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Information

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 is no guarantee that they will not be changed or revoked. Course offerings and requirements are continually under examination and revision. Current information may be obtained from the following sources:

Admission requirements—Dean of Admissions and Records or Director of Admissions Phone: (615) 755-4662 or toll-free 1-800-UTC-MOCS

Course offerings—Department offering course or faculty adviser, head of major departments, or dean of college/school. Phone: (615) 755-4416 for department number.

Fees & tuition—Bursar Phone: (615) 755-4781

Financial aid—Director of Financial Aid Phone: (615) 755-4677

Graduate admission requirements—Associate Provost for Graduate Studies, Research and Program Evaluation or Director of Graduate Studies Phone: (615) 755-4666

Housing—Student Affairs Phone: (615) 755-4304

Registration—Director of Advisement, Records and Registration Phone: (615) 755-4573

University operator—(615) 755-4111

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; and 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 concerning Title IX, Section 504, and the Americans with Disabilities Act should be directed to the Office of the Director for Affirmative Action, 104 Founders Hall, (615) 755-4124- Charges of violation of the above policy should also be directed to the Office of the Director for Affirmative Action. E040222-004-91
The University

History
When the Methodist Episcopal Church began to explore the possibilities of developing a central university in the South, Chattanoogans 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 7,700 students who represent 70 Tennessee counties, 36 states, and 42 foreign countries.

Accreditations
The University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award bachelor's and master's 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 National Council on Social Work Education (conditional accreditation) 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, National University Extension Association, and the Tennessee College Association.

Mission
The mission of The University of Tennessee at Chattanooga is the education of 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 mission, the University engages in the complementary and mutually supportive activities of teaching, research, and service.

The University combines the advantages of a strong tradition with those of a state-assisted institution. Dedicated to providing quality education to a diverse population of over 7,500 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. Full-time and qualified adjunct faculty rather than graduate students teach all classes. 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. The Center of Excellence for Computer Applications already has enhanced many multidisciplinary initiatives. A program of well-endowed chairs, (including a significant number of Chairs of Excellence), professorships, and centers builds upon a tradition of faculty research.

The University's programs provide both a firm grounding in the liberal arts and strong professional preparation. Baccalaureate degrees are offered in the liberal arts, sciences, business, education, engineering, fine arts, health, and human services. Master's degrees are offered in business, computer science, criminal justice, education, engineering, English, music, psychology, and public administration. UTC will develop new programs at the master's level to meet emerging community needs; UTC may develop selected doctoral programs, in areas of existing strength, that meet regional and national needs.

Education at UTC goes beyond the traditional classroom and laboratory as befits an institution where service is also a high priority. UTC faculty members will 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 Brock Scholars and Honors 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.

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.

As it pursues all activities in support of its mission, the University is committed to Affirmative Action and other programs which contribute to the cultural and ethnic diversity of the campus.

The 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. 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.
Admissions and Regulations

UNDERGRADUATE ADMISSIONS

The Admissions Office administers all matters pertaining to undergraduate admission. All requests for information and application forms should be addressed to the Office of Undergraduate Admissions, The University of Tennessee at Chattanooga, Chattanooga, Tennessee 37403. The Admissions Office is located in room 129 Hooper Hall and the telephone number is (615) 755-4662. Completed admissions applications and credentials should be sent to the same office. A $15 non-refundable application fee is required of all candidates for admission who have not previously applied to a University of Tennessee campus or the University of Chattanooga.

New students may be admitted at the beginning of either semester or any summer session. Every effort should be made to submit the completed application and supporting credentials no later than four weeks prior to the beginning of the semester in which admission is desired. Freshmen applying for the fall semester must apply by August 15 for full consideration.

Orientation and Advising

Orientation programs for new freshmen and transfer students are directed by the Advisement and Orientation Office and combine the services and skills of the Admissions Office, the Registration Office, the Student Affairs Office, and the Counseling and Career Planning Center. These programs provide an introduction to the campus and University life. The Student Orientation Board, composed of upperclass student leaders, also has a major role in planning and coordinating new student orientation.

Each orientation program includes a tour of the campus, an explanation of its facilities and academic offerings, small group discussions with faculty and students, advising and registration, plus entertainment and the opportunity to get acquainted with fellow students. In addition, subject placement exams will be given to establish the level of proficiency. Students may be placed in the regular or developmental curriculum as a result of the exams.

The Advisement and Orientation Office coordinates the activities of the Faculty Advisory Council, which is a panel composed of faculty members selected for their expertise in dealing with student-related matters. These advisers assist students in reaching their academic and career goals and provide personal attention for all freshmen and all pre-majors. Results of placement and achievement tests as well as copies of the students’ records are made available to the advisers for use in advisement.

Engineering, music, nursing, American studies, communication, education, human ecology, environmental studies, and humanities majors, and students who have completed 29 hours, go to their major departments for advising.

To schedule an appointment with an adviser, the student should go to the Advisement and Orientation Office, located in 258 Hooper Hall, or call (615) 755-4573.

Applying for Admissions

Admission requirements for freshmen are described below, followed by special requirements for adult applicants. Requirements for transfer students (students who have attended another college prior to UTC) are on page 6. Transient students and others who are not seeking a degree should refer to special requirements listed on pages 8.

Credentials for all Freshman Applicants

The following credentials must be submitted before an applicant can be considered for freshman admission:

1. Application for admission
2. Official high school transcript. The high school transcript may be sent any time after the completion of the junior year. A final transcript showing all grades must be submitted after high school....
graduation and must include type of diploma and date of graduation. Applicants with high school equivalency diplomas should submit scores from the General Education Development Test as well as official transcripts of completed high school work.

3. ACT or SAT scores (for freshmen under 21)

Requirements are as follows:

- $15.00 non-refundable application fee.
- Test as well as official transcripts of completed high school work.
- Applicants with high school equivalency diplomas need to enroll in developmental courses prior to college level courses. Taking a strong college preparatory curriculum in high school will help students do well on these placement tests.

High School Preparation

Completion of a college preparatory program in high school is expected for admission of freshmen. Minimal high school unit requirements are as follows:

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Units Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td>Algebra</td>
<td>2</td>
</tr>
<tr>
<td>Geometry</td>
<td>1</td>
</tr>
<tr>
<td>Laboratory Science</td>
<td>2</td>
</tr>
<tr>
<td>American History</td>
<td>1</td>
</tr>
<tr>
<td>World History or World Geography</td>
<td>1</td>
</tr>
<tr>
<td>History</td>
<td>1</td>
</tr>
<tr>
<td>A single foreign language</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

Applicants who have deficiencies in any of the above areas may be denied admission. Those who are admitted with deficiencies will be required to take courses which will not apply toward their college degrees. For further details, see the section entitled "Conditional Admission."

In addition to the minimum high school unit requirements listed above, students should plan high school courses of study that will prepare them for their specific areas of interest. In particular, four years of college preparatory mathematics are recommended for students considering majors in science, medical technology, engineering and other mathematics related fields. Engineering majors are also advised to take 3 units of science including physics.

After admission, UTC freshmen take placement tests in reading, writing and mathematics to determine whether they will need to enroll in developmental courses prior to college level courses. Taking a strong college preparatory curriculum in high school will help students do well on these placement tests.

Types of Admission

Two categories of admission for applicants under 21 years of age are described below. Special requirements for adult students (21 years of age or older) are described in the section entitled "Adult Freshman Admissions."

Regular Admission

Regular admission will be granted to graduates of approved high schools* who meet one of the following two descriptions:

1. A high school grade point average of at least 2.75 (on a 4.0 scale) and a minimum score of 16 on the Enhanced ACT (640 SAT) and completion of all 13 high school units listed above.

OR

2. A high school grade point average of at least 2.00 (on a 4.0 scale) and a minimum score of 21 on the Enhanced ACT (900 SAT) and completion of all 13 high school units listed above.

Conditional Admission

Students who do not qualify for regular admission are eligible for conditional admission if they meet the following minimal requirements:

1. Completion of the 13 high school units listed above;
2. Minimum high school grade point average of 2.0 (on a 4.0 scale);
3. Minimum score of 16 on the Enhanced ACT (640 SAT);
4. High school graduation or acceptable high school equivalency diploma (45 on the General Education Development test).

Applicants with extenuating circumstances who fail to meet conditional admission requirements will be considered for conditional admission on a case-by-case basis. Students admitted with high school unit deficiencies will be required to remove their deficiencies by taking specified courses within their first 42 hours of enrollment. Credit earned in such courses does not apply toward any degree requirements, including general education, major or elective requirements. Students admitted with a high school deficiency in American history are required by Tennessee law to complete 6 semester hours of college-level American history (Tennessee Code Annotated 549-3253).

Freshmen admitted on condition must earn at least 1.0 GPA during their first semester at UTC or suspension will result. In addition, they may be subject to one or more of the following conditions:

a) reduced course credit load;
b) specific course requirements;
c) specific academic advisor;
d) specific program of developmental studies;
e) enrollment in summer programs designed to improve academic skills.

Adult Freshman Admission

Applicants 21 years of age or older do not need to meet the high school unit requirements. However, these applicants must be high school graduates. Those in this age group who present a high school GPA below 2.0 may be placed on condition. Applicants with GED should refer to page 9 for specific requirements.

Transfer Students

Applicants for admission as degree seeking students who have been registered in another college or university are classified as transfer students. They must submit to the Undergraduate Admissions Office complete official transcripts from each previously attended college.

For admission as transfer students, students must have pursued courses appropriate to the curriculum at The University of Tennessee at Chattanooga, must be eligible to return to their last institution, and must meet The University of Tennessee at Chattanooga's continuation standards (see page 18 for standards). Students who graduated from high school in 1989 or after and are transferring less than 60 hours of semester credit, must also meet the minimum high school unit requirements and are required to take UTC's placement exams unless an exemption is granted. Refer to page 6 for high school unit and page 17 for placement exam requirements. Students in this category must submit an official high school transcript in addition to their college

* Approved high schools are those approved by the State Department of Education or by the regional accreditation association. In the case of graduates of high schools which have not been so approved, regular admission will be granted to applicants with high school grade point average of at least 2.75 and a score of 21 on the Enhanced ACT (900 SAT) and completion of all 13 high school units.
transcripts. Students whose records do not meet the standards required by the University for admission will be denied admission unless, in the opinion of the Dean of Admissions and Records, acceptance on scholastic probation is justified. If admitted on probation, students will be required to remove high school unit deficiencies within their first 30 hours of enrollment at UTC.

The University will usually accept, by transfer, work satisfactorily completed at regionally accredited colleges and universities. Transfer students from senior institutions must complete at least their last 30 academic semester hours of work at The University of Tennessee at Chattanooga. Transfer students from two-year institutions must complete their last 60 semester credit hours at a senior institution. A student who earns credit at a two-year college during his last 60 hours at UTC may choose not to apply the credit toward graduation. Transfer courses are usually accepted at full credit value as either specific course equivalents or electives.

Students wishing to transfer to The University of Tennessee at Chattanooga from regionally unaccredited colleges and universities must meet UTC's admissions requirements. Information concerning the acceptance of credit from such institutions will be furnished at the time of application.

Transfer credits accepted by The University of Tennessee at Chattanooga will be entered on the academic record only after the student has registered for classes at The University of Tennessee at Chattanooga. Applicants who fail to declare previous college attendance and to submit transcripts of such records will be subject to dismissal from the University.

Special Cases

Adult Special Status

An applicant 21 years of age or older who wishes to take undergraduate courses, but who does not plan to work toward a degree from The University of Tennessee at Chattanooga, may be admitted as an adult special student. The applicant must give satisfactory evidence of preparedness to take the courses open to him or her. An adult special student must meet the same course requirements as regular students since the special student's work is graded at the completion of the course. An adult special student may subsequently apply for regular student status at the University. In such a case the student's grades will be reviewed and up to 60 semester hours of credit may be counted toward fulfillment of degree requirements. Students who have previously been suspended or dismissed from the University of Chattanooga or The University of Tennessee may not enroll as adult special students. Students with college credit from another institution may not enroll as adult special students.

