problems involved in presentation of musical theater productions. Student directors will participate under supervision as producers of a spring or summer production.

550 Instrumental or Vocal Music Literature (3)

An historical survey of appropriate music literature; stylistic survey and critical evaluation in each course. Individual projects for particular instrument or voice. *Prerequisite: permission of department head.*

551r Applied Music — Keyboard (1-4)

Prerequisite: successful audition before Division Jury.

553r Applied Music — Strings (1-4)

Prerequisite: successful audition before Division Jury.

555r Applied Music — Voice (1-4)

Prerequisite: successful audition before Division Jury.

557r Applied Music — Woodwinds (1-4)

Prerequisite: successful audition before Division Jury.

559r Applied Music — Brass (1-4)

Prerequisite: successful audition before Division Jury.

561r Applied Music — Percussion (1-4)

Prerequisite: successful audition before Division Jury.

563 Applied Conducting (4,4)

Conducting lessons covering repertoire preparation and selection, conducting technique, score and clef reading, score preparation, performance traditions and practice, etc.

596r Project in Music Education (1-3)

Intended for students pursuing the music education option. Development of a substantial project in fulfillment of master's degree requirements. *Prerequisite: approval of graduate advisory committee and graduate committee in music, and admission to candidacy.*

597r Individual Studies (1-4)**598r Recital (1-4)**

Intended for students pursuing the performance option. Coaching and instruction in preparation for the graduate recital. *Prerequisites: approval of Division Jury, graduate advisory committee and graduate committee in music, and admission to candidacy.*

599r Thesis (1-4)

Development of thesis. *Prerequisites: approval of graduate advisory committee and graduate committee in music, and admission to candidacy.*

400-Level Courses That May Be Taken For Graduate Credit

These courses may be used to satisfy requirements in some degree programs, subject to the approval of the student's major department and the Graduate School.

401 Advanced Composition (1-4)

Every semester

404 Liturgics and Service Structure (2)

Offered alternate years.

405 Ministry of Music (2)

Offered alternate years.

406 Hymnology (2)

Offered alternate years.

498r Individual Studies (1-4)

Cadek Conservatory Internship.

Nursing (NURS)

500 Conceptual and Theoretical Foundations of Nursing (3)

This course explores the role of the advanced practice nurse within the framework of nursing science. It focuses on selected theoretical and conceptual nursing frameworks, which provide a foundation for advanced nursing practice. *Prerequisites: Admission to the MSN programs or permission of the Director.*

501 Nursing Research with Statistical Applications (4)

An examination of methods and statistical applications in nursing research, utilizing nursing theory both as a basis for research and in practice. *Prerequisite: Undergraduate level statistics: pre or co-N511 & N500.*

504 Advanced Pathophysiology (3)

Analysis of complex interrelationships and interdependence of pathophysiological concepts that serve as a primary component of the foundation for clinical assessment, decision making, and management for advanced nursing practice. *Prerequisites: Undergraduate pathophysiology or permission of the Director.*

505 Adult Health Nursing I (4)

A clinically-based course emphasizing patient care management through advanced nursing practice. Clinical settings may include acute, intermediate, and long-term care facilities, as well as community and home care environments. Clients are adults with secondary and tertiary health problems and related emotional crises. The integration of research and practice is emphasized. *Prerequisites: 500, 503 and 504.*

506 Adult Health Nursing II (4)

A continuation of 505. Provides students with additional opportunities to develop advanced nursing care interventions with adult clients in a variety of settings. Independent and collaborative roles are stressed. *Prerequisite: 505.*

507 Clinical Specialization Practicum and Seminar (5)

Intensive clinical practicum and seminar for students who select role preparation in advanced clinical practice. Examination and implementation of the role of clinical specialist as director of care, teacher, coordinator, and collaborator. Includes an understanding of the importance of organizational placement of the clinical specialist. Opportunities are provided to implement planned change and to analyze effectiveness of change. *Prerequisites: 502 and 506.*

512 Health Policy, Economics & Finance (3)

This course examines health care policy, economics, and finance in health care systems including a focus on the advanced practice nursing role. *Prerequisite: 513*

513 Introduction to Health Care Information Management I (2)

This course provides students with an overview of the theoretical foundation of Information Management and is designed to examine information technology and tools of the Internet. The impact of automated data management through information systems, expert systems, and telecommunication on advanced nursing practice are addressed in the context of nursing informatics. *Prerequisite: Admission to Graduate Division or eligibility for graduate studies.*

514 Health Care Information Management for Nurse Executives (3)

This course builds upon the concepts introduced in Health Care Information Management I to provide experience with health care applications including opportunities to explore and apply clinical, management information, decision support, expert, and practice management systems. The impact of web-based technology will also be discussed as it applies to health care delivery and management. *Prerequisites: 513 or special permission by the Director.*

515 Financial Administration for Nurse Executives (3)

This course explores financial administration theories, principles, and practices essential for nurse executives within the changing health care environment.

520 Education in the Health Care Setting (3)

This course presents an exploration of current research and knowledge of learning including multiple theories, learning styles, and their use in health care. *Prerequisites: 500 (Nursing Theory) or permission of Director.*

521 Educational Program Development in the Health Care Setting (3)

This course explores application of theories of teaching and learning the education program development for selected populations in the health care setting. *Prerequisites: 513 Health Care Information Management I; Prerequisite or co-requisite.*

522 Teaching Strategies/Methodologies in Nursing and Health Care (2)

This course is designed to provide opportunities to develop, implement, and evaluate a variety of strategies for teaching in various simulated nursing education/practice settings. *Prerequisites: 513, 520, 523 co-requisite or permission of Director.*

523 Teaching Practicum I (2)

This course is designed to provide opportunities to design, implement, and evaluate a variety of strategies for teaching in specific nursing education/practice settings. *Prerequisites: 513, 520, corequisite 522, or permission of Director.*

524 Outcomes Measurement of Teaching Effectiveness in Academic and Health Care Settings (3)

This course explores the use of outcome measurements to determine teaching/learning effectiveness in a variety of nursing education and health care settings. *Prerequisites: 513, 520, or permission of Director.*

525 Teaching Practicum II (3)

This course synthesizes all previous coursework and provides the student the opportunity to educate collegiate nursing students, health care staff and/or consumers. *Prerequisites: 520, 521, 522, 523, 524*

N530 Theoretical Foundations for Health Systems Administration (3)

This course explores theories, principles, and behaviors essential for the management of resources within the changing health care environment from an advanced practice nurse perspective. *Prerequisites: 513, 512 (may be co-requisite.)*

531 Advanced Resource Management for Advanced Nursing Practice (2)

This course emphasizes principles and techniques of financial management for achievement of health care system goals and explores current topics in financial management of health care systems while maintaining quality outcomes. The focus is on the role of the advanced practice nurse in resource management. *Prerequisites: BACC503, 530, 514, or special permission by the Director.*

532 Consulting and Marketing Skills for Advanced Practice Nursing (3)

This course explores theories and concepts related to intra- and entrepreneurial principles and skills for the advanced practice nurse. *Prerequisites: Admission to graduate studies or permission of the Director.*

533 Introduction to Health Care Information Systems (3)

This course introduces the concepts upon which Health Care Information Systems are developed, implemented, and maintained. Operating systems, networking concepts, security issues, and workstation design and evaluation related to the health care environment will be addressed.

534 Health Systems Practicum for Advanced Practice Nurses (4)

This course requires the advanced practice nurse to apply advanced knowledge and skills related to health systems administration or nursing informatics in a selected health care setting. *Prerequisites: 531 or 536.*

535 Health Care Information Systems: Analysis and Design (3)

This course builds upon the concepts introduced in Health Care Information Systems to provide experience with health care applications. Informatics models, conceptual frameworks, and practice activities will be discussed. Students will explore clinical, management information, decision support, expert, and practice management systems. *Prerequisites: 533 or special permission by the Director; Credit not granted for 514 and 535.*

536 Health Care Information Systems: Implementation and Evaluation (3)

This course builds upon the concepts introduced in Nursing 535 providing content and experience in health care information system implementation and evaluation. *Prerequisites: 535.*

537r Health Care Informatics Applications for Advanced Practice Nursing (2,2)

This course builds upon the concepts and technology introduced in Health Care Information Management I and other related MSN concentration coursework to provide additional experiences in informatics applications in health care settings. Students will have the opportunity to identify specific informatics application(s) based upon their practice interests and to then develop additional skills in this area. *Prerequisites: 513 or special permission by the Director.*

541 Professional Aspects of the Nurse Anesthesia Practice (2)

Exploration of the professional role expectations of the Advanced Practice Registered Nurse Anesthetist, utilizing both a historical and mentoring process.

542 Advanced Physiology with Anatomy for Nurse Anesthesia I (3)

An in-depth, presentation of those aspects of selected anatomy and physiology which are relevant to the anesthetic management of clients. Allows students to gain knowledge base for use in analyzing, evaluating and utilizing principles of anatomy and physiology in anesthesia care. *Prerequisite: admission to the Nurse Anesthesia Concentration.*

543 Advanced Physiology with Anatomy for Nurse Anesthesia II (3)

An in-depth, presentation of additional aspects of anatomy and physiology which are relevant to the anesthetic management of clients. Allows student to gain an increased knowledge base for use in analyzing, evaluating and utilizing anatomy and physiology in anesthesia. *Prerequisite: 542.*

544 Integrated Sciences For Nurse Anesthesia (3)

An in-depth, concise and current presentation of those aspects of science and technology, which are applicable to human physiology and the equipment/environment directly associated with anesthesia patient care. Allows the student to gain a knowledge base for use in analyzing and evaluating the principles of physical science in anesthesia care. *Prerequisite: admission to Nurse Anesthesia Concentration.*

545r Principles of Nurse Anesthesia Practice - Basic (3)

Theoretical concepts basic to safe anesthesia care. Cognitive, affective, and psychomotor skills for the pre-operative, intra-operative, and post-operative anesthesia periods are emphasized. *Co-requisites: 547r*

546 Principles of Advanced Nurse Anesthesia Practice - I (2)

An examination of selected disease processes and surgical complications of the anesthesia client. Selected surgical specialties and their implications for anesthesia care. *Prerequisite: 545.*

547r Nurse Anesthesia Clinical Practicum (1,3)

Clinical application of knowledge and skills necessary for safe administration of anesthesia. Students assume increasing responsibility for the independent delivery of anesthesia care as they progress. Graded on a pass-fail basis. *Prerequisites: 545.*

548 Principles of Advanced Nurse Anesthesia Practice II (2)

An examination of additional disease processes and potential and surgical complications of the anesthesia client. Selected surgical specialties and their implications for anesthesia care are explored. *Prerequisite : 546 Co-requisite: 547r*

551 Health Promotion and Illness Prevention in Primary Care (3)

Theoretical foundations in health promotion, illness prevention and maintenance of function across the health-illness continuum with clients: the individual, family and community. *Prerequisite: Admission to Family Nurse Practitioner concentration or permission of Director.*

552 Primary Care of Children (3)

Theoretical concepts in health promotion and illness prevention in children including the diagnosis and therapeutic management of common acute and chronic health problems. *Prerequisite: 583, 584, 580.*

553 Primary Care of Children Practicum (2)

Application of theoretical concepts and skills in health promotion and illness prevention in children including the diagnosis and therapeutic management of common acute and chronic health problems. *Prerequisite: 504, 583, 584, and 580.*

554 Primary Care of Adults (3)

Theoretical concepts in health promotion and illness prevention in adults including the diagnosis and therapeutic management of common and acute health problems. *Prerequisite: 504, 583, 584, N551 and 580.*

555 Primary Care of Adults Practicum (2)

Application of theoretical concepts and skills in health promotion and illness prevention in adults including the diagnosis and therapeutic management of common acute and chronic health problems. *Prerequisites: 583, 584, 504, and 580.*

556 Primary Care of Women (3)

Theoretical concepts in health promotion and illness prevention in women including the diagnosis and therapeutic management of common and acute health problems. *Prerequisites: 504, 583, and 584.*