Audit Student Status

Adults who wish to attend undergraduate classes without earning credit or receiving grades may register as auditors only if the space is available in the class desired and if the instructor approves the registration. Any adult student entering under audit classification who subsequently wishes to take courses for credit must meet all requirements for admission to the University. Those under 21 may have this privilege only if they have fulfilled the admission requirements of the University.

Auditors are under no obligation of regular attendance, preparation, recitation, or examination. 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.

The tuition and fee charge is the same for audit registration as for credit registration. Academic records are maintained only for audited courses in which the student attends at least 75 percent of the class sessions.

College Challenge Program

The College Challenge Program is designed to give outstanding high school students an opportunity to preview college through taking selected college courses. Courses are offered during the summer or during the regular academic year. Courses will be offered at convenient times on the UTC campus. Special sections of regular college courses may be offered or high school students will be permitted to enroll along with college students in regular courses. The admission to the College Challenge Program requires the following:

1. Enrollment in high school or intention to return to high school in order to complete requirements for a diploma.
2. A grade point average of at least a 3.0 ( B ), and
3. Recommendation of high school principal or guidance counselor.
4. Permission of UTC teacher and/or department head.

Students will be permitted to earn up to 24 semester hours in the program and may take a maximum of 12 hours in the summer and no more than two courses during the fall and spring semester. The credits will be applicable to a degree at UTC or may be transferred.

Early Admission

The University has a program of early admission for exceptionally gifted students. In order to be eligible for the early admission program, a student at the end of the junior year in high school should have a 3.5 high school average and score in the 95th percentile or above of University norms on the ACT or the SAT examination. A student may apply for early admission with the consent of his or her parents and the approval of the student's principal or guidance counselor. Assuming the student meets the previously listed requirements, he or she will be admitted only if in the opinion of the Dean of Admissions and Records the student will clearly profit from this kind of placement. In most cases a personal interview with the student is required.

Such students may be considered for admission as full-time students, summer session students, or on a dual enrollment basis while completing secondary school.

GED Applicants

A high school equivalency diploma will be accepted in place of high school graduation if the applicant has scored at least 45 on the General Education Development test (GED). Applicants who are 21 years of age or older should refer to the section entitled "Adult Freshman Admissions" for further requirements. Applicants less than 21 years of age should refer to the section entitled "Freshman Admission Requirements" for further requirements. Please note that applicants with extenuating circumstances who fail to meet admission requirements will be considered for conditional admission on a case-by-case basis.
International Students
In making application for admission to undergraduate study, each international student will be required to provide the following:

1. A completed application for undergraduate admission accompanied by the $15 application fee.
2. Authenticated copies of the applicant’s academic records. These records should describe the courses of instruction in terms of years spent in school and types of subject matter covered with grades earned in each subject. These documents must be interpreted in English.
3. A minimum score of 500 on the Test of English as a Foreign Language for applicants whose native language is not English. Information about this test may be obtained from the Educational Testing Service, Box 899, Princeton, New Jersey 08540.
4. A medical record, filled out and submitted no earlier than six months prior to proposed entrance. All foreign students must submit evidence of a negative tuberculin test prior to being given permission to enroll.
5. Evidence dated no earlier than six months prior to registration that the applicant has adequate financial resources to meet the expenses of attending the University, and that such resources will be available to the applicant in the United States prior to the date of his or her registration at the University.
6. Students must date and sign an estimate of expense form showing that they are aware of the costs in attending the University.
7. Transfer students must supply a letter of good standing from their Foreign Student Adviser or dean of students and must meet the requirements for admission to the University as a transfer and an international student. These requirements are stated in the section on Transfer Students.

All application materials must be submitted and processed by August 1 for the fall semester, December 1 for the spring semester. All admission materials should be sent to the Office of Undergraduate Admissions.

Post-baccalaureate Admission
See under Graduate Studies, page 29.

Readmission
Former students in good standing who have been away from the University for one semester or more (excluding the summer) must apply for readmission. If they have attended any other college or university during their absence, they must also meet the requirements for admission to the University as transfer students as stated in the section on Transfer Students, with the exception that no application fee is required for readmission. Students who have been suspended or dismissed from the University are referred to the section on Continuation Standards for the conditions under which they may be readmitted.

Special Audit and Special Fee Students
Tennessee residents who are at least sixty years of age may audit classes on a space available basis at the University without paying a fee. Similar arrangements are available for Tennessee residents who are 100 percent disabled.

Transient Students
Students who are enrolled in another college or university and do not wish to transfer to UTC and seek a degree may enroll as transient students. Enrollment under this condition is usually for one semester and students are usually enrolled in courses that will transfer to another institution and apply toward degree requirements. A letter indicating that the student is in “good standing” (eligible to return) must be sent to the Office of Undergraduate Admissions from either the registrar or academic dean of their present institution. A transient student cannot be on any type of academic or disciplinary restriction, warning or action such as probation, suspension or dismissal. If a transient student wishes to continue enrollment past the initial semester, an additional letter of good standing may be required.

Appeals for Admission
Students who are denied admission have the right to appeal the decision to the Chancellor of UTC. Appeals must be submitted by the end of the first five class days of the fall and spring semesters and the first two class days of any summer term. Students granted admission by appeal may be required to meet the same conditions as stated above.

Residency Appeals Procedure
All residency appeals for a given semester must be submitted along with all necessary supporting evidence to the appropriate admissions office (Undergraduate or Graduate) on or before 5:00 p.m. of the fifth day of classes counting from the first official day of classes. Those appealing for a five-week summer term have until 5:00 p.m. of the third day of classes. These deadlines also apply to students seeking to pay in-state fees due to their full-time employment in the state of Tennessee. Decisions on appeals made before the deadline will be effective for that semester. Appeals received after the deadline will be effective the following semester.

The Associate Director of Admissions serves as the primary classification officer for undergraduate students enrolled at The University of Tennessee at Chattanooga. Residence classification appeals should be made in writing (on the appropriate form which can be obtained from the Admissions Office) to the Associate Director of Admissions, 129 Hooper Hall. Appeals should include appropriate evidence to support the student's establishment of domicile in the state of Tennessee. The decision of the Associate Director of Admissions may be appealed to the Dean of Admissions & Records, 256 Hooper Hall.

The decision of the Dean of Admissions may be appealed to the Chairman of the Residency Appeals Committee by making this request in writing to the Dean. The Chairman of the Committee will schedule a hearing to review the student's request and, following the hearing, the Committee will make a decision on the appeal. The student may be present at the Committee's hearing and may bring to the hearing any materials or other individuals (including legal counsel) that he or she believes will support the appeal.

The student may appeal the Committee's decision to the
Chancellor of UTC in writing. The student has the right to appeal the Chancellor's decision to the President of The University of Tennessee in writing. Final appeals are decided by the Board of Trustees for The University of Tennessee.

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 immunity or having been immunized with a live measles vaccine after January 1, 1980 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 returned to the Student Affairs Office, second floor of the University Center or mailed to that office. An official copy of the "Permanent Tennessee Certificate of Immunization" (form PH-2414) or a comparable immunization form from another state will also be acceptable.

Special Credit
Advanced Placement
In addition to advanced standing by transfer work, students admitted to the University may obtain advanced placement by any of several examinations.

The University participates in the advanced placement program of the College Entrance Examination Board. Applicants who have taken the advanced placement examinations may submit the results to the Undergraduate Admissions Office, 129 Hooper Hall, for consideration.

In general the University will grant credit and advanced placement in the subject of the examinations to those entering students who earn scores of three, four, or five. Some departments may exercise their option to require a minimum score of four. Such students may then begin their college study at the level for which their advanced preparation has qualified them. Examinations with grades of three or two will be referred to the appropriate department, which will determine whether credit or advanced placement can be granted.

Credit earned through advanced placement will be entered on the student's academic record at the University but will not be computed in the grade point average.

College Level Examination Program
Students will be allowed 15 elective hours for successfully passing CLEP general examinations. They may earn three hours of elective credit by successfully passing the CLEP general examination in English Composition with a score of 530-610. Students may earn three hours of elective credit per exam by passing CLEP general examinations in mathematics, humanities, natural sciences, social sciences, and history with a score of 421-500. These credits will not satisfy UTC general education requirements.

UTC also recognizes and accepts credit derived from several of the subject area examinations of the College Level Examination Program of CEEB. The CLEP subject examinations measure achievement in a number of specific undergraduate courses. A report of test scores should be sent directly to the Undergraduate Admissions Office, 129 Hooper Hall, for consideration. Individual academic departments set standards for the acceptance of CLEP credits. Therefore, the required percentile grade for credit at UTC varies. Some departments accept no credit via CLEP.

Credit earned will be entered on the student's academic record but will not be computed in the grade point average.

Cooperative Education Program
The Cooperative Education Program provides students with the opportunity to gain practical work experience in their major. Students will be placed in a work experience setting which closely relates to their academic major. The students will be placed on an alternating schedule which requires that they work full time one semester and attend school full time the next semester, or on a parallel schedule which requires the students to work a minimum of 15 hours/maximum of 20 hours per week and attend school full time during the same semester.

Students placed in co-op should register with a major department for course 001 at the beginning of each semester they are employed. Only students who have advanced approval of the Office of Cooperative Education and their major department will be enrolled in this course.

Correspondence and Extension Credit
Up to one-fourth of the hours (excluding physical education) required for an undergraduate degree may be earned by correspondence or by correspondence and extension combined. The same limitations apply to hours in the major. All such courses must meet degree requirements at The University of Tennessee at Chattanooga. Correspondence and extension courses may not be taken within the last 30 hours of degree credit work unless advanced approval has been granted by the Petitions Committee.

Catalogs of correspondence study offered through The University of Tennessee are available for distribution in the Office of Continuing Education.

Credit for Experience
Individuals who have not earned a baccalaureate degree may be eligible to receive credit for work experience, in-service training, and certified professional programs through the UTC Individualized Education Program. Information concerning the IEP is available in the Office of Cooperative Education, (615)755-4735. A fee of $39 will be charged for each semester hour of credit awarded.

Credit by Special Examination (Undergraduate)
Any student who has been admitted to the University is eligible to receive credit by special examination for competence gained through study or experience primarily independent of University class activities. Credit by special examination may be given for courses offered in the catalog with the exception of:

1. courses described as directed research, tutorial, or directed independent study;
2. any course from which the student has been exempted by placement examination or which the student has presented for admission purposes;
3. any course in any education teaching block; or
4. courses in which the student has received a final grade.

A fee of $39 will be charged for each semester hour of credit.

Students seeking credit by special examination shall, on forms provided by the director of records, 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 shall grant or deny the request pursuant to the standards stated on the request form. The departmental committee shall deny the request if it determines that the student would realize substantial benefits only from participating in the activities of the course in question.

The method for designing, administering, and evaluating the special examination will be determined by the departmental committee on special examinations. The examination shall in all circumstances be comparable in scope and difficulty to a comprehensive final examination in that course. No student will be allowed to repeat a special examination in a given course within one year.

The student will receive credit, to be recorded as S (Satisfactory) on the academic record upon demonstrating the development of the abilities and attitudes of students who have taken the course and upon passing the examination with a minimum equivalent grade of C. Examination results judged inadequate will be recorded as NC (No Credit) on the student's academic record. Neither S nor NC grades will be used in computing the grade point average.

Limitations on Nontraditional Credit: CLEP, IEP, Military Service, Special Examinations (Proficiency or Challenge Examinations), Competency Based Programs, ACT-PEP (Nursing majors only).

The maximum undergraduate credit that may be earned by these means is 60 semester hours. The limit for special or nontraditional credit is 30 hours for any one of these categories. Normally, nontraditional credit will not apply toward the last 30 hours of residency; however, students who have completed 30 hours of traditional course work at UTC and have not yet attempted the last 30 hours may petition to apply a maximum of 15 hours of these types of credit toward the last 30 hours. Application for IEP credit must be initiated no later than the semester preceding graduation.

Except for credit by special examination (undergraduate) most credit earned by these nontraditional means is elective. Exceptions to this principle may be made only with the written approval of the respective departments, indicating specifically the amount and type of credit to be applied to a major degree program.

Military Service Credit

The University may grant credit for military science to students with six or more months of honorable active service in the armed services of the United States or in a service academy. A total of 30 semester hours of elective credit, including basic military service, may be accepted from the Community College of the Air Force. University policy permits and encourages granting credit for appropriate educational experience in the armed services in accordance with their evaluation in the American Council on Education’s 1986 Guide to the Evaluation of Education Experiences in the Armed Services or by the Commission on the Accreditation of Service Experiences evaluation service. Veterans requesting military service credit should submit a copy of their DD Form 214 to the Records Office for evaluation.

STUDENT FINANCIAL AID

In the belief that educational opportunities of qualified students should not be controlled by their financial resources, The University of Tennessee at Chattanooga offers a comprehensive program of student financial assistance. UTC uses a variety of resources to assist students who otherwise might find the costs of a college education prohibitive. Through federal, state, and university financial programs a student may receive one or more different types of assistance to cover educational costs.

There are four basic types of financial aid for UTC students: scholarships, grants, loans, and part-time employment. These are awarded individually or in combination, depending on the student's financial need.

Financial need is the difference between the student's cost of attendance at the University and the family's computed contribution to that cost. To assist in determining the student's financial need, the University uses the needs analysis system of the American College Testing Service (ACT). Through the use of the ACT Family Financial Statement, the Financial Aid Office determines the amount the student and the student's family can be expected to contribute toward meeting educational expenses. A student's financial need is then met with the various types of financial aid. The ACT Family Financial Statement is available in the UTC Financial Aid Office, or a high school's guidance counselor's office.

Scholarships

The University of Tennessee at Chattanooga scholarship program for new and currently enrolled students is made possible through funds provided by the University, outside foundations, estates, private businesses, civic groups, individuals, and alumni.

Most scholarships are awarded to students who demonstrate strong academic achievement and proven need for financial assistance. There is, however, an academic merit scholarship program based solely on academic achievement. Unless otherwise stated, to compete for merit scholarships only, a student currently enrolled at UTC must submit a UTC Application for Scholarship. New first-time freshmen and transfer students may apply via the Application for Undergraduate Admissions and Academic Scholarship. A financial statement is not necessary. Academic achievement is judged for entering freshmen by the applicant's secondary school academic record and scores on the American College Testing (ACT) or Scholastic Aptitude Testing (SAT) admissions tests. In many cases high school activities are also considered. Academic achievement for currently enrolled and transfer students is judged by the applicant's cumulative grade point average, and earned credit hours from colleges attended.

All scholarships, including merit scholarships, are highly competitive. Despite the generosity of University friends and alumni, there are not enough funds to provide aid to all qualified students. Early application is advised.
The University guarantees in the fall of each year scholarships to first-time freshmen who present certain minimum high school grade point averages and ACT or SAT scores. New freshmen who apply for admission by February 1 and have a 3.5 grade point average and a 26 Enhanced ACT (1020 SAT) will receive an amount that will cover in-state maintenance fees (approximately $1,500). Applicants with a 4.0 grade point average and 31 Enhanced ACT (1240 SAT) will receive a minimum of $2,000. Scholarships are renewed for up to four years based on the student’s academic performance and the funds available. A renewal scale, approved by the Scholarship Committee, is published each year.

Each year 25 outstanding entering freshmen are selected to participate in the William E. Brock Scholars Program. These scholars receive four year stipends of $2300 and pay in-state fees regardless of residency classification. Selection is based on scholarship, leadership, and service. Application is made directly to the Brock Scholars program. For further information see the William E. Brock Scholars section of the catalog.

In addition to the Brock Scholars, sixteen prestigious merit scholarships are awarded each year to incoming freshmen: five Andy Holt scholarships (sponsored by the UT National Alumni Association) for $1,500 each and renewable for four years; five Chancellor’s and five Leadership scholarships (sponsored by the UC Foundation) of $1,800 each and renewable for four years; one Horace Traylor Leadership Scholarship (sponsored by the UC Foundation) in the amount of $1,800 per year for four years. Priority goes to top academic students who exhibit excellent leadership abilities.

UT alumni valedictorian scholarships are available to the valedictorians of Tennessee high schools. UT alumni community college scholarships are available to the top two students of each of the Tennessee community colleges. These one-year $1,100 awards are available at all campuses of The University of Tennessee.

The University also offers a transfer scholarship program for students transferring from junior and community colleges. This scholarship recognizes the student’s outstanding achievement for academic work in the two-year program. Each year four entering juniors are selected for these $1,100 two-year awards.

Approximately 600 scholarships are available for UTC students. Most of these scholarships are awarded for one year. However, based on the availability of funds, students who complete at least 12 credit hours per semester and maintain the minimum grade point average required by the scholarship they hold will automatically be continued on scholarship in subsequent years.

To be considered for scholarships, freshmen and transfer students admitted after February 1 and continuing students without scholarships should complete the UTC Application for Scholarship. This form must be received in the Financial Aid Office no later than March 1. Applicants will be considered for all scholarships coordinated by the University Financial Aid Office.

Music and athletic performance scholarship applicants should contact the director of their program of interest.

Students interested in Army ROTC should contact the UTC Military Science Department for information on two-, three-, and four-year scholarships. These scholarships pay the cost of all tuition, textbooks, and laboratory fees. Additionally, the scholarship student receives $100 per month (up to 40 months) subsistence pay during the academic year for the duration of the scholarship.

Minority Scholarships
In addition to the regular scholarships program, the University has a special program of scholarship awards for black students. Awards range from the amount of in-state fees to in-state fees, dorm and books. These scholarships are awarded to new students who have at least a 3.0 grade point average and at least a 16 on the Enhanced ACT admissions test and meet the February 1 priority deadline. Scholarships will be renewed based on the student’s academic credentials and the funds available.

Grants
Pell Grants
All undergraduate students applying for institutional assistance based on a financial need should apply for this federal grant program. Other forms of financial assistance will not be extended to a student until eligibility for the Pell Grant has been determined. To apply, the student submits the Family Financial Statement to the American College Testing Service. Approximately six weeks after the Family Financial Statement is mailed, the student should receive the Student Aid Report. Because the Student Aid Report indicates eligibility for Pell Grant and other Federal aid, it must be sent to the Financial Aid Office before an award can be processed.

Pell Grant awards range from a maximum of $2300 to a minimum of $100. The amount of the award is based on financial need and the number of hours enrolled. Regulations and provisions of the Pell Grant Program are subject to change by federal legislative action.

Supplemental Educational Opportunity Grants
This is a program of federal grants available to entering freshmen, transfer, and enrolled undergraduate students with high financial need.

Student Employment
The University participates in the College Work-Study Program administered by the U.S. Department of Education. To be eligible for the College Work-Study Program, a student must be accepted for admission or be in good standing if currently enrolled. A student’s eligibility further depends upon the need for employment to defray college expenses. On-campus part-time work opportunities are available in the various departments, offices, and agencies of the University. Off-campus work may also be available. The ACT Family Financial Statement is required.

Employment opportunities provided under the institutional student employment program are offered to students who indicate a desire to work and who do not meet the financial need requirements for the College Work-Study Program. The UTC Placement and Student Employment Center maintains vacant position information for this type of on-campus student employment. Institutional work is funded by the University.

Part-time employment, handled by the Job Location and Development Program in the Financial Aid Office and the UTC Placement and Student Employment Center, is also available in private businesses, corporations, and industries in the Chattanooga area. To be eligible for this part-time employment, the student must meet the requirements established by the employing agency.

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

Student Loans

Robert Stafford Student Loans (Formerly Guaranteed Student Loans)

These loans may be available through banks, credit unions and savings and loan associations to help meet educational expenses. Students should contact their bank or the UTC Financial Aid Office to obtain a loan application. To establish need for these loans, students must file the ACT Family Financial Statement. To receive the loan, a student must be admitted to or in regular attendance and in good standing at the University and in good standing for financial aid. Interest on such loans is paid by the federal government while the student is in school. During the repayment period, which begins six months after graduation or withdrawal from the University, the student pays eight percent simple interest. The maximum amount of a loan to an undergraduate in a 12-month period is $2,625 for freshmen and sophomores, $4,000 for juniors and seniors, and $7,500 per year for graduate study.

Total loans outstanding may not exceed $17,250 for the undergraduate or $24,750 for the undergraduate, graduate and professional student.

Complete information is available at most financial institutions. If you are unable to secure a guaranteed student loan from your hometown bank or credit union, contact the UTC Financial Aid Office for further instructions.

Parents Loan for Undergraduate Students (PLUS) and Supplemental Loan to Students (SLS)

A non-need-based source of loan funds is available to the parents of dependent undergraduates as well as independent undergraduates and graduate/professional students.

Each year the parents can borrow up to $4,000 for each undergraduate dependent child, not to exceed the cost of attendance minus financial aid. Independent undergraduates may borrow up to $4,000 per year.

The cumulative maximum loan amount that can be borrowed under this program is $20,000.

The interest rate on PLUS and SLS loans is approximately 12 percent.

There is no federal interest subsidy on PLUS loans. If the borrower is a parent or a less than full-time student, repayment of interest and principal must begin 60 days after disbursement of the loan. If the borrower is a full-time student, or qualifies for some other deferment (i.e., parents in military), he or she goes into deferment for the principal only. Payment of interest must begin within 60 days of the loan disbursement. The lender may grant forbearance of accrued interest and capitalize it when repayment resumes.

Detailed information and application forms are available directly from lenders or from the Financial Aid Office. It is also possible to obtain information and application forms from state guarantee agencies.

Perkins Loans (formerly National Direct Student Loans)

Long term loans at five percent interest are available. This program is funded through the U.S. Department of Education. Proven need for financial assistance determines eligibility.

Loan repayment and interest on Perkins Student Loans are deferred until after graduation or as long as the individual remains in half-time attendance at an accredited institution of higher education in the United States. Repayment may also be deferred for up to three years for special circumstances as outlined in the Reauthorization of the Higher Education Act of 1985. The maximum repayment period is normally 10 years with the current minimum annual repayment $360 or 10 percent of the accumulated loans, whichever is greater.

If upon graduation the borrower becomes a full-time teacher in a public or nonprofit school that is designated by the U.S. Commissioner of Education as having a high enrollment of low income families or becomes a teacher of the handicapped, 15 percent of the total principal plus interest is cancelled for the first and second year of teaching. 20 percent for the third and fourth years, and 30 percent for the fifth year. If after graduation the student becomes a staff member in a Title I preschool program that is operated for a period comparable to a full school year, 15 percent of principal plus interest will be cancelled for each year of service.

An undergraduate may be extended a maximum loan of $4,500 for the first two years to an accumulated loan total of $9,000 for an undergraduate and $18,000 for a graduate or professional student. The above regulations and provisions of the Perkins Loan Program are subject to change by federal legislative action.

The UTC, Underwood, and Ansbach Loan Funds

Student loans from University sources are available to currently enrolled students with a 2.0 or above cumulative grade point average. A loan of up to $1,500 a year can be offered. One surety or cosigner is required for each promissory note. Repayment of principal and unpaid accrued interest shall be made over a period commencing the first of the fourth month following graduation, withdrawal, or transfer from the University, or following the date on which the borrower ceases to carry at least one-half time academic course load. Repayment of principal and interest is made in monthly or quarterly installments (as agreed to between the principal and the University) at the rate of not less than $30 per month plus accumulated interest or 1/36 of the amount of this note, plus accumulated interest, whichever is greater. The interest is six percent per annum. The borrower may, without penalty, pay all or part of the loan at any time before the maturity date.

Other Assistance

Tennessee Student Assistance Corporation (TSAC) Grant Program

Grants are made by the Tennessee Student Assistance Corporation to residents of the state of Tennessee who show a financial need as supported by the ACT Family Financial Statement. TSAC awards range from a maximum of $725 to a minimum of $200. Students should apply before July 1.

Georgia Tuition Equalization Grant

Grants are made by the Georgia Finance Authority for $462 per semester to Georgia residents who are juniors or seniors at UTC.