557 Primary Care of Women Practicum (2)

Application of theoretical concepts and skills in health promotion and illness prevention in women including the diagnosis and therapeutic management of common and acute health problems. *Prerequisites: 504, 583, 584, and 580.*

559 Family Nurse Practitioner Practicum (8)

Application of advanced knowledge and skills through nursing practice as a Family Nurse Practitioner student. *Prerequisites: 553, 555, and 557.*

580 Advanced Pharmacology (3)

Essential pharmacotherapeutics for advanced nursing practice. Emphasis is placed on commonly prescribed medications for clients of all ages. *Prerequisites: admission to nursing graduate program or permission of the Director.*

581 Advanced Pharmacology for Nurse Anesthesia Practice (3)

Provides the student with an in-depth, presentation of aspects of pharmacology which are relevant to the safe administration of anesthesia. *Prerequisite: admission to the Nurse Anesthesia Program.*

583 Advanced Health Assessment (2)

Advanced health assessment of clients of all ages, including formulation of a clinical diagnosis based upon the health assessment findings. *Prerequisites: Undergraduate health assessment.*

584 Advanced Health Assessment (1)

Application of advanced health assessment techniques of clients of all ages, including formulation of a clinical diagnosis based upon the health assessment findings. *Prerequisites: Undergrad Health Assessment, Pre or Corequisite 583.*

596r Graduate Nursing Seminar (1)

Course provides the student with the opportunity to explore select concepts related to research interest and project/thesis design of enrolled students. Consultation with student's chair is required. *Prerequisites: 500, 501 and agreement of project or thesis chair.*

597r Individual Studies (1-3)

Individual studies designed to enable a students to study a selected topic in depth. Requires a statement describing the specific responsibilities and/or learning objectives of the student, and the criteria to be used in evaluation and grading. *Prerequisite: admission to the MSN program and approval of faculty.*

598r Professional Project in Advanced Practice Nursing (1-2)

This course is designed to enable students to study selected topics in the advanced practice/nursing role that poses opportunities and challenges to practice critical thinking. The project will result in an appropriate outcome that reflects critical thinking, professional judgment, and scholarly rigor. *Prerequisites: Completion of 70% of coursework (defined as at least 2 semesters of full time study in the MSN program) including Nursing Theory and Research or co-requisite Nursing 596r.*

599R Master's Thesis (1-5)

The development and completion of a scientific research study culminating in a formal paper and oral defense. The research oriented scholarly paper will reflect the student's development of innovative nursing interventions or the synthesis or comprehensive analysis of nursing theory. Prerequisites: Completion of 70% of course work (defined as at least 2 semesters of fulltime study in the MSN program) including Nursing Theory and Research. *Pre or Corequisite Graduate Seminar.*

Philosophy (PH REL)

501r Special Topics (1-4)**400-Level Courses That May Be Taken for Graduate Credit**

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

- 425 Ethics and Professions (3)
- 442 Philosophy of Mind (3)
- 481r Interdisciplinary Seminar (3)
- 483 Feminist Theory (3)
- 491r Studies in Philosophy (3)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

Physical Therapy (PHYT)

Enrollment in courses offered by the program of Physical Therapy is allowed by special permission of the faculty and the department head.

401 Introduction to Patient/Client Management (2)

To provide the student with basic patient care skills. Topics to be included are critical observation, universal precautions, medical chart review, methods of measuring and recording vital signs, basic wheelchair features, basic crutch gaits and transfer techniques, and emergency care. Fall semester; year 1.

405 Informatics in Physical Therapy (1)

This course provides an introduction to the acquisition, utilization and presentation of information by physical therapists with emphasis on technology and the use of computers. Upon successful completion of this course, students will be able to develop focused clinical questions, conduct systematic evidenced-based literature searches, identify levels of evidence, and develop creative means of communication using a variety of active learning techniques. A brief overview of the use of technology in medical diagnostic imaging is included. Fall semester; year 1.

410 Human Gross Anatomy (6)

This course is a combined lecture-laboratory program designed to present to the student an understanding of basic and clinical, human gross anatomy. Normal diagnostic imaging techniques will be introduced. Detailed regional analysis of the buttock, lower extremity, and upper extremity will be performed. Structure and function of the head, neck, and trunk regions will be studied. Major joints will be discussed. Anatomy of the thoracic and abdominal cavities will be introduced. Fall semester; year 1.

411 Therapeutic Exercise and Health Promotion (3)

This course will provide the student with a basic foundation of the knowledge and skills needed to prescribe and apply therapeutic exercise in the practice of physical therapy. The role of the physical therapists in prevention and the promotion of health, wellness and fitness is emphasized. Normal physiology and exercise physiology as it relates to the topics presented will be reviewed. The focus of this course will be on how to perform basic exercises used in physical therapy, as well as the rationale of why and when they are applied. This course will provide the foundation for therapeutic exercise units within the applied courses (orthopaedics, neurology, acute care) of the curriculum. Fall semester; year 1.

414 Kinesiology and Biomechanics (2)

An introduction to kinesiology through the study of biomechanics, including statics and dynamics, joint kinematics, and related aspects of muscle mechanics and physiology. Emphasis is on the importance of mechanical principles in relation to analysis of the human body at rest and in motion, both in normal and selected pathological conditions. Spring semester; year 1.

416 Physical Agents (2)

This course will provide the student with the didactic and clinical applications of selected physical agents used in physical therapy practice including cryotherapy, hydrotherapy, sound agents, thermotherapy, and light agents. Spring semester; year 1.

420 Professional Communication and Education (2)

This course addresses the principles of clinical teaching including the establishment of objectives, instructional methods, assessment of learning, and strategies for improving motivation and compliance. An additional purpose of this course is to develop effective professional communication skills. Fall semester; year 1.

421 Musculoskeletal Examination (2)

The student will learn the essential steps in the evaluation of function in a patient with musculoskeletal dysfunction. Evaluation skills for the measurement of joint motion, muscle strength, and posture are demonstrated and practiced. Fall semester; year 1.

435 Clinically Applied Orthopaedics (1)

This course provides students enrolled in the first year of the doctoral curriculum in physical therapy an introduction to selected topics concerning documentation of patient records, the changing health care system, and an introduction to orthopaedic physical therapy through clinical exposure. Spring semester; year 1.

440 Pathophysiology of the Musculoskeletal System (2)

With the aid of case studies, audio-visual support and handouts, this course will survey the clinical correlations of signs and symptoms of dysfunction of the musculoskeletal system. The fundamental concepts of histology and disease-producing mechanisms and pathological processes of the musculoskeletal system will be presented. Wound healing will be introduced. Pharmacology will be introduced relating to specific musculoskeletal diseases. Spring semester; year 1.

450 Patient/Clinical Management of Musculoskeletal Disorders of the Extremities (4)

Provides the student with the didactic and clinical applications of evaluative measures, therapeutic interventions, and treatment rationale for select musculoskeletal dysfunctions, of the extremities. Spring semester; year 1.

511 Physical Therapy Management of Cardiopulmonary Dysfunction (3)

This course provides the student with the didactic and clinical applications of pathology, examination, evaluation, diagnosis, prognosis, intervention and expected outcomes in the management of clients with dysfunction of the cardiopulmonary system. Renal system dysfunction, cardiovascular complications of diabetes, and the role of physical therapy in the intensive care unit will also be addressed. Fall semester; year 2.

512 Patient/Client Management of Musculoskeletal Disorders of the Spine (4)

Provides the student with the didactic and clinical applications of evaluative measures, therapeutic interventions, and treatment rationale for select musculoskeletal dysfunctions of the spine. Summer semester; year 1.

514 Clinical Education I (7)

This is an introductory clinical experience following successful completion of the first three semesters of didactic work. The student performs the elements of patient/client management with an emphasis on musculoskeletal dysfunction in an outpatient/ambulatory care setting under the direct supervision of a physical therapist. Summer semester, year 1. 280 clinical hours.

415 / 515 Neuroscience (5)

This course presents an understanding of peripheral and central nervous system human anatomy, embryology, histopathology and physiology. Correlation of neurological lesions with resultant clinical signs and symptoms is emphasized in patient/clinical case study format. Spring semester; year 1.

518 Electrotherapeutic Modalities (2)

This course will provide the student with the didactic and clinical applications of the electrotherapeutic modalities (electrical stimulation and biofeedback). Summer semester; year 1.

520 Psychosocial Aspects of Disability (2)

This course includes the study of basic concepts and principles essential to the understanding of therapist/patient/family reactions to disability and disease. Issues regarding non-health factors, physical, psychological and social function are discussed as related to the impact on quality of life. Specific topics include employment and architectural barriers and regulations, various reactions to specific diseases and disabilities, and death and dying. Roles of other professions, agencies and support groups facilitating adjustment to functional limitations and disability are included. Spring semester; year 2.

522 Administration in Physical Therapy (3)

This course introduces the health care delivery system, organizational structures, financial management, reimbursement, strategic planning, facility design, marketing principles, outcome management, private practice, risk management and efficient and effective use of available time, personnel and equipment. Students have the opportunity to discuss and present reform issues affecting physical therapy practice. Fall semester; year 3.

525 Critical Inquiry (3)

Teaches the importance of the scientific method in physical therapy, both to understand disease processes and to evaluate the efficacy of different methods of treatment. The student will examine the evidence for accepted methods of treatment, and evaluate published research studies, with reference to hypothesis, methodology, conclusions and relevance to physical therapy practice. The student will acquire the skills necessary to develop a research proposal, which will be carried out in PHYT 550: Research Project. Summer/Fall semester; year 2.

526 Physical Therapy Management of Medical/Surgical Conditions I (3)

This course provides the student with the physiological, didactic and clinical applications of physical therapy examinations, evaluation, therapeutic interventions, and management for a variety of medical and surgical conditions. Upon successful completion of this course, the student will be familiar with the pathophysiology, etiology, incidence, signs and symptoms, impairments, functional limitations, disabilities, and medical, surgical and physical therapy management in the following areas: immune system disorders, blood disorders, cancer, lymphedema, women's health issues, rheumatic disease and chronic pain. Fall semester; year 2.

528 Gait Analysis (2)

The student will study normal and pathological human gait, and will be able to make objective measurements of the general gait parameters, identify abnormal gait patterns, and describe the options available for treating patients with different gait disorders. Fall semester; year 3

532 Clinical Education II (6)

This acute care clinical experience follows successful completion of all didactic work of the spring semester of the second year. The student performs the elements of patient/client management with an emphasis on the musculoskeletal, cardiopulmonary and integumentary systems and begins application of basic neuroscience principles. Summer semester; year 2. 240 clinical hours.

534 Clinical Education III (8)

This clinical experience occurs during the eighth (final) semester. The student performs the elements of patient/client management with an emphasis on the neuromuscular, musculoskeletal, cardiopulmonary and integumentary systems working predominantly with patients with neurologic dysfunction. Summer semester; year 2. 320 clinical hours.

535 Clinical Applications Across the Lifespan (1)

This course provides students with an in-depth study of clinical applications across the lifespan. Students enrolled in this course will have the opportunity to participate in the following clinical experiences: a neonatal intensive care unit, a home health visit, an Alzheimer's care program, a nursing home, and an assisted living center. Student generated case reports will be utilized throughout the course to emphasize evidence-based practice in these clinical arenas. Fall semester; year 2.

536 Clinical Internship (15)

This clinical internship is the final course of the curriculum. Students will work under the direct supervision of a physical therapist focusing on a particular patient/client population selected by the student. The desired outcome is for the student to reach entry-level performance in patient/client management. Spring semester, year 3. 600 clinical hours.

538 Physical Therapy Management of Patients with Neurological Dysfunction I (4)

This course provides the student with the physiologic, didactic and clinical applications of physical therapy examinations, evaluation, therapeutic interventions and management for neurological conditions related to spinal cord injury, neuromuscular diseases and peripheral neuropathies. Upon successful completion of this course, the student will be familiar with the pathophysiology, etiology, incidence, signs and symptoms, impairments, functional limitations, disabilities prognosis and medical, surgical and physical therapy management of common disorders associated with spinal cord injury, neuromuscular disease and peripheral neuropathies. Fall semester; year 2.