Students must live within 50 miles of UTC and more than 50 miles from a four-year Georgia educational institution. Full-time enrollment at UTC is required. Applications are available in the UTC Financial Aid Office and must be filed by the last day to register for classes in any term.
Eligibility for Continuation of Financial Assistance

As a general rule students are eligible to continue on financial assistance at UTC if they meet UTC continuation standards (published in the UTC catalog), do not abuse their right to receive financial assistance and make satisfactory progress in their program of study. A separate continuation scale for scholarships is published each year.

Students are suspended from financial assistance immediately in any term they make no progress (0.0) or are academically suspended or dismissed. Students who are enrolled full time must earn at least 20 hours an academic year to be considered making satisfactory progress in a program. Scholarship students must complete 24 hours. The required hours of progress are prorated for part-time students and students in graduate programs. Students who do not make progress will not be awarded or disbursed financial aid. Also, undergraduate students who have attended college for more than six years (equivalent full time) are not eligible for financial aid. For complete details on suspension, non-renewal and appeal, contact the Financial Aid Office.

Application Procedures

Because a student's family resources can decrease and increase significantly from year to year, the University requires each student to apply annually for renewal of need-based financial aid. Students currently receiving scholarships will be automatically reviewed for renewal according to the specific scholarship renewal criteria.

1. Although applications will be processed throughout the year, students should complete and submit the ACT Family Financial Statement on or before the following priority deadline dates to receive maximum consideration for all available funds for the Fall semester.
   - February 1: new students
   - March 1: currently enrolled students
2. Students applying for scholarships should submit the UTC Application for scholarship on or before the priority date of March 1. Students currently receiving scholarships are not required to submit the Application for scholarship. If applying only for academic merit scholarships a financial statement is not required but recommended.
3. All undergraduate students applying for assistance based on financial need should apply for the Pell Grant.
4. Students should have begun the process for admission to the University prior to or at the same time as applying for financial aid.
5. Entering freshmen applying for scholarships only need to complete the Application for Undergraduate Admissions and Academic Scholarships.
6. Tennessee residents should apply for the Tennessee Student Assistance Award if requesting aid based on financial need.
7. Prior to awarding any assistance, federal regulations require that UTC Financial Aid Office have a financial aid transcript on file from each school (beyond high school) a student has previously attended. It is the responsibility of each student to see that the completed transcripts are sent to the UTC Financial Aid Office. Blank financial aid transcript forms are available from the Financial Aid Office.
8. The Financial Aid Notification Letter is the UTC award letter which states the amount and types of financial aid awarded. Students must accept or decline award within 14 days of receipt.
9. Students must make satisfactory progress toward the degree to continue on financial aid. There are two standards of progress the student must meet. First, students must be eligible to continue according to the University's "Standards of Continuation" published in the catalog. Second, students must earn a required number of hours each year based on their enrollment as a part-time or full-time student. A thorough explanation of this standard and a set of guidelines may be obtained in UTC's Financial Aid Office. A separate continuation scale for scholarship is published each year.
10. If students expect to have funds available for fee payment, they must complete all procedures, submit necessary documents and accept their award by August 1 for fall semester and December 1 for spring semester. For all Title IV funds (Pell, Perkins, Stafford, Supplemental Grant, College Work Study, Supplemental Loan) these documents may include any or all of the following: Family Financial Statement, application for admission (new students only), financial aid transcripts (transfer students only), and any other documents that may be required of a specific program. Also, all required verification of information and any errors must be corrected by these deadlines if a student expects to receive funds by fee payment.

The Financial Aid Office regularly provides assistance with the financial aid application process and financial budgeting. Also, students or parents may request a review of the determination of the student's need and award.

For applications and further information on financial aid call or write the Financial Aid Office, 253 Hooper Hall, The University of Tennessee at Chattanooga, 615 McCallie Avenue, Chattanooga, Tennessee 37403, (615) 755-4677.
STUDENT FEES AND EXPENSES

Tuition is free to residents of Tennessee. Out-of-state students must pay the tuition charge. A student’s residence is determined primarily by the residence of the student’s parents. Exceptional cases, including guardianship, are given special consideration and are determined on the basis of the particular circumstances in each case. 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 Office of Undergraduate Admissions with this information in order that a reappraisal of residence status may be made.

Tuition and Maintenance Fees

<table>
<thead>
<tr>
<th>Maintenance Fee</th>
<th>Undergraduate</th>
<th>per semester $712*</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>per semester hour or fraction thereof; minimum charge $144*</td>
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<tr>
<td>Graduate</td>
<td></td>
<td>per semester $929*</td>
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<tr>
<td></td>
<td></td>
<td>per semester hour or fraction thereof; minimum charge $236</td>
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Tuition and Maintenance Fee
(Out-of-state students only)

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>per semester $2,314*</th>
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<tbody>
<tr>
<td></td>
<td>per semester hour or fraction thereof; minimum charge $390</td>
</tr>
<tr>
<td>Graduate</td>
<td>$283</td>
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<tr>
<td></td>
<td>per semester hour or fraction thereof; minimum charge $566</td>
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*Thirty dollars of the fee is allotted to the bond obligation of the University Center.

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

Activity Fee

All students registered will be assessed an activity fee of $3 per hour (maximum $32). The activity fee is non-refundable.

Art Fee

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

- Art Education.................................$10
- Photography, Graphic Design, Printmaking........15
- Beginning Sculpture..........................15
- Three-Dimensional Design......................35

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.

Disabled Persons Fees

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

For more information call the Bursar's office at (615) 755-4781.

Listener’s Fee

Individuals 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 Continuing Education Division at (615) 755-4346.

Health and P.E.

Various fees are charged to students enrolled in special Health and P.E. classes. Fees are due on the official date of fee payment and paid with regular tuition and maintenance fees.

- Bowling..............................................$25
- Canoeing & Rafting..............................10
- Camping & Outdoor Education..................10
- Scuba, Lifesaving & Safety........................30
- Hiking & Backpacking..........................10
- Sailing.............................................15
- Water Skiing.......................................25
- Rock Climbing & Repelling.....................10
- Golf................................................20

Fees are subject to change after the printing of this publication.

Music Fee

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

- Per one-half hour instruction.............................$30
- Per one hour instruction.................................. $60

Post-baccalaureate Fees

Post-baccalaureate students pay fees at the undergraduate rate.
Senior Citizens Fees
Tennessee residents who will 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 more information call the Continuing Education Division at (615) 755-4346.

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

Other Expenses
Application Fee .................................................................$15
A nonrefundable fee payable at the time initial application is made.

Bad Check Fee
Any checks received by the University which fail to clear the bank on which drawn will incur a service charge of $10 if paid within the first seven days. After the seventh day the service charge will increase to $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 bad checks to the University.

Graduation Fee

- Bachelor's Degree ..................................................$20
- Master's Degree ...................................................$30

Fee is payable at the beginning of the semester in which the candidate is to graduate. Academic robes will be available for purchase from the bookstore.

Housing
Room rents vary from $600 to $840 per semester according to the accommodations available. A $25 reservation/damage deposit is required from students applying for housing. In addition a $75 advance payment is required for fall semester. Fees not paid on regular fee payment will incur a $15 late fee within the first six days. After six days the late fee will increase to $25. If the University must bill for dorm fees a $5 deferred fee will be due in addition to the late fee.

Student Dining Charge Cards
Students may apply for a Diners Choice Charge Card. The charge card allows students to charge meals or a snack at any campus food service or mini market location. For complete information regarding the three plans available and an application, contact Food Service, UTC University Center, 755-4200.

Orientation
A $50 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 .........................$48 per semester
Reserved parking decal (summer) ..........$24 per semester
General parking decal .................$30 per year
Perimeter parking decal .................$5 per year

Special Examination Fees
Payable for each proficiency or validation examination.
- Undergraduate ..................$39 per credit hour
- Graduate ..................$53 per credit hour

Fee Payment
A student will not be allowed to register with a debt due the University.

General
On Saturdays when the Registration Office or Business Office may be open for a part of the day, the late registration service fees scheduled to be in effect on the following Monday will apply to fee transactions handled on Saturday.

No student is officially authorized to attend classes until he or she has properly registered and paid fees.

Upon receipt of full, partial, or incomplete schedule, students are registered and responsible for payment of fees. The Registration Office must be notified in writing prior to the first official day of classes that he/she wishes to cancel registration. Those students that withdraw after classes will be responsible for a percentage of fees plus late fees according to the withdrawal charge under "Refund of Fees and Adjustments." Students who have not paid fees or made satisfactory arrangements with the bursar by the second official class day will be canceled. This applies to all students regardless of source of funds, including those whose fees are billed, deferred, waived, or paid with personal funds. Students must have their fee receipt validated on the official fee payment dates to void the assessment of late fees.

Before paying fees, check your fee card to be sure your name, social security number, and all charges are assessed and correct. Additional courses and/or assessments which must be billed will be assessed a $5 deferred fee.

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

The University accepts cash, checks, MasterCard, and Visa for payment of fees. Counter checks are not accepted. If unable to pay fees on the regular fee payment days, prepayment is accepted in the Bursar’s Office or by mail. Late fees will be assessed according to postmark date.

Prepayment Plan
A prepayment plan has been developed and implemented. Under the 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. Students and/or parents wishing to participate in the prepayment plan should 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 at fee payment. The deferred amount will be divided into two equal payments, payable on the 30th and 60th calendar day of the term. An additional $25 will be assessed on each monthly installment not paid on or before the due dates. Financial aid recipients must first apply their aid toward payment of fees, regardless of source of funds. In order to participate, you must complete a deferred payment plan contract.

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 in two installments on the 30th and 60th calendar day of the term. A late payment charge of $25 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.

Fall and Spring Semester
Students must pay their fees on the regular dates designated for this purpose. For more detailed information regarding fee payment dates, refund information, etc., refer to the schedule of classes (STARS) for the particular term in question. Effective the first regular business day (excluding Saturday, Sunday, and any holidays) following the last regular fee payment day, a $15 late payment/registration fee will be charged for the first six calendar days. A $25 late payment/registration fee will be charged for the next six calendar days. After the second official class day, students will be canceled for nonpayment of fees.

Summer Terms
For summer terms, fees must be paid within the first two business days beginning with the first day of classes. Thereby the following four business days a $15 late fee will be assessed. Students who have not paid within two business days will be canceled for nonpayment of fees.

Refund of Fees and Additional Charges

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

All charges and refunds will be made to the nearest even dollar. All charges are subject to subsequent audit and verification and 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.

Refunds on dropped courses, in accordance with the refund policy, will not be made until after the tenth week of the semester.
ACADEMIC REGULATIONS

Catalog Effective Dates
The catalog in effect at the time of entry will be used to determine degree requirements if the degree is conferred within 10 years. Students, however, may also elect the current catalog at the time of reentry, the catalog in effect when a new major is selected, or a catalog reflecting a revised curriculum. Transfer students may use the catalog in effect at the time of their first entry into college provided that the transfer to this institution is made within five years of that date.

A student seeking recommendation of The University of Tennessee at Chattanooga for initial teacher certification or endorsement must satisfy the current UTC approved program requirements on file with the Tennessee Department of Education at the time of application for certification.

Registration Limits
Students are classified as full time if they are registered for 12 hours or more. Students registered for fewer than 12 hours, either by their own choice or by University regulations, are classified part time.

Students wishing to complete degree programs in four academic years will need to schedule 16 hours each semester. Schedules of over 20 hours are not permitted unless the students have obtained advance approval of the Petitions Committee.

The maximum load for any 5 week term of summer is 7 hours; for any 7 1/2 week term the maximum load is 10 hours; any combination of terms is 10 hours, and the maximum registration is 20 hours for the entire summer session. The written consent of the adviser is required in order to register for a total of 17 to 20 hours in the summer. Any exceptions must receive advance approval by the Petitions Committee.

Any student registered for credit courses may enter classes as an auditor, subject to the approval of the student's adviser and of the instructor whose class is audited. An audit registration may not be changed to a credit registration later than the last date of registration for the semester. Audit registrations are zero (0) credit.

Course Numbers and Levels
Courses offered by the University are listed in each college or school section with the course numbers, title, credit, course descriptions, and prerequisites. The numbers identify the level of the courses. In special circumstances a student may register for a course above the stated level when in accordance with departmental policy and on recommendation of the adviser. Freshmen, however, are not permitted to register for 300- and 400-level courses. For any undergraduate degree, students must complete a minimum of 30 hours of courses at the 300 level or above.

Course Numbers Level
000-099 Activity, service, or noncredit courses. A maximum of eight hours of S grade in courses in this group may be applied toward a degree.

100-199 Primarily for freshmen but may be taken by sophomores and juniors. Senior registrations at this level are not recommended.

200-299 Primarily for sophomores but open to juniors and seniors.

300-399 Juniors and seniors.

400-499 Seniors and graduate students. When taken for graduate credit, the letter G will precede the credit hours.

500-699 Restricted to fully qualified graduate students.

Classification
Students are classified as freshmen, sophomores, juniors, and seniors according to the number of hours earned:

- Freshmen — 0-23 semester hours
- Sophomores — 24-59 semester hours
- Juniors — 60-89 semester hours
- Seniors — 90 semester hours or more

Institutional Credit and Developmental Studies Program
Institutional credit will be assigned to all developmental courses in reading (EDCI 105), mathematics (MATH 105, 106), study skills (USTU 100), study skills lab (HSRV 100, PSY 100, SOC 199), and writing (ENGL 105,106). This credit will be in addition to all degree requirements. It will not apply to the hours required for graduation, either major requirements, general education requirements, or elective hours. Neither will it be counted in the grade point average for graduation or honors. While the student is enrolled in developmental courses, however, institutional credit will be counted in the grade point average in determining the student's eligibility to continue in residence at UTC as outlined in the retention and continuation standards.

Effective Fall 1986 and thereafter, first time freshman students who are required or who volunteer to enroll in developmental studies courses must successfully complete them within the first 42 attempted hours counting both institutional and regular credit. Transfer students must complete required developmental courses within 30 attempted hours following initial enrollment at UTC. Exceptions may be made in individual cases only on recommendation of the appropriate course instructor to the director of the developmental studies program. Appeal of decisions may be made to the Petitions Committee.

Students may drop a developmental studies course only with the permission of the course instructor, director of developmental studies, or a designated adviser (a list of persons authorized to sign for drop will be provided).

To exit the developmental studies program, a student must have a grade of C or above in all courses of his or her program of developmental studies.

Placement Exam Requirements
All new undergraduate students at UTC are required to take UTC placement exams in reading, mathematics, and writing prior to enrollment in these courses. All new enrollees are strongly advised to take placement exams during the first week of their first semester.
and, are required to take the exams by term's end. In general, transfer student with acceptable performance in college level courses and/or acceptable ACT/SAT scores will be exempt from the reading test.

Freshmen students who are required or who volunteer to enroll in departmental studies courses must successfully complete them within the first 42 attempted hours. Transfer students must complete developmental courses within 30 attempted hours following initial enrollment at UTC.

In general, the only students who are exempt from taking one or more of the placement exams are students with advanced placement or transfer students meeting one of the following criteria:
- Mathematics Grade of C or better for developmental algebra (Math 105, 106, or 107) or college algebra (Math 135) or trigonometry (Math 145) or calculus (Math 136, 150, etc.). If credit in these courses is several years old, students who need to enroll in mathematics at UTC are encouraged to take the placement test for advisement purposes. Students with credit for mathematics courses other than those specified above are not exempt from taking the mathematics placement test.
- Writing Credit in developmental writing (English 100, 105, or 106) or freshman composition (English 101, 102, 121, or 122);
- Reading Acceptable performance in college level courses or acceptable ACT/SAT scores.

Students at Academic Risk
Undergraduate students who demonstrate that they may be at academic risk may be required to enroll in certain courses and participate in programs, including summer programs, designed to enhance their academic skills. Credit accrued may not necessarily be applicable to a degree.

Retention and Continuation Standards
In order to be able to continue in residence at UTC, students must earn a minimum grade point average in accordance with the following scale of attempted hours:

<table>
<thead>
<tr>
<th>Hours Attempted</th>
<th>Grade Point Average Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-23</td>
<td>1.0</td>
</tr>
<tr>
<td>24-39</td>
<td>1.5</td>
</tr>
<tr>
<td>40-55</td>
<td>1.8</td>
</tr>
<tr>
<td>56 and above</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Students who achieve the required cumulative grade point average for the hours attempted are considered to be in good standing. Those who fail to achieve the required average will be subject to the following action:

1. Students will be placed on academic probation after the first failure to earn the required grade point average. Freshmen admitted "on condition" enter on probation for continuation purposes and must earn a minimum 1.0 grade point average their first semester in attendance.
2. Academic suspension for one semester will follow if probation is not removed by raising the grade point average to required standards or if a 2.0 average for the semester of probation is not achieved. Freshmen admitted "on condition" will also be subject to suspension if they do not earn at least a 1.0 grade point average in their first semester of attendance. The complete summer session is considered a period of suspension. Suspended students who enroll in other colleges or in correspondence courses during their semester of suspension must earn at least a 2.0 average on all hours attempted during this period in order to be eligible for automatic readmission to UTC. Students not meeting the 2.0 requirement must apply for readmission through the Admissions/Readmissions Committee.
3. Students will be placed on probation when they return after the period of suspension. They must either achieve a 2.0 average in the semester following their return or raise their cumulative average to acceptable standards. If they fail to achieve either standard, they will be dismissed for an indefinite period and may not apply for consideration for readmission for one calendar year unless an appeal is filed with the Petitions Committee and acted upon favorably.
4. Any student permitted to enroll despite the fact that his or her cumulative average is below continuation standards will be on probation.

Students who are either suspended or dismissed have the right to appeal for reentry if they believe that extenuating circumstances were responsible for their poor academic achievement. Students who wish to appeal for reentry to the term that immediately follows their suspension or dismissal, including any term of the summer, must complete a petition form available in the Office of Records. In addition, dismissed students who wish to appeal for reentry before the end of a calendar year must also complete a petition form available in the Office of Records. Appeals for the term in which reentry is sought must be made by the third day of classes for the fall and spring semester and the second day of classes of any summer term.

Although readmission is not automatic, dismissed students who wish to appeal for reentry after the lapse of at least one calendar year must complete their appeal through the Office of Admissions on special forms available in that office. These appeals must be submitted before the first day of classes of the term in which reentry is sought.

Academic action is recorded on the academic record.

Academic Warning
Academic warning is a cautionary notice to the student that his or her semester grade point average is below 1.0 and that continued academic performance at this low level may lead to probation, suspension, or dismissal. Students may be placed on probation or may be suspended or dismissed without having received such a warning notice since these academic actions are closely linked to the overall grade point average. Unlike these latter actions, academic warnings do not appear on the student's academic record.

Academic Alert
Academic alert may be noted on the grade report for any student whose cumulative average is below 2.0 even though the student meets minimum requirements for continuation.

Undergraduate students who demonstrate that they may be at academic risk may be required to enroll in certain courses and participate in programs, including summer programs, designed to
enhance their academic skills. Credit accrued may not necessarily be applicable to a degree.

Academic Forgiveness
The University has adopted an academic forgiveness policy which permits students to apply for the removal of courses taken at any institution, including The University of Tennessee at Chattanooga. Although the courses will not be removed physically from the student’s academic record, they will no longer be calculated in the grade point average computation and will no longer apply toward the fulfillment of any University requirement. The policies for academic forgiveness are as follows:
1. Academic forgiveness is initiated by student request.
2. A student must be admitted to UTC and registered for classes at UTC in order to apply for academic forgiveness.
3. Academic forgiveness applies to any courses taken anywhere by the student eight years prior to the date of application for academic forgiveness.
   a. All work attempted more than eight calendar years before the date of application will be removed from consideration for credit for fulfillment of general education or major requirements or for grade point average or for any other purpose or requirement.
   b. The eight years will be figured from the semester preceding the date the application is received in the Records Office (summer is considered one semester).
   c. Academic forgiveness may not be used to remove from consideration college courses taken within eight years of the date of application for academic forgiveness.
4. Academic forgiveness may be granted only once and, when granted, is irrevocable.

Students seeking academic forgiveness should follow these procedures:
1. Secure the application for academic forgiveness in the Records Office (128 Hooper Hall); read the terms carefully; complete the form and sign it.
2. Return the completed and signed form to the Records Office. The application for academic forgiveness will be verified and courses will be checked for eligibility in accordance with the policies stated above. Students will be notified of the course credits that will be forfeited.
3. Sign the final agreement to forfeit eligible courses and return the form to the Records Office for processing.

Grading Policies

Grades

A represents superior performance in the course.
B represents commendable performance in the essentials of the course.
C represents acceptable performance in the essentials of the course.
D represents marginal performance below the acceptable standards of university work.
S is given for courses completed on a satisfactory/no credit basis. The hours are not computed in the grade point average. Not more than eight hours in Health and Physical Education 039, Varsity Sports, may be applied toward the 128 hours required for a degree.
NC represents failure to complete the requirements in satisfactory/no credit courses. The attempted 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. Any student called to active duty in the Armed Forces of the United States may, with the permission of the instructor, be given an indefinite incomplete. The incomplete may be made up at any time or a retroactive withdrawal may be granted (Students must contact the Director of Records for appropriate procedure.)
IP is used as an interim grade for departmental honors courses numbered 495r and indicates work in progress. It must be removed by the end of the next regular semester or the In Progress becomes an F. IP is also used as an interim grade for Physical Therapy 330, 331, 430, 431 and 490. Removal must occur by the end of the next regular semester or the IP becomes a No credit (NC). The IP will not be computed in the grade point average during the interim.
F indicates unqualified failure and the necessity for repeating the course to obtain credit.
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.
Quality Points
Quality points are computed for undergraduates for each credit hour as follows:

- A — 4
- B — 3
- C — 2
- D — 1
- F — 0
- S — not included
- NC — not included
- W — not included

Grade Point Average
Grade point averages are computed by dividing the total number of quality points earned by the total number of semester hours attempted, including hours of F. Hours are excluded in which grades of S, NC, I, and W have been earned. Institutional credit is not included in the calculation of grade point averages for graduation or for honors.

Grade point averages are not rounded, and no numerical value less than the stated grade point average will suffice. See section below for policy on replacement of grades.

Repeated Courses
1. Provided prerequisites are met, students may replace a total of five grades of C or lower. Any five grades in one or more subjects may be replaced, but the total number of replaced grades must not exceed five. Developmental studies courses (institutional credit) will be included in the grade replacement limit, but grades of S, NC, and W will not count in the allotted number of replacement grades.
2. The policy was effective with the fall of 1985. Unlimited replacement of grades earned at any college or university will be permitted before the fall of 1985. Beginning with the fall of 1985, a student will be limited to five additional replacement grades in courses taken at UTC or any other college or university.
3. All grades, except the five replaced grades, will be used in the grade point average computation.
4. In any repeated course, excluding "r" courses, a student forfeits the first earned hours, if any. Previous grades and credit do not count. Only the last grade counts.
5. Courses in which grades of A or B were earned cannot be repeated except for "r" courses. If an A or B is repeated, the repetition will be changed from credit to audit. An exception is made for registered nurses who are required by the School of Nursing to repeat specified science courses (Biology 208, 209, 210, Chemistry 121 and 122) that were originally completed 10 years or more prior to the students' admission to the nursing major at UTC.
6. For a transfer student a "course" is interpreted as any course listed separately in an individual term on the transcript regardless of the number of such courses needed to equate to a UTC course.
7. When a student is repeating more than one course in a term and is nearing the permissible limit of five replacement grades, the following order will determine replacements: 4 hour F's, 3 hour F's, 2 hour F's, 4 hour D's, 3 hour D's, 2 hour D's, 1 hour F's, 1 hour D's, 4 hour C's, 3 hour C's, 2 hour C's, 1 hour C's. In the case of a tie, a grade in a course within the student's major will be replaced first.
8. Students are responsible for indicating at the time of registration that they are repeating courses.