540 Differential Diagnosis in Physical Therapy (2)

This course is designed to provide physical therapy students with the screening tools necessary to recognize reported and unreported symptoms or medical conditions that warrant referral to other appropriate health care practitioners. Fall semester; year 3.

542 Physical Therapy Management of Adults and Elders with Neurological Dysfunction II (3)

This course provides the student with the physiologic, didactic and clinical applications of physical therapy examination, evaluation, therapeutic interventions, and management for neurological conditions such as cerebral vascular accident, infectious disorders and tumors of the central nervous system, traumatic brain injury, vestibular dysfunction, cerebellar dysfunction, multiple sclerosis, Parkinson's disease, and Alzheimer's disease. Upon successful completion of this course, the student will be familiar with the pathophysiology, etiology, incidence, signs and symptoms, impairments, functional limitations, disabilities, prognosis and medical, surgical and physical therapy management of common disorders associated with central nervous system dysfunction. Spring semester; year 2.

544 Physical Therapy Management of Infants, Children and Adolescents with Neurological Dysfunction III (3)

This course introduces the student to the basic principles of physical therapy management for infants, children, and adolescents with central nervous system dysfunction. Content includes a review of pathophysiology, examination techniques, and intervention rationale for common pediatric disorders such as cerebral palsy, traumatic brain injury, sensory-motor impairments, developmental coordination disorder, genetic disorders, mental retardation, and neuromotor complications of prematurity and environmental risk exposure. Spring semester; year 2.

545 Preparation for Licensure (1)

This course is a comprehensive review of the physical therapy curriculum in preparation for the National Physical Therapy Examination. Test taking strategies and licensure preparation will be included. Spring semester; year 3.

548 Physical Therapy Management of Medical/Surgical Conditions II (3)

This course provides the student with the didactic and clinical applications of pathology, examinations, evaluation, diagnosis, prognosis, intervention and expected outcomes in the management of clients with integumentary system disorders and for management of the clients before and after amputation. The holistic approach to management will be emphasized. Spring semester; year 2.

550r Research (2)

The students will work in small groups to complete the project initiated in PHYT 525 Critical Inquiry. The three types of projects that are allowed in this course are a case study, an evidence-based review of literature and a research project. Students will be responsible for completion of the project according to the established criteria for the specific project approved by the faculty advisor. An oral presentation is required. This course will be completed in the fall semester of the third year of the professional program. Prerequisite: PHYT 525. Spring second year and fall third year.

553 Human Growth and Development Across the Life Span (3)

This course will investigate the human life cycle from the early embryo to old age. Emphasis will be placed on the study of the principles, processes and phases of physical growth and development, as well as the strengths and limitations imposed on the individual with advancing age. Fall semester; year 2.

555 Applied Patient/Client Management (1)

Physical therapy concepts and skills gained throughout the curriculum will be integrated in a formal presentation of a patient case study. Emphasis will be placed on evaluating the physical therapy plan of care in the context of the total patient as he or she exists in society. Treatment alternatives selected will be validated through the use of professional literature. The oral defense of each case study will include interactions among student, faculty, and clinical instructors. Additionally, this course will encourage integration of current literature as students participate in journal club presentations. Fall semester; year 3.

597r Elective Course Offerings (1-3)

Students may select elective course offering in the physical therapy program or from another approved graduate courses offered in other UTC graduate programs. A total of 6 credit hours of electives are required in the professional program. *Prerequisites: approval of advisor and department head.*

Physics (PHYS)

501 Selected Topics (1-4)**531 Nuclear Reactor Control and Design (3)**

Fundamentals of systems analysis; development of reactor kinetics; feedback mechanisms; temperature coefficients; the power coefficient; reactor stability criteria; influence of external controls; long term reactivity changes; environmental feedback potential. *Prerequisites: a degree in science or engineering and the equivalent of Physics 419.*

532 Advanced Radiation Physics (3)

Environmental sources of ionizing radiation; biological effects of radiation; units and standards of dose measurements; radiation dosimetry; interaction of radiation with matter; attenuation mechanisms, shielding calculations and design; use of monitoring instruments; neutron and gamma bulk shielding measurements and analysis. *Prerequisite: Physics 412.*

541 Nonconventional Energy Sources (3)

The physics of certain types of nonconventional energy sources (fusion and magnetohydrodynamic conversion methods), their potential for use in energy production, the technological problems associated with their widespread utilization and their potential for environmental impact. *Prerequisite: Physics 411, 412, or 414.*

400-level Courses That May Be Taken for Graduate Credit
 400r Physics Seminar (1)
 411 Atomic Physics: An Introduction to Quantum Mechanics (3)
 412 Nuclear Physics (3)
 414 Advanced Modern Physics (3)
 419 Introduction to Nuclear Reactor Physics (3)
 424 Instrumentation, Interfacing and Microcomputers (3)
 441 Radiation Dosimetry (3)
 442 Radiation Biology (3)
 481r Atomic Physics Laboratory (2)
 482r Nuclear and Health Physics Laboratory (2)
 497r Research (1-4)
 498r Individual Studies (1-4)
 499r Group Studies (1-4)

Psychology (PSY)

501r Group Studies (1-3)

Study of selected topics through a seminar taught by appropriate faculty members. Topics to be taught will be announced in advance. Maximum credit: six hours for students in the psychology graduate program, unless specific approval is given by program director. *Prerequisite: Admission to a Psychology master's program or approval of the graduate coordinator.*

506 Organizational Psychology (3)

Theory, research, and applications of major organizational behavior topics. These include employee socialization, organizational commitment, job satisfaction, organizational fairness, and several major conceptualizations of work motivation and leadership. *Prerequisite: PSY 511, PSY 512.*

510 Applied Research I (3)

Discussion of problems in the application of psychological research methodology in nonlaboratory settings. Emphasis on the interpretation and relevance of research results for the practitioner. *Prerequisite: PSY 201 and admission to the Research master's program or approval of the graduate coordinator.*

511 Research Methods in Industrial/Organizational Psychology (3)

Discussion of problems in the application of psychological research methodology in nonlaboratory settings. Emphasis on the interpretation and relevance of research results for the practitioner. *Prerequisite: PSY 201 and admission to the Research master's program or approval of the graduate coordinator.*

512 Human Resource Measurement and Job Analysis (3)

Development of the knowledge and skills pertaining to job analysis. Study of the psychometric issues that underlie the evaluation of the appropriateness of employee selection and appraisal methods. Specifically, four issues are considered: reliability, validity, utility, and legal/social concerns. *Prerequisite: Admission to the Industrial/Organizational master's program or approval of the graduate coordinator.*

513 Advanced Research Techniques (3)

Analysis of advanced methods and techniques commonly employed in psychological research. Emphasis is upon design and analysis as integral units in a variety of research contexts. *Prerequisite: 510 or 511.*

514 Applied Research II (3)

Prerequisite: PSY 510 or 511, and Admission to the Research Master's Program or approval of the Graduate Coordinator.

516 Human Resources Training (3)

A review of the definition of training, the identification of training problems, the development of training materials, and the management of training and management development programs with emphasis upon their evaluation. *Prerequisites: 506, 511, 513.*

517 Human Resources Interviewing (3)

Extensive training in the fundamentals and techniques of interviewing. The emphasis of this training will be upon preemployment, performance appraisal, disciplinary and counseling uses of the interview. Interviewer assessment, VCR and small group feedback used. *Prerequisite: Admission to the Industrial/Organizational master's program or approval of the graduate coordinator.*

519 Organizational Communications (3)

Analysis of the various communication processes operating in any organizational structure, with stress upon the psycho-social components of message production, transmission, and interpretation. Topics include symbolic systems, modern research findings in persuasion, processes of negotiation, assessing communication impacts, and managing various communication networks. *Prerequisite: Admission to the Industrial/Organizational master's program or approval of the graduate coordinator.*

520 The Uses of Groups in Work Organizations (3)

A seminar in the study of group development, group facilitation, group problem solving, work group team building, effective meetings, and committee and task force utilization. *Prerequisite: Admission to the Industrial/Organizational master's program or approval of the graduate coordinator.*

526 Organizational Development (3)

Review of contemporary trends and issues specific to the field of organizational development. Topics such as organizational assessment and change will be explored. A systematic review of journal articles and current literature will be used. *Prerequisites: 506, 511, 513.*

527 Human Resource Selection and Performance Appraisal (3)

Theory, practice, and research pertaining to the selection of applicants to jobs and the appraisal of current employees. Emphasis on the development and evaluation of assessment techniques from a psychometric and legal viewpoint. *Prerequisite: 512*

536r Practicum in I/O Psychology (2-6)

An individualized practicum designed to provide supervised practice in the student's desired area of emphasis in appropriate work organizations. Possible emphases are in any of the I/O/HRD core concepts. *Prerequisite: approval I/O psychology program.*

571 Internship (3-9)

Provides student intensive experience under supervision in a facility similar to that in which the student expects to enter employment after graduation. Class meetings and scheduled meetings between student and faculty advisor required. May be repeated for appropriate credit for students wishing additional internship experience. *Prerequisites: currently taking, or completion of, 533 and approval of departmental committee.*

595r Advanced Studies in Experimental Psychology (3)

Detailed examination of current issues in learning, perception and psychophysics cognition and/or physiological psychology. Maximum credit: nine hours for students in the psychology graduate programs unless specific approval is given by program director. *Prerequisite: approval of the instructor.*

596r Advanced Studies in Developmental/Personality/Social Psychology (3)

Detailed examination of current issues in personality, developmental and/or social psychology. Maximum credit: nine hours for students in the psychology graduate program unless specific approval is given by program director. *Prerequisite: Admission to a Psychology master's program or approval of the graduate instructor.*

597r Individual Research (1-3)

Supervised individual projects that involve intensive literature surveys or development of research procedures. A written report required. Maximum credit: six hours. *Prerequisite: approval of the instructor.*

598r Directed Individual Study (1-3)

Supervised individual study in subject areas included in the graduate curriculum in psychology. Demonstration of knowledge acquired via tests and/or reports required. Maximum credit: six hours unless specific approval is given by student's program director. *Prerequisite: approval of the instructor.*

599r Master's Thesis (1-6)**400-Level Courses That May Be Taken For Graduate Credit.**

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

401 Intermediate Statistics in the Behavioral Sciences (3)

The use of a popular statistical package for the conduct of statistical analyses in psychology. Applications include common descriptive techniques and inferential techniques including the analysis of variance and multiple regression analysis. *Prerequisite: introductory statistics course.*

406 Industrial/Organizational Psychology (3)

Introduction to the study of organizations with emphasis upon personnel selection, criteria, and training. Special consideration of work motivation, job satisfaction and the role of the organization of behavior. *Prerequisite: introductory statistics course.*

407 Professional Psychology (3)

Role models of the psychological practitioner in community settings. Discussion of the foundations, methods, ethics, legal issues, and relationships with other specialists involved in professional psychology. *Prerequisite: nine hours of psychology or permission of instructor.*

410r Advanced Topics in Personality Research (3)

Intensive study of selected topics of current theoretical and research interest in personality, abnormal psychology, and individual differences as they relate to personality. *Prerequisite: 101 or equivalent; six hours of upper division psychology, including 448; and approval of the instructor.*

411 Experimental Analysis of Behavior (3)

A rigorous analysis of complex behavior from the standpoint of contemporary behavioral systems. *Prerequisite: six hours psychology.*

412 Advanced Seminar for Psychological Processes (3)

A comprehensive review of the field as summary experience, especially for senior major students planning to enter graduate study. *Prerequisite: 18 hours of psychology and senior standing, or by permission of instructor.*

421 Advanced Developmental Psychology (3)

An indepth investigation of particular topics in human development, childhood through high school year, with focus on research methodology and findings in relation to social or cognitive development. *Prerequisites: 101 or equivalent, 221 or 222, or equivalent.*

425 Psychology and Law (3)

A comprehensive review of how psychological theory and research influences social policy and law. Topics include, but are not limited to, eyewitness memory, lie detection, jury behavior and selection, trial process, death penalty, children in the court, and the punishment and rehabilitation of criminals. Emphasis on psychologists' use of the scientific method used to understand various phenomena related to legal processes. *Prerequisites: Six hours of behavioral and social sciences; MATH 210, PSY 201, or equivalent; and junior standing.*

431 Advanced Social Psychology (3)

Intensive treatment of selected research areas in social psychology. Emphasis upon the interrelationship between current theoretical perspectives and appropriate methodological procedures. May be registered for as Sociology 431. *Prerequisite: 331 or equivalent.*

448 Theories of Personality (3)

Survey of basic theories of personality including the psychoanalytic, sociocultural, factor analytic, the bio-social, and the phenomenological. Strongly suggested for guidance majors. *Prerequisites: six hours of psychology.*

456r Individual Practicum (1-3)

Supervised contact program in community schools or social service agencies. Academic and personal development sought in the individual or small group activities conducted in this program. An activities log and final written report required. *Prerequisites: six hours of upper division psychology and approval of instructor. Maximum credit six hours. Course graded on a satisfactory/no credit basis.*

460 Systems of Psychology (3)

The historical development, major theses, elements of strength, shortcomings, and current trends of the principal schools of psychological thought. Reading and discussion course for psychology majors and graduate students. *Prerequisites: nine hours of psychology.*

461 Philosophical Psychology (3)

Critical analysis of philosophical aspects of current systems of psychology. Particular focus upon assumptions and consequences of various modes of explanation and description. *Prerequisite:* 460.

470 Psychology of Religion (3)

Analysis of empirical data and psychological theories involving religious beliefs, practices, and experiences. *Prerequisites:* six units psychology or philosophy-religion. May be registered for as Religion 470.

497r Research (1-4)**498r Individual Studies (1-4)****499r Group Studies (1-4)****Public Administration (MPA)****501r Special Topics in Political Science (1-4)****502, 504 Public Policy Research and Analysis I, II (3,3)**

The application of social science research to administrative problems, including practical methods of collecting, analyzing and interpreting data. Theory and approaches to evaluating public programs. *Prerequisite:* one course in statistics.

512 Organizational Theory and Administrative Behavior (3)

Analysis of theories and data dealing with the characteristics and behaviors of public organizations and the people who work in them. Approaches to organizational development and change.

521 Public Administration (3)

Principles of government organization, management, financial control, personnel practices, and administration. Emphasis on current research.

522 Budgeting and Finance in Public Agencies (3)

Problems and practices of fiscal management in public agencies. Emphasis on regional, state, and local governments.

523 Human Resources Management in Public Agencies (3)

Public personnel systems in the U.S. Emphasis on applied and theoretical issues related to public personnel administration.

524 Public Policy (3)

Policy making within and among governmental agencies. Emphasis on processes of policy development, implementation, and evaluation.

529 Administrative Law (3)

Legal aspects of administrative decision-making in public agencies.

530 Intergovernmental Relations (3)

Changing patterns of conflict and cooperation among local, state, and federal governments

531 Government, Politics, and Policy in Metropolitan Areas (3)

Politics and policy in metropolitan areas. Federal policies toward metropolitan problems.

532 State Government, Politics, and Policy (3)

The organization, functions, and operation of state government in the United States. Emphasis on policy formation and outputs.

534 Executive Process in Public and Nonprofit Agencies (3)

This course focuses on preparing students for leadership positions within public and nonprofit organizations. Students will be exposed to a variety of theories and issues that emphasize the complexity of leading public and nonprofit agencies.

535 Community Building (3)

The role of public and nonprofit agencies in the development of community resources.

536 Government and Nonprofits (3)

Examines the relationship between government and the nonprofit sector in the definition, funding, and delivery of public services.

537 Resource Development (3)

This course is designed to acquaint students with the basic concepts and skills to develop community resources for the support of a non-profit agency. Obtaining and managing grants, fundraising, donor development, and managing the resource activities of an agency are covered. Budgeting and legal aspects that pertain directly to resource development are included. Activities will include preparation of a federal grant proposal, planning a special event, and one additional resource development. Activities will include preparation of a federal grant proposal, planning a special event, and one additional resource development or public relations activities: donor development and management, planned giving, United Way applications, or other topics.

538 Nonprofit Marketing (3)

This course concentrates on the organizational issue of marketing agencies and programs. Students will develop an appreciation for principles of marketing, market research techniques and applications and the role of marketing in strategic planning for non-profit agencies. While the course focuses on marketing in nonprofit agencies, its content is also applicable to managers in public agencies who wish to raise the visibility of their agency's programs and to communicate its importance and mission more effectively to the public

539 Strategic Planning in Nonprofit Organizations (3)

Focuses on the skills necessary for conducting a strategic planning process in nonprofit agencies.

540 Applications in Public Administration (3)

Examination and application of theories and techniques in relation to current issues and problems in public administration practice. The course focuses on problem solving through analysis and evaluation and requires a term project. *Prerequisites:* Students must have completed or be in the process of completing all other M.P.A. core coursework before being allowed to register for POLS 540.

543 Nonprofit Management (3)

The purpose of this course is to immerse the student in nonprofit administration. Topics will deal with both the theoretical and the practical side of nonprofit management from establishment of a nonprofit organization through the operations of programs. The primary goal for the course is to increase the knowledge and expertise of students in order for them to feel comfortable in the operation of a nonprofit organization.

561 M.P.A. Internship (6)

Completion of work experience and research paper in a public, or non profit setting.

590 M.P.A. Paper (3)

Completion, submission, and oral defense of a master's level research paper.

597 Individual Research (1-3)

Supervised individual projects that involve intensive literature searches or development of research procedures. A written report is required. Maximum credit: 3 credit hours. MPA majors may not count more than 3 hours of 597 or 598 toward the degree.

598 Directed Individual Study (1-3)

Supervised individual study in subject areas included in or closely related to the graduate public policy submajor or the core curriculum in the MPA. A written report/research paper is required. Maximum credit: 3 credit hours. MPA majors may not count more than 3 hours of 597 or 598 toward the degree. Students may not register without permission of the MPA Coordinator.

400- Level Courses That May Be Taken for Graduate Credit

A number of 400-level courses are available in the Department of Political Science that, with the approval of the MPA coordinator, may be taken for graduate credit to fulfill the degree elective requirement. These courses may be used to satisfy requirements in some other degree programs, subject to the approval of the student's major department and The Graduate School office.

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

401r Advanced Topics in Political Behavior (3)

Selected topics in political behavior. May be repeated once.

411r Advanced Topics in Political Theory (3)

Selected topics in political theory. May be repeated once.

421r Advanced Topics in Public Law (3)

Selected topics in public law. May be repeated once.

422r Advanced Topics in Public Administration (3)

Selected topics in public administration. May be repeated once.

425 Policy Issues in Aging (3)

An introduction to the political, economic, social and health policy questions raised by phenomenon of an aging population. On demand.

431r Advanced Topics in American Institutions and Processes (3)

Selected topics in American institutions and processes. May be repeated once.

432 Southern Politics (3)

A study of the South's role in national politics with an emphasis on the demographic, economic, social and policy forces which give shape to the political values and partisan preferences of the regions electorate. On demand.

441r Advanced Topics in International Relations and Foreign Policy (3)

Selected topics in international relations and foreign policy. May be repeated once.

442r Advanced Topics in Comparative Government (3)

Selected topics in comparative government. May be repeated once.

461r, 462r, 463, 464 State Government Internship Program (3)

Internship conducted during the legislative session in governor's and legislative offices in Nashville. No more than six credit hours may apply toward the major degree requirements in the department. Prior approval of instructor.

471r, 472 Metropolitan Government Internship Program (3-6)

Internship conducted in various governmental offices in Chattanooga. No more than six credit hours may apply toward the major degree requirements in the department. Prior approval of instructor.

497r Research (1-4)

498r Individual Studies (1-4)

499r Group Studies (1-4)

include symbolic systems, modern research findings in persuasion, processes of negotiation, assessing communication impacts, and man

Religion (PH REL)

501r Special Topics (1-4)

400-Level Courses That May Be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

- 417 Mysticism East and West (3)
 467 Contemporary Religious Issues (3)
 470 Psychology of Religion (3)
 482 Christian Faith and Recent Philosophy (3)
 484 Holocaust and Genocide (3)
 491r Studies in Religion (3)
 492r Studies in Western Religious Thought (3)
 493r Studies in the History of Religions (3)
 497r Research (1-4)
 498r Individual Studies (1-4)
 499r Group Studies (1-4)

School Leadership (EDAS)

501 Methods of Educational Research: Quantitative (3)

Emphasis on the development of research skills and related competencies involved in investigating and reporting educational problems; study of basic statistical procedures. Must be satisfactorily completed prior to admission to candidacy for the M.Ed. (Crosslisted as EDUC 501)

503r Current Topics in Education (2-4)

Special topics designed for specified groups as inservice education; study to include research in literature of current topics under discussion.

505 Descriptive and Inferential Statistics (3)

Types of data, experimental design, and parametric and nonparametric methods; some prior study in measurement and/or statistics recommended. (Crosslisted as EPSY 505)

507 Current Issues in Higher Education (3)

An introduction to current issues and topics in higher education with particular attention given to the community college setting; included will be a consideration of educational finance, accountability, supervision and evaluation of instruction, appropriate student demographic data, and recent trends in higher education.

513 Perspectives on Multiculturalism and Diversity (3)

Study of microcultures in the United States, their relationships to the microculture and their significance for educational policy and practice. Explores diversity resulting from various socioeconomic class, race, ethnicity, gender, exceptionality, religion, language, sexual orientation and age. (Crosslisted as EPSY 513)

535 Curriculum Development in Higher Education (3)

An examination of various issues and problems relating to curriculum development in higher education with particular emphasis on the community college curriculum; philosophies of higher education, models of knowledge and instruction, development of instructional goals and objectives, development of course outlines and syllabi, and curricular innovations are among the topics considered.

551 Foundations of Leadership (3)

Overview of American public school administrative leadership; role and function of school administrators examined with emphasis on research, theories, concepts, and models of leadership; review of bibliographical resources important to educational leadership.

552 The Principal As the Instructional Leader (3)

Theory and practice of building level school administration with special attention to group process, leadership models, communication, instructional leadership, and school improvement at the elementary, middle school, and secondary levels. *Prerequisite: EDAS 551.*

553 School Management (3)

Basic concepts in school finance with special attention to budgeting and staffing at the building level; analysis of safety and utilization issues in school facilities; establishment of communication channels and positive public relations with the larger school community. *Prerequisite: EDAS 551.*

563 School Law (3)

Examination of the legal status of the pupil, teacher, principal, superintendent, and school boards; case law methods will be used to study the interaction of the school with local, state, and federal governing bodies; rules and regulations imposed by federal and state agencies will also be considered.

565 Current Practices in Educational Supervision (3)

Basic concepts of educational supervision, possible organizations for supervision, interrelations of supervisory officials, recent research in the field.

566 Supervision of the Instructional Process (3)

The study of various models for comprehending instructional strategies, teacher-student interaction, classroom organization and management, and their influence on the learning process.

572 Practicum in Educational Supervision (3)

A supervised field experience in school or district office settings designed to provide graduate students in educational supervision with practical applications of supervisory theory. *Prerequisite: EDAS 565 or 566.*

579, 580 Practicum I and II (3 each)

As an integral aspect of professional preparation, each student will be expected to participate in 450 hours of supervised field experiences that address all of the ISSLC standards (225 hours required for each course: EDAS 579 and 580). Students will engage in these experiences as they progress through the program, and will attend a periodic seminar and register for 3 credits of practicum during each of the last two fall or spring terms during which they are enrolled. The student's advisor must approve each experience. *Prerequisites: EDAS 551 and nine additional semester hours in the program.*

590 Independent Study - Capstone (3)

A capstone experience in which EDAS students synthesize their learning and experiences in the program to produce a statement of their personal leadership philosophy with an explanation of how this philosophy will impact programs, teachers and students in school settings.