Withdrawals
After a semester or summer term is in session, a student is expected to attend all classes until or unless he or she notifies the Registration Office in writing of the student's intent to withdraw from the University or from one or more classes.

Students sometimes find it necessary because of illness, job responsibilities, or personal problems to discontinue their enrollment. If they must stop attending, they should be certain to withdraw officially. Failure to withdraw officially from any course will result in a grade of F.

Withdrawal deadlines for each semester or term are noted in the schedule of classes. Appropriate forms are available in the Registration Office.

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. Comparable periods apply to summer terms and specific dates are printed in the class schedules. Any request for an exception to the withdrawal deadline must be made to the director or the assistant director of registration.
UNDERGRADUATE DEGREES

The University offers undergraduate programs which lead to the degrees of Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, Bachelor of Science, Bachelor of Science in Engineering, Bachelor of Science in Nursing, Bachelor of Social Work, and Bachelor of Science in Physical Therapy. Majors offered with these degrees are as follows (specific requirements, including study in related areas, are outlined in the appropriate colleges and divisions):

American Studies (B.A.)
Concentrations: American History, American Literature, Philosophy and Religion, Political Science, Sociology-Anthropology

Applied Mathematics (B.S.)
Concentrations: Actuarial Science, Corporate Science, Computer Science, Systems Science

Art (B.A., B.F.A.)
B.F.A. Concentrations: Art Education (old program), Graphic Design, Painting & Drawing, Printmaking, Sculpture

Biography (B.S.)

Business Administration (B.S.)
Concentrations: Accounting, Finance, General Management, Industrial Management, Marketing, Office Management, Personnel Management

Chemistry (B.A. and B.S.)

Communication (B.A.)
Concentrations: Advertising, Broadcasting and Electronic Media, Broadcast Journalism, Journalism, Public Relations

Computer Science (B.S.)
Concentrations: Information Systems, Scientific Applications, Systems Architecture, Topical

Criminal Justice (B.S.)
Concentrations: Corrections, Crime Control, Juvenile Justice, Law and the Courts, Law Enforcement

Early Childhood and Elementary Education (B.S.) (old program)

Economics (B.A. and B.S.)

Elementary Education (B.S.) (old program)

Engineering (B.S.E.)
Concentrations: Electrical (Instrumentation and Control, Power), Industrial, Mechanical (Mechanics, Thermal Science), Chemical, Civil (Structural), Manufacturing (Systems and Management)

Engineering Management (B.S.)

English and American Language and Literature (B.A.)
Includes concentration in writing

Environmental Studies (B.S.)
Concentrations: Biology, Chemistry, Engineering Science, Geography, Geology, Mathematics, Physics, Sociology-Anthropology

French (B.A.)

Geology (B.S.)

Greek and Latin (B.A.)

History (B.A.)

Human Ecology (B.S.)

Humanities (B.A.)
Includes concentration in international studies

Human Services (B.S.)
Concentrations: Management, Allied Health Management

Latin (B.A.)

Mathematics (B.A.)

Medical Technology (B.S.)

Multidisciplinary School Learning (B.S.)
Concentrations: K-4, 5-8

Music (B.A.)
Music (B.M.)
Concentrations: Instrumental Performance, Sacred Music, Theory and Composition, Vocal Performance

Music Education (B.S.) (old program)
Concentrations: Instrumental, Vocal

Nursing (B.S.N.)

Philosophy and Religion (B.A.)
Concentrations: Philosophy, Religious Studies, Combined

Physics (B.S.)

Physical Therapy (B.S.P.T.)

Political Science (B.S.)
Concentrations: American studies, international studies, legal studies, and public administration

Psychology (B.A. and B.S.)

Secondary Education (B.S.) (old program)
Concentrations: business, English, foreign language (French, Latin, Spanish), health and physical education, mathematics, natural sciences, recreation specialist (non-teaching), social science, vocational home economics

Secondary English (B.S.)

Secondary Mathematics (B.S.)

Secondary Natural Sciences (B.S.)
Concentrations: biology, chemistry, earth & space science, physics

Secondary Social Sciences (B.S.)
Concentrations: economics, geography, history, political science

Social Work (B.S.W.)

Sociology and Anthropology (B.A. and B.S.)
Concentrations: General (B.A. only), Anthropology, Sociology, Urban Studies

Spanish (B.A.)

Special Education (B.S.) (old program)

Theatre and Speech (B.A.)

Minors are currently available in the following areas:
- anthropology
- art: painting or sculpture or printmaking or graphic design or history of art
- Asian studies
- athletics coaching
- biology
- black studies
- chemistry
- classics
- communication
- computer science
- criminal justice: legal environments
- English: literature or writing or International Studies or Legal Studies
- French
- geography
- geology
- Greek
- health physics
- history: American history or world history
- Latin
- mathematics
- music: performance or history or composition
- philosophy
- physics
- political science: American Government or International Studies or Legal Studies
- psychology
- recreation
- religious studies
- social work: social work services for the aged sociology
- Spanish
- theatre
- women's studies

Additional minors may be developed.

Usage Notes
The letter r following a course number means that, because of a difference in content from semester to semester, a class may be taken more than once for credit. Example: Art 199r.

A capital letter (A, B, C, D, F or G) prefixed to a course number means that that course can also be used to satisfy the general education requirements of the category indicated. Example: Mathematics F136.

Category E does not apply to the revised general education requirements (effective for new students entering fall 1982) and has been intentionally left out.
Degree Requirements

I. General Education Requirements

The general education requirements described below were approved by the faculty to become effective for new students who enter in the fall of 1982 and thereafter. Courses are continually being reviewed to meet the criteria for general education certification; the lists below, therefore, will be expanded throughout the year. Anyone who changes to the current catalog must meet all requirements.

The general education program is minimal. In setting forth such requirements the faculty is not implying that the requirement is all that the student needs in each category; nor is the faculty implying that any particular course offers a thorough knowledge of the discipline. Provided with an introduction and a point of departure, each student and his or her advisers determine the student's needs and direction for furtherance of his or her education. Courses meeting general education requirements are identified in the class schedule for each semester although all courses currently approved are listed below with each category. Generally, with the exception of laboratory courses in Category D which normally carry four credit hours, only courses earning a minimum of three semester hours of credit may fulfill a general education requirement. It is University policy that a student not schedule courses above his or her class level without permission of the department offering the course.

With the exception of majors in general areas such as humanities, students must select courses outside the major discipline in all general education categories. Students should complete the requirements for Category A (Written Communication) within the first 42 hours of academic credit attempted and Category F (Mathematics) at their earliest opportunity.

For transfer students, courses must be equated to approved general education courses in order to satisfy requirements. In Category D, 3.33 semester hours constitute a course for transfer students provided that the equivalency is an approved UTC general education course. *

Category A Written Communication in the English Language (6 hours)

Courses in Category A are intended to help students improve their power to understand, to read, and to write the English language; to help them clarify and articulate thought; and to help them treat language as an instrument and model for understanding and appreciation. The primary emphasis is on written composition. The following courses satisfy this requirement.

English 121, 122; University Honors 101, 102.

Category A (Written Communication) course requirements must be completed within the first 42 hours of academic credit attempted. Exemption from English 121 and completion of A122 satisfies Category A.

Category B Humanities and Fine Arts (9 hours; 3 hours from Humanities, 3 hours from Fine Arts, and 3 hours from either)

Courses in Category B offer students opportunities to develop an appreciation for achievements in art, music, theatre, and literature; to acquire a sense of historical perspective; and to gain some knowledge of perennial and changing issues in philosophy and religion. Under the old programs, majors in education may not use history in this category to satisfy state requirements for humanities. The following courses satisfy Category B requirements.

Humanities: Classics 310, 396; English 131, 133, 203, 207, 211; History 101, 102, 203, 204, 210, 310; Philosophy 106, 201, 221, 425; Political Science 316; Religion 103, 213, 221, 222, 236; University Honors 101, 102, 114;

Fine Arts: Art 111, 214, 301; Music 111, 317; Theatre and Speech 111, 115, 280; University Honors 103.

Category C Behavioral and Social Sciences (6 hours)

Courses in Category C offer students opportunities to explore the nature and complex functioning of human beings as individuals and in societies and cultures, including as integral to that exploration study of the principles, scope, and methods of the behavioral and social sciences. The following courses satisfy this requirement.

Anthropology 152, 211; Economics 101, 102; Geography 104; Human Ecology 340; Human Services 101; Political Science 101, 202, 302; Psychology 101, 241; Social Work 210; Sociology 125, 151, 215, 220, University Honors 115, 116.

Category D Physical and Natural Sciences (4 hours)

Courses in Category D offer students an understanding of the principles and scope of the physical and natural sciences. A fundamental part of these courses is the study of historical and contemporary ways in which these fields aid in understanding the natural and physical universe and also aid in the accomplishment of technological goals. Courses in this category must be laboratory courses. The following courses satisfy this requirement.

Anthropology 209; Astronomy 102; Biology 121; Chemistry 121, 125; Environmental Studies 150; General Science 111; Geology 111; Physics 103, 230.

Category F Mathematics (3 hours)

Courses approved for this category are intended to help students acquire some appreciation for mathematics as a creative activity of the human mind and some understanding of its usefulness in comprehending the physical universe. These objectives are supported by appropriate emphasis on computational skills and on the ability to work with mathematical symbols. The following courses satisfy this requirement.

Mathematics 115, 120, 136, 145, 150, 155, 210; Philosophy 212.

Category G Perspectives (3 hours)

Courses in this category offer a special opportunity for students to achieve an understanding that reaches beyond
their time and place by developing a sense of the importance and relevance of the past or of other societies and peoples through studies in: 1) non-Western cultures and civilizations; 2) major achievements or tragedies of Western civilization; 3) development, meaning, and impact of major scientific discoveries and theories; and 4) development, meaning, and impact of important economic, political, social, or technological ideas and policies. The following courses satisfy this requirement.

Anthropology 208, 333; Chemistry 311; Classics 110; Engineering 211; English 233, 257, 397; History 114, 208, 221, 371; Human Ecology 325; Human Services 300; Modern Languages 201; Music 397; Political Science 102, 244, 314, 346; Religion 211, 232; University Honors 117, 118, 120.

II. American History

By act of the General Assembly of the state of Tennessee, students who have not had one year of American history in high school must complete six semester hours of American history if they receive an undergraduate degree after July 1, 1978. Three hours of this requirement may be satisfied by Tennessee history.

To meet teacher licensure requirements under the old program, majors in elementary and early childhood education must complete six semester hours of American history in college regardless of their high school background.

III. Physical Education

Health and Physical Education 021, is required in the first year, plus one additional physical education activity course with the exception of varsity sports. Transfer students who have already successfully completed two one-semester hour courses in physical education activity, excluding varsity sports, will be considered as having met the requirements.

The University may grant the individual student a deferment or waiver after reviewing the necessary records submitted by the student. Waiver of this requirement may be granted in accordance with the following policies:

1. Students who are 25 years of age on or before the first day of classes of the semester under consideration.
2. Recommendation of a licensed physician. (Any student having medical restrictions yet desiring to take physical education may have a program designed exclusively for him or her by enrolling in Health and Physical Education 025. Guidance, participation, and evaluation are structured on an individual basis.)
3. Veterans with at least one year of military service.

Students receiving a deferment or waiver of this requirement will be responsible for meeting the credit hour requirement for graduation.

IV. The Freshman Seminar

Beginning Fall 1990, the Freshman Seminar is required of all students who enter UTC with fewer than 15 hours.

V. Foreign Language

For B.A. and B.M. degrees: completion of second college year of a sequence in one foreign language (e.g. French or German or Spanish 211 and 212 or French or German or Spanish 213 and 214 or Latin 201 and 202). Every student is advised to begin or to continue a foreign language study during the student's first year at the University or his or her first year as a candidate for the degree.

A student whose native language is not English and who is pursuing a B.A. or B.M. degree will fulfill the foreign language requirement by meeting the English requirements for foreign students: English 161, 121 and 122.

VI. Major

Requirements, including study in related areas, as specified by department.

VII. Minor

All candidates seeking the Bachelor of Arts degree in the College of Arts and Sciences will complete a minor within the College of Arts and Sciences. (Upon approval of the head of the major department, a student may select a minor outside of the College of Arts and Sciences. Appeals to the decision can be made to the dean.) Completion of a second major will satisfy this requirement. For students seeking the B.A. as a second degree, the previously completed major will satisfy the minor requirement. Previously approved minor courses of study will be honored for students changing majors.

Note: Communication Department students are not covered by this policy. See Communication Department requirements.

Any student may complete an established minor requiring a minimum of 18 semester hours with at least 8 hours at the 300/400 level. A grade point average of at least 2.0 must be achieved in courses taken for any minor. Higher standards than these minimum requirements may be approved for various departments. Specific requirements for minors are listed with the departmental offerings. No more than 6 hours of credit in the major department may be applied to the minor.

A student who is receiving one minor in a given department may receive a second minor from the same department provided that the second minor includes at least 12 hours of course work not included in the first minor. Philosophy, Religion, and the different foreign languages will be treated as separate “departments.”

VIII. Additional Requirements*

A. Electives to complete a minimum of 128 semester hours of credit.

Candidates for the Bachelor of Science in Engineering degree must complete 135-144 semester hours and co-op Engineering graduates will need 145-
154 semester hours, depending upon the concentration. Candidates for the Bachelor of Science in Physical Therapy degree must complete a minimum of 149 semester hours.

A minimum of 30 semester hours must be completed in residence on this campus, and the final 30 semester hours must be completed in residence courses at The University of Tennessee at Chattanooga. Students who have attended a junior or community college must complete the last 60 semester hours at a four-year college or university with the last 30 hours in residence at The University of Tennessee at Chattanooga. See Academic Residency Requirements for further information. Courses taken for graduate credit may not be applied toward an undergraduate degree.

** Application for a Degree**

The student is responsible for applying for a degree with the Office of Records not later than the beginning of his or her final year. A student who neglects to file application must wait until the next degree-conferring period to be awarded a degree. The graduation fee is $20 for undergraduates and $30 for graduate students and must be paid before the diploma will be released.

**Limitations for B.A. Degree**

Not more than 42 hours in any one department may be applied toward a Bachelor of Arts degree.

Not more than six hours in certain subjects (all office administration courses; all human ecology courses except 105; Engineering 102) may be applied toward a Bachelor of Arts degree.

**Second Bachelor’s Degree**

A student who has received one bachelor's degree may receive a second bachelor's degree provided that:

1. All specific requirements for both degrees are met.
2. The curriculum for the second degree includes at least 30 hours not applied to the first degree. These hours must consist of courses taken at UTC. A grade point average of at least 2.0 is required in these courses.
3. The 30 additional hours beyond the first degree shall include a minimum of 12 hours taken at UTC in the major department of the second bachelor's degree. A grade point average of at least 2.00 is required in these courses.

*See pages 17-20 for additional information on academic regulations.
** Approved by the UT Board of Trustees.
***See page 10 for additional information on nontraditional credit.

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**Degree Regulations**

**Academic Residency Requirements**

The final 30 semester hours must be completed in residence on this campus. Special arrangements to allow work taken at other University of Tennessee campuses to be counted as part of this requirement must be approved by the Petitions Committee. A minimum of 30 semester hours, however, must be earned at UTC, with a 2.0 average required on all attempted UTC hours.

Students who attend a junior or community college at any time in their academic career must complete the last 60 semester hours at a senior college with the last 30 of those 60 completed at The University of Tennessee at Chattanooga.

Before entering professional school, students in combined programs must complete at The University of Tennessee at Chattanooga the last 30 of the 98 semester hours of undergraduate study.

Normally, nontraditional credit will not apply toward the last 30 hours of residency; however, students who have completed 30 hours of traditional course work at UTC and have not yet attempted the last 30 hours may petition to apply a maximum of 15 hours of these types of credit toward the last 30 hours. ***
PREPROFESSIONAL PROGRAMS

Combined Programs
The University of Tennessee at Chattanooga offers both three- and four-year programs leading to the bachelor's degree for students preparing for study in certain professional areas. In the four-year program the degree is granted upon completion of 128 semester hours, which include both the general education requirements and a major. Under the combined programs a student may receive the bachelor's degree from The University of Tennessee at Chattanooga after completing three years or a minimum of 98 semester hours of undergraduate study plus the first year of professional school. The combined programs available include the bachelor's degree for students preparing for the study of medicine, dentistry, or medical technology.

Before entering professional school, the student in a combined program must have completed all but 30 of the total semester hours required for the bachelor's degree. The requirements in general education and in a major must be completed as a part of this program. While transfer work may be accepted, at least the last 30 semester hours of the three-year undergraduate program must be earned at The University of Tennessee at Chattanooga.

The student is responsible for having a transcript of the first year's work at a professional school sent to the University and for filing application for the degree. The graduation fee is $20.

Preparation for Health Professions
Students wishing to enter dentistry, medicine, or one of the other health fields such as cytotechnology, dental hygiene, medical technology, pharmacy, or veterinary medicine may complete their preprofessional training at The University of Tennessee at Chattanooga before going on to a professional school.

For the Bachelor of Science in Nursing program, which is offered by The University of Tennessee at Chattanooga, see page 111. This is not a combined program.

The various curricula available at The University of Tennessee at Chattanooga have been prepared with the cooperation of The University of Tennessee, Memphis, and include the specific requirements for admission to the respective colleges of the medical units there. The veterinary medicine program is offered at The University of Tennessee, Knoxville.

In general, these same programs will also meet the minimum admission requirements to other professional colleges offering degrees in these health sciences. Students wishing to prepare for professional institutions other than The University of Tennessee, Memphis, should consult the catalogs of these schools to determine the specific preparation required for admission. In all cases, final decision for admission rests with the college involved.

Dentistry
Although applicants may be admitted to the College of Dentistry of The University of Tennessee, Memphis, with a minimum of 90 semester hours in academic subjects, preference is given to those who have already completed a baccalaureate degree. Admissions requirements include 6 hours of English composition, 8 hours of general biology, 8 hours of general chemistry, 8 hours of organic chemistry, and 8 hours of general physics. Upper level biology courses (selected from cellular biology, comparative anatomy, embryology, genetics, histology, microbiology, and physiology) are recommended. A minimum grade point average of 2.5 in all required subjects attempted and in cumulative coursework is normally required for admission. For general electives, courses in calculus, foreign language, literature, biochemistry, social sciences, and behavioral sciences are suggested.

A student in a combined program who is working toward a bachelor's degree from The University of Tennessee at Chattanooga must complete at least 98 hours, including all general education requirements, as well as requirements for a specific major offered by UTC before entering the College of Dentistry. After the successful completion of the first year at the College of Dentistry the student will be awarded the bachelor's degree from UTC.

Medical Technology (B.S.)
A student working toward the B.S. degree with a major in medical technology from The University of Tennessee at Chattanooga must complete 98 semester hours with the program outlined on page 00, together with 30 hours from an approved school of medical technology. The last 30 of the 98 hours must be completed in resident courses at UTC.

Medicine
Although the majority of students now earn the bachelor's degree before admission to a college of medicine, some may be accepted with only three years of undergraduate work. Minimum requirements for admission to the College of Medicine of The University of Tennessee, Memphis, include 16 hours of chemistry (8 hours of general and analytical and 8 hours of organic), 8 hours of physics (mechanics, heat, light, sound, electricity, and magnetism), 8 hours of biology including zoology, and 6 hours of English composition.

Strongly recommended additional courses include advanced chemistry (analytical, physical, or biochemistry or chemical instrumentation), advanced biology (cellular biology, embryology, molecular biology, or genetics), calculus, behavioral and social sciences as well as computer science, languages, literature, philosophy, history, and etymology. A total of 90 semester hours is required for admission if a student is not working toward a bachelor's degree from The University of Tennessee at Chattanooga. A degree candidate must complete 98 hours, including all general education requirements as well as requirements for a specific major offered by UTC. The last 30 of the 98 hours must be completed in resident courses at UTC.

Preveterinary Medicine
Although no combined degree program is available in the veterinary medicine field, students at The University of Tennessee at Chattanooga may complete all of the courses required for admission to the College of Veterinary Medicine at The University of Tennessee, Knoxville. Because of the competition...
for admission to this field as well as to other health fields, students are advised to complete an undergraduate degree program in a major that will offer alternative career opportunities. The following preveterinary medicine courses are required.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 121, 122, Humanities and Social Sciences</td>
<td>18</td>
</tr>
<tr>
<td>(May include, for example, courses in English, literature, speech, music, art, philosophy, religion, language, history, economics, anthropology, political science, psychology, sociology and geography)</td>
<td></td>
</tr>
<tr>
<td>Math 135, 136 or 150, 160</td>
<td>6 - 8</td>
</tr>
<tr>
<td>Physics 103, 104</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 121, 122, Chemistry 351, 352</td>
<td>8</td>
</tr>
<tr>
<td>Biology 121, 122, Biology 326, 329, Biology 328</td>
<td>8, 6</td>
</tr>
<tr>
<td>(Biology 311 may be approved only if Biology 328 is not offered)</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>72 - 74</td>
</tr>
</tbody>
</table>

**Allied Health Fields**

Students planning to enter one of the other health fields can satisfy the minimum admission requirements for the respective units of The University of Tennessee, Memphis, by completing one of the following programs. These programs by themselves do not lead to a degree from The University of Tennessee at Chattanooga. Students wishing to do so, however, may count any of these courses completed at The University of Tennessee at Chattanooga as a part of the total hours required for a baccalaureate degree if they decide to continue here toward a major offered by UTC.

**Cytotechnology**

Three years of preparation (90 semester hours) are required for admission to this program at The University of Tennessee, Memphis. The program of study must include the following courses or their equivalents:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 121, 122 and 2 additional English courses</td>
<td>12</td>
</tr>
<tr>
<td>Biology 121, 122</td>
<td>8</td>
</tr>
<tr>
<td>Biology 311</td>
<td>8</td>
</tr>
<tr>
<td>Biology 326, 336</td>
<td>8</td>
</tr>
<tr>
<td>Advanced science (analytical chemistry, organic chemistry, embryology, comparative anatomy, genetics, and physiology)</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics (preferably 135), Social science</td>
<td>12</td>
</tr>
<tr>
<td>Electives*</td>
<td>27</td>
</tr>
<tr>
<td>TOTAL</td>
<td>90</td>
</tr>
</tbody>
</table>

*Courses in human anatomy and physiology, physics, English, speech, mathematics, organic chemistry, and social sciences strongly recommended. A year of American history in either high school or college is required for the degree program at UT, Memphis.

**Predental Hygiene**

Students may be admitted to the Dental Hygiene program of The University of Tennessee, Memphis, upon completion of 64 semester hours including the following courses or their equivalents:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 121, 122</td>
<td>8</td>
</tr>
<tr>
<td>Biology 121, 122, Biology 191, 208, 209</td>
<td>8</td>
</tr>
<tr>
<td>Biology 210 or 311</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry 121, 122, Chemistry 311, 312</td>
<td>8</td>
</tr>
<tr>
<td>English 121, 122 and one additional English course</td>
<td>9</td>
</tr>
<tr>
<td>Psychology 101 and one additional psychology course</td>
<td>6</td>
</tr>
<tr>
<td>Sociology 151 and one additional sociology course</td>
<td>6</td>
</tr>
<tr>
<td>Electives*</td>
<td>12</td>
</tr>
<tr>
<td>TOTAL</td>
<td>64</td>
</tr>
</tbody>
</table>

*Courses in mathematics and social sciences strongly recommended. A year of American history in either high school or college is required for the degree program at UT, Memphis.
HONORS AND HONOR SOCIETIES

General University Honors
Effective with the graduation class of December 1987, eligibility for general university honors was changed from past standards.