597r Individual Studies (2-4)

To enable a student to study a selected topic in depth; requires a written outline of work to be done, a statement describing the competencies to be developed, and the method of assessment to be used in evaluation. Graded satisfactory or no credit. *Prerequisites: approval of adviser and department head.*

599r Thesis (3 or 6)

The development of a product of thesis magnitude and quality; specific style and form may vary with the degree program. Department and library copies of thesis required. Oral defense required. Six hours of credit permitted. Registration to be completed in one term or in two consecutive terms. *Prerequisites: EDAS 501, admission to graduate degree candidacy, approval of program adviser and coordinator of graduate programs in education; requires submission of a formal prospectus two weeks prior to registration.*

600 Advanced Research Design and Analysis (3)

Major types of experimental and quasi-experimental designs such as Solomon Four Group; factorial and Latin square; emphasis on designs and methods appropriate to educational research; use of data processing and statistical computer packages. *Prerequisites: EDAS 501 and 505.*

660 Public Relations for Educational Administrators (3)

Philosophy and techniques of school community relations; attention given to parent contacts, citizen participation, press, radio, television, printed materials, and other media. *Prerequisite: EDAS 501.*

663 Seminar in School Law (3)

Analysis of educational questions as influenced by legal principles and the case law; the effect of legal provisions upon administrative, educational, and social policy decisions. *Prerequisites: EDAS 563 or equivalent and approval of instructor.*

670 Issues and Theories in Supervision (3)

A comprehensive study of theoretical forces impinging upon education and the implications of these findings for supervision; emphasis on recent current developments and issues affecting supervision. *Prerequisite: EDAS 565 or 566.*

School Psychology and Counseling (EPSY)

501 Methods of Educational Research: Quantitative (3)

Emphasis on the development of research skills and related competencies involved in investigating and reporting educational problems; study of basic statistical procedures; basic qualitative research methodologies are also examined. *Also EDUC 501.*

503r Current Topics in Education (2-4)

Special topics designed for specified groups as inservice education; study to include research in literature of current topics under discussion.

504 Classroom Management Techniques (3)

Examination of techniques for managing attention and behavior in the classroom; approaches discussed include psychoeducational and behavioral management. (May be registered as EDSP 504)

505 Foundations of Services to Exceptional Individuals (3)

Identification of significant persons and events in the development of educational programs for exceptional individuals and relationship of these events to contemporary practice; current literature regarding ethics, law, program, and instructional design and delivery. *Prerequisite: admission to master's program or permission of the instructor.*

507 Advanced Techniques in Individual Assessment (3)

Informal and nontraditional individual assessment techniques directed to individual instructional planning and the documentation of instructional outcomes; approaches to data synthesis, program planning, report writing, and information sharing techniques. *Prerequisite: EPSY 505 or approval of instructor.*

510 Ethics and Professional Issues in Counseling (3)

The ethical standards of the ACA code of ethics and related entities (i.e., ASCA, AAMFT) and applications of ethical and legal considerations in professional counseling. An overview of ACA, its divisions, branches, and affiliates, along with standards for professional credentialing, including certification, licensure, and accreditation practices. The role of the professional counselor in advocating on behalf of the profession and advocacy processes needed to address institutional and social barriers that impede access, equity, and success for clients.

512 Learning and Education (3)

An overview of the major structures used in research and used to understand learning in educational settings with particular attention to behaviorism, developmentalism and constructivism. *Crosslisted as EDUC 512.*

513 Perspectives on Multiculturalism and Diversity (3)

Study of microcultures in the United States, their relationships to the macroculture and their significance for educational policy and practice. Explores diversity resulting from various socioeconomic class, race, ethnicity, gender, exceptionality, religion, language, sexual orientation and age. *Crosslisted as EDAS 513.*

515 Assessment and Learning (3)

An introduction to student assessment practices routinely used in contemporary education settings. Emphasis upon the ethical use of measurement devices, developing and understanding of general measurement concepts, the interpretation and use of formal measures, and the development, administration, and use of informal (teacher-made) classroom assessment devices. Emphasis is placed upon the effective use of these devices to improve learning. *Crosslisted as EDUC 515.*

516 Assessment Strategies for Individuals with Mild Disabilities (3)

Examination of instruments and procedures for individual assessment of educational skills; students will learn to administer and interpret the results of tests of general ability and specific academic skills. *Prerequisite: EDSP 515 or approval of instructor. May be registered as EDSP 516.*

521 Human Development Applied to Education (3)

A study of major theories and concepts related to the development of infants, children, and adolescents. Focus on typical and atypical development, age, appropriate behavior, and developmental needs, particularly as they relate to educational practice. Field component required. *Requisite: must be taken during the student's first nine hours in the program. Crosslisted as EDUC 521.*

536 Affective and Behavioral Assessment Techniques (3)

Examination of the varied rationales for affective disorders and their associated classification practices in schools; discussion of measurement techniques associated with affective assessment including formal observation, rating scales, interviewing strategies, and self-report procedures; students are given opportunities to collect and evaluate information obtained from the above procedures. *Prerequisite: EDSP 535 or approval of instructor.*

537 Gender Issues in Counseling (3)

Emphasis on sex role socialization and male/female roles as they pertain to counseling issues and practices. Exposure to non-sexist counseling and new models of mental health that transcend sex-biases.

539 Introduction to School Counseling (3)

Overview of school counseling. Study of the contemporary role of the school counselor with particular emphasis on the school counselor as consultant and collaborator. Students will receive the tools for program development and evaluation with the ability to devise or reorganize guidance programs to meet the needs of contemporary society.

542 Introduction to Counseling in the Community (3)

The roles of community counselors in a variety of settings; an overview of the history of the counseling profession; an examination of our professional ethical code; an overview of consultation, prevention, and outreach activities; and exposure to professional associations and to common topic areas encountered by community counselors.

543 Theories of Human Development (3)

Theory and research on emotional, social, and intellectual development over the life span with applications to educational and therapeutic settings.

544 Theories and Techniques of Counseling (3)

A study and multicultural critique of the major theoretical approaches to counseling including but not limited to: Psychoanalytic, Adlerian, Client-centered, Gestalt, Behavioral, Cognitive-Behavioral, Reality, and Systems theory. Students will learn counseling techniques associated with different theories through applied in-class and extra-class activities.

545 Pre-practicum in Counseling (3)

Students gain skills and techniques of basic counseling by participating in simulated counseling sessions with peers. Students will practice such skills as summarization, reflecting content and feeling, paraphrasing, concreteness, silence, minimal encouragers, and appropriate questioning. Students will learn and practice relationship skills such as empathy, positive regard, genuineness, self-disclosure, confrontation, and immediacy. Students must demonstrate appropriate sensitivity to diversity encountered in the therapeutic setting, adequate ability in establishing a therapeutic relationship, adequate ability in employing basic counseling skills, an ability to make constructive use of feedback and provide constructive feedback to peers, and a high level of self-awareness. Graded S/NC. *Prerequisite: EPSY 544.*

547 Group Facilitation (3)

Study of group theories and techniques through supervised experience in small groups.

548 Counseling Appraisal Instruments (3)

Study and use of tests and instruments commonly used by counselors to aid the individual's self-understanding and the making of educational and vocational choices. Emphasis is upon group tests and inventories. *Pre- or co-requisite: EPSY 539 or 542.*

549 Career Development and Counseling (3)

A study of career development theories; occupational, educational, and labor market information resources including media, computer-driven and other technologies; career development program planning, implementation, and evaluation with the

careers over time. Special attention is given to factors affecting the career development of diverse populations, such as age, gender, sexual orientation, physical challenge, and other cultural determinants.

550 Perspectives on Human Sexuality for Counselors (3)

Focus on counseling perspectives of human sexual development, adjustment, remediation; designed to increase the counselor's understanding and acceptance of his/her own sexuality and that of clients and students. *Prerequisites: EDAS 501 and approval of instructor.*

551 Crisis Counseling and Suicidology (3)

Therapeutic approaches designed to help clients cope with developmental and/or situational high stress events; intensive study of suicide prevention, intervention, and postvention.

Pre- or corequisites: EPSY 501 and approval of instructor.

552 Substance Abuse Counseling (3)

Methods of counseling addicted clients and their families. Physiological and psycho-pharmacological information. The primary focus will be on alcohol addiction, although many other addictions will be addressed.

553 Couples, Marriage, and Family Counseling (3)

An overview of system approaches to couples and family counseling. Attention is given to family development, transitions, and diverse structures including but not limited to single parent-hood, same-sex couples, extended families, and grandparents as primary caretakers. *Prerequisite: EPSY 544.*

554 Counseling Children and Adolescents (3)

Techniques for counseling children and adolescents. Factors influencing development of personality in children and adolescents, a psychological foundation for counseling them, and an understanding of many typical emotional problems confronted by children. The class format will include lectures, group discussion, online discussion, role play, and practical application of techniques.

555 Counseling Practicum (3)

Students participate in a site-based supervised experience conducting counseling sessions. This course provides students with the opportunity to refine skills learned in Pre-Practicum and apply to actual counseling sessions. These skills include attending skills, therapeutic relationship building skills, and basic counseling skills, as well as skills in self-reflection and self-awareness. Students will recognize the influence of personal biases and values in providing counseling services and will be expected to conduct and participate in case presentations. Students will demonstrate an ability to receive feedback and provide constructive feedback to peers. 100 total on-site hours with 40 hours of direct service. Graded S/NC. *Prerequisite: EPSY 544, EPSY 545 or 546; approval of instructor. Maximum credit six hours.*

559 Internship in Community Counseling (6)

Students participate in a 600-hour supervised intensive experience as a counselor in a community setting. Students are expected to fully participate in an array of indirect services as well as 300 hours of direct service on site. *Prerequisites: EPSY 555 and approval of instructor.*

570 Internship in Elementary School Counseling (3)

Supervised experience in an elementary school counseling position for at least 300 clock hours. Students are to participate in the full array of guidance related activities under the supervision of a licensed elementary school counselor. One hour weekly site supervision is required. Group supervision performed by a faculty member is also provided. The internship will require the completion of a substantial written report detailing a project completed while in the internship. Graded on a Pass/Fail basis. *Prerequisite: EPSY 555*.

571 Internship in Secondary School Counseling (3)

Supervised experience in a secondary school counseling position for at least 300 clock hours. Students are to participate in the full array of guidance related activities under the supervision of a licensed secondary school counselor. One hour of weekly site supervision is required. Group supervision performed by a faculty member is also provided. The internship will require the completion of a substantial written report detailing a project completed while in the internship. Graded on a Pass/Fail basis. *Prerequisite: EPSY 555*.

575 Descriptive Disorders in Psychopathology (3)

Issues and techniques for understanding and diagnosing psychopathology according to DSM-IV criteria. Examples from case histories that are written and/or videotaped. *Prerequisite: EPSY 542 and 543*.

576 Theory and Practice in Multicultural Counseling (3)

An examination of multicultural and pluralistic trends in contemporary society with the goal of approximating a theory of multicultural counseling taking into consideration the etic vs. emic debate. Cultural Identity Development and Acculturation paradigms are emphasized and their application to individual, group, family, and organizational counseling. Students have the opportunity to examine their own cultural identity and its impact upon the counseling process. Also, included are culturally sensitive interventions with diverse populations based on age, race, religious preference, sexual orientation, physical and intellectual ability, ethnicity, family patterns, socioeconomic status, and gender. *Prerequisite: EPSY 544*.

577 Foundations of Gerontological Counseling (3)

The physical, social, and emotional concerns of older people, especially as they relate to the counseling process. Exposure to the diverse issues impacting our aging society. *Prerequisite: EPSY 544*.

597r Individual Studies (2-4)

To enable a student to study a selected topic in depth; requires a written outline of work to be done, a statement describing the competencies to be developed, and the method of assessment to be used in evaluation. *Prerequisites: approval of advisor and department head*.

598 Research (3)

To enable a student to conduct independent research. *Prerequisites: EDAS 501, admission to graduate degree candidacy, approval of program advisor and the coordinator of graduate programs in education; requires the submission of a formal prospectus two weeks prior to registration*.

614 Historical, Legal and Ethical Foundations of School Psychology (3)

This course provides an introduction to the field of school psychology focusing upon historical, legal and ethical issues that have shaped and continue to shape the profession. Includes a field component.

625 Consultation Methods (3)

Basic approaches to methods of consultation are presented. Students are provided opportunities to engage in various consultation activities in supervised settings. *Prerequisite EPSY 504*.

630 Individual Ability Testing (3)

Theory and supervised practice in the administration and interpretation of individual tests of intelligence and other cognitive factors. *Prerequisites: EPSY 516, 536*.

635 Practicum in Assessment (3)

Examination of supervised experience in using assessment procedures needed for both classification and program planning decisions. Emphasis on integration and communication of information as well as using that information to make classification and program planning decisions. Students will be assigned to field settings two days per week where they will be supervised in a variety of assessment activities. *Prerequisite: Admission to candidacy*.

640 Practicum in Intervention (3)

Examination of and supervised experience in using direct and indirect intervention strategies with students experiencing academic and behavioral problems. Emphasis on intervention planning, implementation, and evaluation of intervention effects. Students will be assigned to field settings two days per week where they will be supervised in a variety of intervention activities. *Prerequisite: admission to candidacy, EPSY 625, 635 Pre/Corequisite EPSY 645*.

645 Psychological Foundations of School Psychology (3)

Examination of the various influences on student achievement and behavior, including biological, development, and environmental (family, community, peer, classroom, and school climate) influences. Strategies for assessing these influences and their interactions and, when possible, modifying them to enhance student development. Particular emphasis placed on strategies designed to help students develop their abilities to regulate their own behavior. *Prerequisite: Admission to candidacy*.

650r Internship in School Psychology I (3-6)

Supervised experience performing all the activities of a practicing school psychologist. Students are assigned either 20 hours per week (3 semester hours) or 40 hours per week (6 semester hours) to schools or other agencies providing services to students. Regular class meetings as well as university and field-based supervision. *Prerequisites: Admission to candidacy, EDSP 506, EDS 610, 613, EPSY 501, 625, 635, 640, 645; approval of faculty committee*.

655r Internship in School Psychology II (3-6)

Supervised experience performing all the activities of a practicing school psychologist. Students are assigned either 20 hours per week (3 semester hours) or 40 hours per week (6 semester hours) to schools or other agencies providing services to students. Regular class meetings as well as university and field-based supervision. *Prerequisites: Admission to candidacy; EPSY 650; approval of faculty committee*.

Secondary Education (SEC ED)

Curriculum and Instruction (EDUC)

500 Introduction to Educational Inquiry (3)

Introduces the student to different approaches to research in education. Three broad categories of inquiry based on empirical science, phenomenology, and critical theory will be presented. Students will be expected to define a researchable problem and a plan for their graduate program that will culminate in a final project. (*Requisite: must be taken during the student's first nine hours in the program.*)

501 Methods of Educational Research (3)

Emphasis on the development of research skills and related competencies involved in investigating and reporting educational problems; study of basic statistical procedures; basic qualitative research methodologies are also examined. *Crosslisted as ESPY 501 and EDAS 501.*

503r Current Topics in Education (2-4)

Special topics designed for specific groups as inservice education; study to include research in literature of current topics under discussion.

504 Methods of Educational Research: Qualitative (3)

A practical introduction to the emerging field of qualitative research in education. Students will be introduced to different types of qualitative inquiry, qualitative research methodologies and the different aims and purposes underlying qualitative research in education. However, because professional educators also need to be knowledgeable critics and informed consumers of quantitative research studies, basic quantitative research methodologies are also examined.

505 Descriptive and Inferential Statistics (3)

Types of data, experimental design, and parametric and nonparametric methods; some prior study in measurement and/or statistics recommended.

508 Collaboration and Consultation (3)

Rationale of strategies useful for professionals in education and related disciplines to function as effective collaborators; exploration of trends in intervention for individuals with special needs as well as self-assessment and practice of interpersonal, teaming, and communication.

509 Seminar for Cooperating Teachers (3)

Objective analysis and evaluation of teaching; emphasis on student teacher/cooperating teacher/college supervisor interrelationships.

510 Professional Ethics (3)

This course examines the ethical nature of teaching and, in particular, the teacher/student relationship. Areas of study include the nature of ethical inquiry, punishment and due process, intellectual and academic freedom, equal treatment of students and minorities, and the legal content of professional ethics.

512 Learning and Education (3)

An overview of the major structures used in research and used to understand learning in educational settings with particular attention to behaviorism, developmentalism and constructivism. *Crosslisted as ESPY 512.*

513 Perspectives on Multiculturalism and Diversity (3)

Study of microcultures in the United States, their relationships to the macroculture and their significance for educational policy and practice. Explores diversity resulting from various socioeconomic class, race, ethnicity, gender, exceptionality, religion, language, sexual orientation and age. *Crosslisted as EPSY 513 and EDAS 513.*

514 Teaching in Diverse Classrooms (3)

Study of diversity that may be found within a classroom in the United States and the significance of this diversity for classroom teaching and learning. Explores variations in ability and exceptionality, socioeconomic class, race and ethnicity, gender, religion, and language. Emphasizes strategies for managing and instructing diverse populations in educational settings. Field component.

515 Assessment and Learning (3)

An introduction to student assessment practices routinely used in contemporary education settings. Emphasis upon the ethical use of measurement devices, developing an understanding of general measurement concepts, the interpretation and use of formal measures, and the development, administration, and use of informal (teacher-made) classroom assessment devices. Emphasis is placed upon the effective use of these devices to improve learning. *Crosslisted as EPSY 515.*

516 Introduction to Curriculum (3)

Introduces the student to the study of school curriculum. The course studies issues about curriculum design, development and evaluation by considering the persons involved, the types of inquiry used, and the ideas underlying choices and the criteria used to judge curriculum decisions.

520 Social and Historical Foundations of Education (3)

Acquaints prospective teachers with social and historical foundations of education. Provides a broad perspective on American education and analyzes issues from the foundations of education using students' personal experience and perspectives as future teachers. Field component. Must be taken during the student's first nine hours in the program.

521 Human Development Applied to Education (3)

A study of major theories and concepts related to the development of infants, children, and adolescents. Focus on typical and atypical development, age appropriate behavior, and developmental needs, particularly as they relate to educational practice. Field component required. *Requisite: must be taken during the student's first nine hours in the program. Crosslisted as EPSY 521.*

522 Instructional Planning and Evaluation (3)

An in-depth study of the elements of teaching that transcend specific disciplines. The skills of planning, specifying, and measuring educational outcomes for diverse student populations are stressed. A variety of educational strategies is also explored. *Prerequisites: EDUC 520 & 521.*

523 Advanced Study in Early Childhood Development (3)

Studies development of normal and exceptional individuals birth to nine years; emphasis given to relationships among the significant persons in the child's life; topics include the development of language, formal, and informal assessment techniques.

524 Internship in Elementary/Early Childhood Education (3)

A supervised field experience designed to provide the graduate student in the last nine hours with an opportunity to demonstrate knowledge and competencies obtained in the M.Ed. program through a training internship; requires the creation of written outline of competencies to be attained. *Prerequisite: admission to candidacy.*

531 Evolving Patterns in Secondary Teaching (3)

Content and teaching strategies unique to a particular discipline. Emphasis on recent development. Exploration into curriculum research and models for curriculum implementation.

532 Innovative Programs in Science & Environmental Education (3)

An examination of a wide array of local, state, and federal programs and practices in science and environmental education. Emphasis on the role of school leaders in implementing innovative programs and practices. *Prerequisite: approval of instructor.*

535 Teachers, Markets, and Society (3)

Designed to help teachers understand how markets and market economies operate in the world economy and to provide teachers with methods and materials for use in elementary and secondary classrooms. The course may not be repeated for academic credit.

538 Energy and Education (3)

Methods and materials for infusing energy education concepts into the K-12 curriculum; course designed for educators and natural resources personnel.

540 Curriculum and Strategies for Early Childhood Education (3)

Designed to extend the student's basic knowledge of curriculum to provide the opportunity and ability to modify and create curriculum approaches. The student will expand knowledge and demonstrate strategies used with children ages birth to eight years in a variety of settings.

542 Managing Emerging Social Behavior (3)

Concepts and theories about age-appropriate development needs and behaviors of Pre-K to 4th grade children. The students will also learn to use a variety of skills to assist children to continually acquire more mature skills for learning and for social interaction. These skills will be role played in class, and projects will include the use of these same skills by the students in Pre-K-4 classrooms.

545 Issues in Early Childhood Education (3)

A critical review and discussion of current research and issues in the growing and expanding field of early childhood education. Provides a forum for students to have an opportunity to critically examine the impact of current trends and approaches in the field. Designed to extend the knowledge and skills of educators and facilitate reflection on forces both inside and outside the classroom that affect work with young children.

550 Curriculum Development in Elementary and Middle School (3)

Analysis and applications of objectives and theoretical structures; issues in relation to principles of learning, needs of children; critical analysis of curriculum trends and resources; and the role of the teacher in curriculum development. *Prerequisite: EDUC 516.*

561 Literacy Instruction for Emergent Learners, Birth to First Grade (3)

This advanced focus in literacy will support teacher knowledge of best practices in classroom instruction aimed at ages of birth through first grade. Participants will learn the major theories of language development and the history of teaching reading in the U.S.; principles of balanced literacy; critical strategies in emergent literacy instruction; methods for creating a literacy environment; and strategies for supporting children's vocabulary development, word identification, and spelling pattern awareness. Current issues will be explored in the topics of phonics instruction, decodable text, literature-based approaches, phonemic awareness, and the competing theories of emergent literacy and "reading readiness."

562 Literacy Instruction for Elementary School Learners, Grade Two Through Five (3)

This advanced focus in supporting elementary school literacy will support teacher knowledge of best practices in classroom instruction and assessment. Participants will examine closely the development of a balanced reading program, how to prevent and remediate reading difficulties, methods of teaching word identification/vocabulary/spelling, strategies for supporting comprehension within a readers' workshop, developing/maintaining a writers' workshop, strategies for students' writing to learn, and how to organize/support literature circles. Interviews, conferences, self-reports, portfolios, observations, informal reading inventories, running records, miscue analysis, and Major Points Interview for Readers will be examined as authentic assessment processes.

563 Literacy Instruction for Middle/High School Learners (3)

This advanced focus in adolescent literacy will support teacher knowledge of best practices in classroom instruction. Participants will learn about the role of the cueing systems in student reading and teacher assessment, how to prevent and remediate adolescent reading difficulties, how to create a positive literacy environment in content coursework, methods of teaching word identification/vocabulary/spelling, strategies for supporting comprehension, study strategies, enriching student writing, communicating information to students/parents/administrators, and resources for curriculum development.

564 Practicum for Literacy Instruction (3)

This is an advanced focus in identifying and remediating problems in literacy acquisition and learning, as well as assessing growth in both teaching and learning. Coursework will support teacher knowledge of best practices in classroom instruction, with participants utilizing the inquiry approach as teacher-researchers to address specific challenges and needs of their classrooms and school.

570 History and Philosophy of Educational Technology (3)

Overview of the science and theory of the field of educational media; essential readings from historical background and current issues in the field. Social, cultural, historical and political implications related to instructional and educational technology, especially to the invention, adoption, and diffusion of technology in education.

571 Principles of Instructional Design and Development (3)

Overview of instructional design theories and principles and application in a variety of fields: education, business and industry, training, etc. Specific detail in applying each step on an instructional design process.

575 Educational Technology (3)

Application of computer and video technologies to the practice of teaching in a school setting. Focus is on ways to become an effective technology-user and on techniques for finding information, creating educational materials, and grappling with classroom data. Student use of technology and the tools available to empower learners to gather information, manipulate it, and create new information in a variety of forms.

576 Organization and Administration of Instructional Technology (3)

Techniques for integration and management of technology in education. Specific topics might include: integrating CAI, strategies for managing hardware, software, facilities, and training, program evaluation.

577 Multimedia Production Techniques (3)

Review of advantages and disadvantages of a variety of media types. Design and production of print materials, graphics, sound, animation and video to create and produce: overheads, slide tape, video, computer-based and internet educational application.

578 Computer-based Authoring Tools (3)

Survey of methods in computer-based authoring systems and advanced multimedia production technology. Design, production, and evaluation of computer-based training modules using one or more authoring systems.

590 Culminating Experience (3)

Directed research or development of a project under faculty supervision. *Prerequisite: Admission to candidacy, approval of M.Ed committee. Co-requisite: EDUC 596.*

591 Professional Teaching Experience (6)

For the employed teacher seeking initial teacher licensure through the M.Ed. Elementary or Secondary Education: Licensure, this an intensive semester-long experience at the site of the candidate's teaching assignment. The course includes seminars in instructional planning and evaluation, educational psychology, and current issues related to education as well as reflective papers. UTC faculty observe and evaluate the pedagogical skills of the candidate through periodic classroom visits. *Prerequisite: Application for and admission to the Professional Teaching Experience according to guidelines of the College of Education and Applied Professional studies. Corequisite: Education 590.*

596 Induction Experience (9)

An intensive semester-long placement for master's degree candidates seeking initial teaching licensure. Seminars in instructional planning specific to the teaching discipline and in educational psychology accompanying the experience are integral.

597r Individual Studies (2-4)

To enable a student to study a selected topic in depth; requires a written outline of work to be done, a statement describing the competencies to be developed, and the method of assessment to be used in evaluation. *Prerequisites: approval of adviser and department head.*

598 Research (3)

To enable a student to conduct independent research. *Prerequisites: EDAS 501, admission to graduate degree candidacy, ap-*

proval of program adviser and coordinator of graduate programs in education. Requires the submission of a formal prospectus two weeks prior to registration.

599r Thesis (3 or 6)

The development of a product of thesis magnitude and quality; specific style and form may vary with the degree program. Department and library copies of thesis required. Oral defense required. Six hours of credit permitted. Registration to be completed in one term or in two consecutive terms. *Prerequisites: EDAS 501, admission to graduate degree candidacy, approval of program adviser and coordinator of graduate programs in education. Requires submission of a formal prospectus two weeks prior to registration.*

Sociology(SOC)

501r Special Topics in Sociology (3)

Graduate level course stressing research in a special content area, such as demographic analysis, intergroup relations, advanced criminology, marriage and family analysis, etc. *Prerequisite: appropriate undergraduate courses or permission of instructor.*

400-level Courses That May Be Taken for Graduate Credit

414 Research Seminar (3)

420 Sociology of Law (3)

425 Advanced Sociology of the Family (3)

430 Intergroup Dynamics (3)

431 Advanced Social Psychology (3)

440 Social and Cultural Change (3)

470r Special Studies and Problems (1-3)

497r Research (1-4)

498r Individual Studies (1-4)

499r Group Studies (1-4)

Special Education (EDSP)

503r Current Topics in Education (2-4)

Special topics designed for specified groups as inservice education; study to include research in literature of current topics under discussion.

504 Classroom Management Techniques (3)

Examination of techniques for managing attention and behavior in the classroom; approaches discussed include psychoeducational and behavioral management. (May be registered as EPSY 504)

506 Program Design and Curriculum Strategies for the Exceptional Learner (3)

Examination of the research on effective teaching/learning in relation to special education; overview of principles of curriculum design and an examination of various models useful in the education of individuals with disabilities; discussion of issues related to cultural diversity. Field component included. *Prerequisite: admission to master's program.*

509 Advanced Instructional Technology (3)

Overview of classroom applications of technology and strategies for using technology in the education of individuals with disabilities. Introduction of integrated technologies and technologies useful in overcoming limitations in communication, physical, and sensory barriers experienced by individuals with disabilities. Lab component included.

515 Characteristics and Current Issues in Mild Disabilities (3)

Examination of current issues and research related to the nature and needs of individuals with mild disabilities; emphasis on problems and issues related to identification and treatment of this population throughout the life span. *Prerequisite: EDUC 400 or equivalent or approval of instructor.*

516 Assessment Strategies for Individuals with Mild Disabilities (3)

Examination of instruments and procedures for individual assessment of educational skills; students will learn to administer and interpret the results of tests of general ability and specific academic skills. *Prerequisite: EDSP 515 or approval of instructor. May be registered as EPSY 516*

517 Strategies for Inclusion (3)

Examination of the concepts surrounding inclusion of individuals with disabilities in the regular classroom; exploration of methods and strategies for developing individualized programs designed to promote successful integration. *Prerequisite: EDSP 515 or approval of instructor.*

525 Characteristics and Current Issues in Moderate/Severe and/or Multiple Disabilities (3)

Examination of current issues and research related to the nature and needs of individuals with moderate/severe and/or multiple disabilities; emphasis on problems and issues related to identification and treatment of this population throughout the life span. *Prerequisite: EDUC 400 or equivalent or approval of instructor.*

526 Assessment Strategies for Individuals with Moderate/Severe Disabilities (3)

Examination of instruments and procedures for individual assessment of educational, functional, and social skills; students will learn to administer and interpret the results of instruments useful in designing appropriate programs for this population. *Prerequisite: EDSP 525 or approval of instructor.*

527 Instructional Strategies and Programs: Moderate/Severe Disabilities (3)

Examination of the unique needs and issues specific to moderately and severely disabled individuals; emphasis on instructional approaches and methodology concerning academic curriculum, social skills development, career and vocational development, personal management, and recreation/leisure and general community living skills. *Prerequisite: EDSP 525 or approval of instructor.*

535 Characteristics and Current Issues in Emotional/Behavioral Disabilities (3)

Examination of current thinking and research related to the nature and needs of individuals with emotional and behavioral disabilities; emphasis on problems related to identification and treatment of this population throughout the life span. *Prerequisite: EPSY 400 or approval of instructor.*

536 Affective and Behavioral Assessment Techniques (3)

Examination of the varied rationales for affective disorders and their associated classification practices in schools; discussion of measurement techniques associated with affective assessment including formal observation, rating scales, interviewing strategies; and self-report procedures; students are given opportunities to collect and evaluate information obtained from the above procedures. *Prerequisite: EDSP 535 or approval of instructor. May be registered as EPSY 536*

537 Instructional Strategies and Programs: Emotional/Behavioral Disabilities (3)

Examination of theoretical approaches to instruction of students with behavioral disabilities/emotional disturbance and specific techniques and materials for instruction in affective education, social skills, and career and vocational development. *Prerequisite: EDSP 535 or approval of instructor.*

545 Characteristics and Current Issues Related to Infants and Young Children with Special Needs (3)

Presentation of models of development that facilitate understanding of the development of infants and young children with special needs; introduction to sources of biological and environmental risk; examination of related developmental implications and intervention issues. *Prerequisite: PSY 221 or equivalent, EPSY 400, or approval of instructor.*

546 Assessment of Infants and Young Children with Special Needs (3)

Examination of instruments and techniques for individual and team assessment of development of infants and young children, with an emphasis on informal and curriculum-based approaches; students will gain practice in administering, interpreting, and using assessment information to plan programming and report assessment results. *Prerequisite: EDSP 545 or approval of instructor.*

547 Intervention Issues and Practices with Infants and Young Children with Special Needs (3)

Examination of the structure of environments and development and implementation of developmentally-appropriate special education practices and procedures for intervention; inclusion of activity-based and play-based curricular approaches; introduction to various models of service delivery and service coordination. *Prerequisite: EDSP 545 or approval of instructor.*

548 Families of Children with Special Needs (3)

A study of the family system and the effects of a child with special needs on family functions, roles, life cycle, and coping; students will develop and practice skills in family interviewing and communication skills for building partnerships with families of children with disabilities; discussion of impact of cultural diversity.

555 Characteristics and Current Issues in Gifted Education (3)

Examination of current thinking and research related to the nature and needs of gifted individuals including intellectual, creative, leadership, artistic, and musical giftedness; emphasis on problems and issues related to identification and treatment of this population throughout the life span.

556 Assessment Strategies in Gifted Education (3)

Examination of the concepts underlying the identification of gifted individuals, including current practices; development of skills in choosing, administering scoring, and interpreting a battery of assessment instruments for identification and assessment of gifted individuals. *Prerequisites: EDSP 507 and 555.*

557 Instructional Strategies and Programs: Gifted Education (3)

Examination of programming options for gifted populations and strategies for successful instruction of this population. *Prerequisites: EDSP 555 and 556.*

558 Creative Problem Solving (3)

Exploration of the concept of creativity and its factors, measurement, and application to education. *Prerequisite: EDSP 555 or approval of instructor.*

559 Seminar in the Education of the Gifted (3)

Review of research relevant to gifted education and an analysis of issues related to current programming practices for gifted individuals. *Prerequisite: EDSP 555 or approval of instructor.*

560 Dynamics of Groups at Work: Emerging Leadership (3)

Theories of small group interaction and education procedures for facilitating interaction with emphasis on working with gifted children and youth.

566 Field Placement Practicum (3-6)

Field-based experience in settings serving children and youth with special education needs. *Prerequisite: Completion of the courses required in the concentration.*

570 Seminar: Contemporary Issues and Independent Research (3)

Critical inquiry into topics of contemporary interest to special educators; students are expected to identify, develop, and present original research related to an approved topic. *Prerequisites: Completion of core and concentration coursework and an approved prospectus or approval of instructor.*

597r Individual Studies (2-4)

To enable a student to study a selected topic in depth; requires a written proposal, a statement describing the competencies to be developed, and the methods of assessment to be used in evaluation. *Prerequisites: written approval of adviser and the department head.*

598 Research (3)

To enable a student to conduct independent research. *Prerequisites: EDUC 501, admission to graduate degree candidacy, approval of program adviser and the coordinator of graduate programs in education; requires the submission of a formal prospectus two weeks prior to registration.*

599r Thesis (3-6)

The development of a product of thesis magnitude and quality; specific style and form may vary with the degree program; department and library copies of thesis required; oral defense required. Six hours of credit permitted. Registration to be completed in one term or in two consecutive terms. *Prerequisites: EDUC 501, admission to graduate degree candidacy, approval of program adviser and the coordinator of graduate programs in education; requires submission of a formal prospectus two weeks prior to registration.*

Theatre and Speech (THSP)

400-Level Courses That May Be Taken for Graduate Credit

There must be a substantial difference in expectations and work performance for graduate students. Graduate students will be challenged to read more extensively, to integrate the materials more thoroughly, and will be graded with higher standards and expectations than are undergraduate students.

The syllabus of each course offered for combined credit must contain a statement or statements describing specifically what will be required of graduate students.

All syllabi of courses offered for combined credit must be reviewed by a Graduate Council committee. Only those approved by that committee will be offered for graduate credit.

- 412 Theatre for Youth (3)
- 423 Advanced Problems in Acting (3)
- 431 Directing II (3)
- 450r Topics in Drama and Theatre (3)
- 457 Conceptual Foundations of the Modern Theater (3)
- 461r Directed Studies in Advanced Production (1-4)
- 463r Directed Studies in Advanced Performance (1-4)
- 465r Directed Studies in Theatre Education (1-4)
- 485 Film Topics (3)
- 497r Research (1-4)
- 498r Individual Studies (1-4)
- 499r Group Studies (1-4)

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Membership in the Graduate Faculty

In support of continuing high quality graduate education at The University of Tennessee at Chattanooga and in recognition of accreditation standards, the following policy for a Graduate Faculty has been adopted.

In terms consistent with the mission of the University, this policy defines a Graduate Faculty, describes the criteria for membership in the Graduate Faculty, and articulates the process by which individual selection is made.

Definition

UTC faculty may apply for members in the Graduate Faculty under one of three categories: *full*, *associate*, and *special*. Graduate Faculty may teach graduate courses and undertake other responsibilities, as described below. The Faculty Council, which elects two at-large members to the Graduate Council, retains the right to determine the qualifications for those members.

1. Full Membership—Full members may teach graduate courses, direct theses, and serve on thesis committees; and they are eligible for election to the Graduate Council.
2. Associate Membership—Associate members of the Graduate Faculty may teach graduate courses, may serve on thesis committees, and are eligible for election to the Graduate Council, but are not eligible to direct theses. Membership in this category is provided for individuals who do not yet meet the criteria for full membership.
3. Special Membership—Special members may teach specific graduate courses or serve on specific thesis committees. Special membership status of the Graduate Faculty may be granted to regular, visiting, or adjunct faculty of the University who have special academic expertise or professional experience who demonstrate competence in a particular course of instruction but who otherwise do not meet the criteria for full membership.

Criteria for Full Membership

The criteria of selection are designed to advance the specific programs of the University, and it is expected that participating departments will periodically review the selection criteria.

1. Terminal degree or the equivalent in the discipline or demonstrated competence in the teaching area.
2. Evidence of ongoing scholarly and professional work.
3. Documented commitment to graduate education. Demonstration of a commitment to graduate education by new members of the faculty in the first year of hiring may be determined in the interview.

In some cases—typically in the instance of trans-disciplinary research and teaching and in interdisciplinary research and teaching where there may be no single departmental discipline to advocate the appointment—the college dean or the Dean of The Graduate School may initiate the appointment process. The case will be submitted for approval by the Graduate Faculty of the program concerned with the projected research and teaching, after which the normal process will be followed.

In the event that a new faculty member is hired with graduate teaching responsibilities, status in the Graduate Faculty may be awarded at the time of appointment, for a period of two years. It is advisable that, where possible, the program coordinator be involved in designating a Graduate Faculty member.

In emergency circumstances, a temporary appointment may originate with the recommendation of the concerned unit of instruction, the dean, and the dean of The Graduate School. Upon this action, the Dean of may recommend a one-semester exemption to the normal process, which will require a temporary appointment by the Provost.

In none of the provisions for membership in the Graduate Faculty is there the presumption that membership is perpetual or that any faculty has a contractual right or obligation to teach graduate courses without the normal provisions for review and renewal.

Continuation Process

The process of continuation varies somewhat according to the three categories of membership.

For a faculty holding *full* membership, credentials are reviewed at the time of initial appointment and every five years thereafter.

For faculty holding *associate* membership, status is reviewed every three years for continuation as an associate member or for acceptance as full members. At the request of an associate member, his or her status may be reviewed for acceptance as a full member at any time when a change in circumstances warrants such change in designation.

For faculty holding *special*, membership, appointments will be reviewed after two years and may be renewable.

Process for Appeal

If the application of a faculty member is not approved in the normal process described in any of the above process, an appeal may be made to the full Graduate Council, according to the *Faculty Handbook*, which provides for appeal to the Provost and to the Chancellor.

Graduate Faculty, 2004-2005

College of Arts and Sciences

Arts

Anne Lindsey, Professor, Ph.D., Florida State

Biological and Environmental Sciences

J. Hill Craddock, Assistant Professor, D.R., University of Torino, Torino, Italy.

Ross M. Durham, Professor, Ph.D., University of California, Los Angeles.

Timothy J. Gaudin, UC Foundation Assistant Professor, Ph.D., University of Chicago.

Robert Keller, Assistant Professor, B.S., University of Tampa

Margaret Kovach, Assistant Professor, Ph.D., Colorado State University, Fort Collins.

R. Gary Litchford, Professor, Graduate Program Coordinator, Ph.D., Rice University.

Charles H. Nelson, Professor, Department Head, Ph.D., University of Massachusetts, Amherst.

Sean Richards, Assistant Professor, Ph.D., Texas Technology University, Lubbock.

Henry G. Spratt, Jr., Associate Professor, Ph.D., University of Georgia.

John C. Tucker, Assistant Professor, J.D., University of Florida.

Barbara A. Walton, Professor, Ph.D., University of Oklahoma.

Thomas Wilson, Associate Professor, Ph.D., George Mason University

Criminal Justice

Vic Bumphus, Associate Professor, Graduate Coordinator, Ph.D., Michigan State University.

Helen Eigenberg, Professor, Ph.D., Sam Houston State University.

Richard Hogan, Associate Professor, Ph.D., University of Missouri, Kansas City

Roger D. Thompson, Associate Professor, Ed.D., University of Tennessee, Knoxville.

Kenneth Venters, Professor, Ph.D., Florida State University.

Communication

David Sachsman, Professor & West Chair of Excellence, Ph.D., Stanford University

Economics

Fritz Efaw, Associate Professor, Ph.D., Rutgers University.

John R. Garrett, UC Foundation Professor, Ph.D., University of Massachusetts.

Phillip E. Giffin, Professor, Ph.D., University of Tennessee, Knoxville.

Bruce E. Hutchinson, Professor, Ph.D., University of Virginia.

Ziad Keilany, Guerry Professor, Ph.D., Indiana University.

Leila J. Pratt, Hart Professor, Ph.D., Virginia Polytechnic Institute and State University.

Alan Rabin, UC Foundation Professor, Ph.D., University of Virginia.

English

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GLOSSARY OF ACADEMIC TERMS

Academic Dismissal – Involuntary separation of a student from a program or institution by administrative action because the student has not met the established academic standards. See also Dismissal; Termination.

Academic Record – the academic history of the student, which lists all of a student's courses, semester hour credits grades, quality points, status, and certain personal information.

Accreditation – Recognition of an institution, schools or program by a national or regional organization as meeting certain academic standards for quality and educational environment.

Admission to Candidacy – A certification that the student has demonstrated the ability to do acceptable graduate work and that normal progress has been made toward a degree.

Adviser – a faculty member who advises the student about his or her academic program.

Audit – to take courses without credit

Candidacy Form – A document upon which the student must list the courses to be taken in pursuit of an intended graduate degree. The major professor, the department and the Graduate School usually must approve it.

Center – An administrative unit at an institution of higher education, that specializes in research, teaching or technical assistance related to a particular subject (e.g. transportation center, center for linguistics, adult education center); a facility within an institution for a special educational purpose (e.g. learning research center, center for student services, center for continuation education, guidance center); a location off

campus where educational programs are conducted.

Certificate – A document confirming satisfactory completion of a program of study; a credential awarded for completion of a short-cycle program.

College – an organizational unit of the University, embracing several departments, divisions or schools. UTC has four colleges: the College of Arts and Sciences; the College of Business; the College of Health, Education and Professional Studies; and the College of Engineering and Computer Science, as well as the Graduate School.

Comprehensive Examination – A test that measure overall knowledge in a given field, or in several fields; a test required for admission to candidacy for an advanced degree. The examination is normally taken when the student has completed, or nearly completed, all prescribed coursework and verifies the candidate's ability to integrate knowledge within the major and related fields. Often used synonymously with diagnostic, placement, preliminary or qualifying examination.

Concentration – a particular emphasis within a major area; a specialized area of study within a major; a particular perspective, specialized skill training, or content domain within an academic discipline; and, the opportunity to study a sub-discipline within the context of a major. The concentration represents the distinctive course and other requirements that define the concentration within the context of a major.

Credit – the numerical value awarded upon completion of specified studies, usually based on class meeting length and frequency. At UTC credit is stated in semester hours.

Curriculum – the whole body of courses offered by the University or by one of its colleges, schools or departments.

Defense of Thesis or Dissertation – A master and doctoral candidate's oral presentation and discussion of research conducted to satisfy a designated committee that the candidate has attained the stage of scholarly ability and achievement required by the University for final recommendation to the advanced degree.

Department – an organizational unit representing a discipline or related disciplines, such as the Department of English.

Dissertation – A written report based on original research, which is required to achieve the doctoral degree. It is usually defended orally before the candidate's committee and whoever else may wish to attend. The research project represents a significant effort that culminates in a scholarly contribution to the field of inquiry. It reflects the candidate's ability to conduct independent research and to interpret in a logical manner the facts and phenomena revealed by the investigation. See also Thesis.

Doctoral Committee – Members of the faculty appointed to advise a graduate student, supervise the preparation for a dissertation, conduct the final oral examination, and largely determine if degree requirements have been satisfied.

Domicile – A student's permanent home and place of habitation; the place where he or she intends to remain or return. The student's domicile may determine the residency classification in public institutions.

Elective – a course not specifically required.

Grade-Point Average (GPA) – A measure of scholastic performance determined by dividing the total accumulated quality points by the coresponding total of attempted credit hours.

Graduate Assistant – An advanced degree student who is appointed to provide teaching, research, or support service, in addition to pursuing an academic program of study. A monthly stipend, plus tuition and fees, is commonly awarded. Assistants may be classified by the type of responsibility to which they are assigned or by the number of hours to be worked.

Graduate Council – The policy-making body of a graduate school, which generally consists of elected faculty and a graduate student representative. The council normally sets the policies of the graduate school and approves all graduate-level courses, examines and approves all new graduate programs, reviewing the qualifications of persons recommended for teaching graduate courses or directing masters or doctoral research, and serves as an appeal body for graduate student matters.

Graduate Faculty – Academic staff members approved to teach post-baccalaureate courses and supervise thesis and dissertation research.

Graduate Student – a student who has received a bachelor's degree and has met all criteria for admission to the Graduate School.

Interdisciplinary Courses – courses, which deal with two or more academic subjects.

Major – A field of study representing a well-recognized discipline in which there is offered a graduate program. A major appears on the student's graduate transcript.

Plagiarism – The use or reproduction of materials from another person's work (e.g., publications, productions, or intellectual property) without revealing the source and/or clearly acknowledging the degree of dependency. If materials are reproduced verbatim from another source, or even reproduced in large part with only minor modification, proper

citation **must** occur. To avoid allegations of plagiarism, one must clearly cite the source and use quotation marks to identify the excerpts, or clearly acknowledge the source by indenting and single-spacing the reproduced selections.

Post-baccalaureate Student – a student who has received a bachelor's degree and is taking additional undergraduate courses.

Practicum – A course or experience that relates educational theory to practice within a field of specialization.

Prerequisite – a requirement that must be met before a particular course can be taken.

Readmission and reenrollment – applications, which must be filed if a graduate student breaks continuous, graduate enrollment. If granted, the student may reenroll for the identified term. Readmission for non-degree-seeking students is fairly routine. However, readmission for degree-seeking students is not guaranteed.

Registration load – the total semester hours for which a student is registered in any semester or term.

Residency Classification – The status assigned to a student based on place of domicile. In public institutions the classification is usually in-state or out-of-state and is employed as a means to determine the level of tuition and fees.

Schedule of Classes – a listing of all courses offered by the University during one semester or summer session, showing fees, instructors, and time and place of meeting. Semester – half an academic year or 15–16 weeks. Some schools operate on a quarter system, which divides the academic year into thirds. UTC uses the semester system.

Semester Hour – the unit of credit used by schools on the semester plan.

Thesis – A written, scholarly presentation of research or study that is submitted and defended as partial fulfillment or requirements for an advanced degree. The thesis completed for the doctoral degree is usually termed a dissertation. See also *Dissertation*; *Master's Thesis*.

Time Limit – A maximum period (at UTC it's 6 years) allowed for a student to complete a degree program after first enrollment. Time limits are established to assure that those enrolled in graduate programs make satisfactory progress toward completion of the degree and possess current knowledge in the discipline.

Transient Admission – The temporary enrollment of a student from another college or university who plans to take courses and applies them toward fulfillment of program requirements at the home institution.

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