An undergraduate student will be graduated cum laude when the student's cumulative grade point average as well as UTC average at the end of the final semester is 3.5. With an average of 3.75 both cumulative and at UTC, the student will be graduated magna cum laude. The student with the highest average will be graduated summa cum laude if his or her average is at least 3.9. More than one summa graduate will be recognized in the event of a tie. Honors will be inscribed on the diplomas. These standards apply to all undergraduate degree candidates regardless of the catalog under which they entered.

William E. Brock Scholars Program
Brock Scholars are those students who have been awarded membership in one of the University's most prestigious honors programs. This program attempts to create an atmosphere, both academic and social, in which its members may develop their capacities for intellectual, moral, and social leadership. The program's goal is a community of scholars, at various levels, benefiting from each other's work and providing the University and the community with ideas and new ways to excellence.

In order to achieve this goal, the program provides scholars with a general education curriculum tailored to their talents and needs (see page 106); an integrated program of cocurricular activities; an advisement system that enables each scholar to derive the greatest benefits from the University's resources; membership in a highly visible and respected group; and a four-year financial scholarship award. In addition, Brock Scholars are recognized as such at graduation and at other official University functions.

Each year the program admits to membership some 20 freshman students. Applicants are expected to have demonstrated outstanding achievement and promise in high school. Continuance is reviewed each year and is contingent upon the scholar's academic performance, upon the recommendation of the director, and upon the approval of the University's Scholarship Board.

The Brock Scholars Program is open to adult students with freshman status who otherwise qualify. UTC faculty and staff are encouraged to recommend candidates. Interested adult students should inquire at the Honors Office.

For further information or application form, write Dr. Robert C. Fulton III, Director, University Honors Program, The University of Tennessee at Chattanooga, 615 McCallie Avenue, Chattanooga, Tennessee 37403.

Departmental Honors
The Departmental Honors Program allows exceptional students to receive special recognition for their academic achievements. Departmental honors is bestowed upon students who have maintained high academic standards in their course work, have completed an acceptable honors thesis, and have achieved an honors pass on an oral examination. Graduation with departmental honors is recorded on the academic record and on the diploma.

The departmental honors thesis allows each honors candidate to deepen knowledge and increase skills in a special discipline. Original literary analysis, scientific experimentation, artistic expression, or other demonstration of superior proficiency or creativity are normally acceptable forms of expression for the thesis. The thesis will be defended by means of an oral examination administered by the major department. The oral defense will be on the thesis and related underlying issues of the discipline.

The chair of the departmental honors committee will appoint for each candidate for honors a member of the departmental honors committee to act as liaison. This member will be kept informed of progress by student and department, will see a copy of the rough draft of the honors thesis, and participate in the oral examination concerning the thesis.

Interested students shall consult with their advisers or departmental heads prior to the beginning of the senior year. The honors program is a two-semester program and should require substantially more work than would be required for the four hours granted were they in regular courses or other independent study courses. Formal application to departmental honors candidacy must be made during the third semester before graduation, on the first school day in March for students working in summer and fall or fall and spring terms and on the first school day in November for students working in spring and summer or spring and fall.

Forms for admission to departmental honors candidacy can be obtained from the director of the honors program, 202 Guerry Hall.

A student is not formally accepted in departmental honors until he or she receives notice in writing that the faculty council has approved the student's application.

Each candidate must have a copy of current guidelines and is responsible for following the guidelines. Copies can be obtained from the director of the honors program.

A progress report to the adviser and the chair of the departmental honors committee is due the Monday one week before the last week of classes in the first term of the two terms' work. The progress report must be signed by the adviser before it is sent to the departmental honors committee.

Departmental honors is normally work done by an individual. Joint interdisciplinary projects may be applied for when the work clearly involves students in different disciplines and when certain monitoring procedures are observed. Each such case will be decided on its merits by the departmental honors committee.

Admission to the program requires an overall grade point average of 3.2 and a grade point average of 3.5 in the major field. Students who do not meet the minimum grade point average requirements may be admitted conditionally to the departmental honors program, but will be withdrawn from the program if they do not meet the minimum requirements by the end of the first term in which honors is taken. Each departmental honors candidate must complete four full semesters (or a minimum of 48
semester hours of course work) at UTC prior to graduation. Honors work will receive four semester hours of credit in the appropriate courses, numbered 495r, the distribution of hours in the two terms to be one of the following options only: 1-3, 2-2, 3-1. A grade may be given for the first term or postponed by giving an IP (In Progress), which grade is to be replaced by another grade by the end of the following regular semester. The credit hours so earned will count for graduation whether or not honors is conferred. Credit earned in departmental honors courses will not be calculated as part of the 42-hour maximum in the major.

Any student who has a grade point average of 3.75 in his or her major and 3.5 overall through the next-to-last semester may become a candidate for highest honors. Standards for the thesis and departmental examination for highest honors appropriately reflect the nature of the superlative designation.

**Academic Recognition and Honor Societies**

The University recognizes scholarly achievement in a number of ways. The dean's list includes each semester the names of all students who achieve an average for the semester of at least 3.2 with a registration of 6 graded hours or more.

Academic achievement, either in general or in specific fields, is recognized by a number of organizations:

*Alpha,* the scholastic honor society of The University of Tennessee at Chattanooga, elects to membership seniors who have maintained a very high scholastic average. Election is by vote of the faculty members of Alpha.

*Alpha Lambda Delta,* national honor society for women and men, elects to membership freshmen who have a 3.5 average on at least 12 graded hours in the first semester or a cumulative average of 3.5 at the end of the freshman year.

*Blue Key* is a national recognition society for men and women.

*Golden Key,* is a national honor society for all juniors and seniors, either full or part-time, who have been at UTC for one year and who have maintained at least a 3.3 grade point average.

*Mortar Board,* a national honor society for senior women and men, elects to membership those who at the end of their junior year have a minimum grade point average of 3.0 and who have demonstrated outstanding ability in leadership, scholarship, and service to the University.

*Phi Eta Sigma,* national honor society for men and women, elects to membership freshmen who have a 3.5 average on at least 12 graded hours in the first semester or a cumulative average of 3.5 at the end of the freshman year.

Honor societies in specific areas include:

*Alpha MM Alpha* (marketing)  
*Beta Beta Beta* (biology)  
*Beta Gamma Sigma* (business administration)  
*Beta Sigma Tau* (engineering)  
*Delta Omicron* (music)  
*Delta Tau Omega* (geology)  
*Gamma Sigma Epsilon* (chemistry)  
*Kappa Delta Pi* (education)  
*Kappa Omicron Phi* (home economics)  
*Lambda Alpha Epsilon* (criminal justice)  
*Lambda Iota Tau* (literature)  
*Omicron Delta Epsilon* (economics)  
*Phi Alpha Theta* (history)  
*Pi Delta Phi* (French)  
*Pi Gamma Mu* (social sciences)  
*Pi MM Epsilon* (mathematics)  
*Psi Chi* (psychology)  
*Scabbard and Blade* (military science)  
*Sigma Delta Pi* (Spanish)  
*Sigma Iota Epsilon* (business management)  
*Sigma Pi Sigma* (physics)  
*Sigma Theta Tau* (nursing)  
*Sigma Xi* (sciences)  
*Upsilon Pi Epsilon* (computer science)
The Graduate Division is the administrative unit which coordinates and supervises activities relating to the graduate degrees offered by The University of Tennessee at Chattanooga.

Graduate Degree Programs Offered

M.A. English: Literary Study or Professional Writing
M.B.A. Business Administration, Accounting, Economics, Finance, Marketing, Operations/Production, or Management
M.M. Music: Education or Performance
M.P.A. Public Administration
M.S. Computer Science; Engineering: Chemical Sciences, Civil, Electrical, Industrial, or Mechanical; Engineering Management; Psychology: Industrial/Organization, School, or Research
M.S.C.J. Criminal Justice: Correctional Psychology, Education, or System Application
M.S.N. Nursing: Adult Health, Administration, or Education

Anyone holding the baccalaureate or higher degree who wishes to take courses must make formal application for admission through the Graduate Office. Those who do not qualify for graduate admission or who elect to pursue a second bachelor's degree may be admitted as post-baccalaureate students.

For more information concerning a specific degree program, please refer to the appropriate department and the UTC graduate catalog.

For application materials, write
Director of Graduate Studies
114 Race Hall
615 McCallie Avenue
Chattanooga, Tennessee 37403-2598

UTC Seniors
A senior who is 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 the applicant has an overall grade point average of 3.0 (B) or higher and is recommended by the head of his or her major department. Subject to the approval of the director of graduate studies, a student may earn up to six semester hours graduate credit prior to completing the bachelor's degree. Such approval must be obtained each semester by completing the special application form which is available in the Graduate Office. The approved application must be submitted to the Registration Office at the time of registration. Courses taken for graduate credit may not be applied toward an undergraduate degree.

Teacher Certification
Students seeking initial certification, endorsement or renewal of certification may be classified as post-baccalaureate students.

Post-baccalaureate Admission
Post-baccalaureate is an undergraduate admission classification which indicates that the applicant has a baccalaureate degree. A student who does not qualify for graduate admission because of an inadequate grade point average may use post-baccalaureate status to demonstrate that he or she can do acceptable work. The attainment of a 3.5 average on nine to twelve hours of 400-level courses recommended by the proposed major department may be accepted as evidence for admission to graduate study, provided all other requirements are met. Upon earning the required grade point average, the student must reapply for admission to graduate study and complete the admission procedures as specified for the proposed degree program.

It should be noted that admission as a post-baccalaureate student allows the student to demonstrate ability but does not guarantee admission to a degree program. In addition, courses completed under post-baccalaureate admission may not count toward a graduate degree.

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.
Student Services

STUDENT SERVICES

Bookstore
The Bookstore is located in Guerry Center and supplies textbooks, both new and used, for all courses. A buy back is operated daily at the bookstore. Students may sell their books for cash. Prices vary depending upon supply and demand, and fluctuate at different times of the year. MasterCard, Visa and Personal Checks are accepted for purchases with student ID.

Check Cashing Service
The Bookstore provides a Check Cashing Service for Students, Staff, and faculty. A validated UTC I.D. or a current fee paid receipt must be presented along with checks. Personal checks are cashed up to $50 and UT Payroll checks are cashed up to $150. Only one check per person per day may be cashed. Hours are 1/2 hours after store opening to 1/2 hours before store closes.

Counseling and Career Planning
The services of the Counseling and Career Planning Center are available to students, alumni, faculty, and staff. Professionally trained counselors provide assistance in resolving personal, vocational, developmental, transitional, emotional concerns, and psychological assessment. The staff also assists the center clientele to explore career and curricular alternatives, as well as maintains resources on careers graduate opportunities, and other growth and development issues. The center sponsors and cosponsors developmental and educational programs on a variety of issues such as values clarification, career and life planning, interpersonal communication, stress management, and other topics. All services are confidential. The services are available without charge, with the exception of testing.

Food Service Facilities
The University-operated Food Services provide meals and snacks in the University Center cafeteria and grill. Food Service credit cards are available; otherwise, all purchases are cash.

Handicapped Student Services
On June 3, 1977, Section 504 of the Rehabilitation Act of 1973 became effective. Specifically, as it pertains to the academic and program aspects of colleges and universities, Section 504 prohibits discrimination against handicapped individuals. It mandates that adjustments and accommodations be made in programs and activities in order to provide qualified handicapped persons with opportunities equal to those enjoyed by the qualified non-handicapped.

The director of affirmative action has the responsibility of assuring University compliance with Section 504. The University is working toward better integration of services for handicapped students within the regular student service system. Assistant Deans Betty J. Tucker and John Delaney assist in these matters. Handicapped students desiring assistance should contact Tucker or Delaney in Student Affairs, 215 University Center, (615) 755-4761.

Health Services
Emergency first aid service under the supervision of a registered nurse is available to all members of the University community during regular business hours. For those on the voluntary University Health Plan (which includes all dormitory residents) a physician makes on-campus sick calls three days a week. In addition, the voluntary health plan covers the cost of the physician's services for the first visit only in those emergency cases referred to the medical center, which is adjacent to the campus. The student is responsible for other expenses, such as surgery, laboratory, and medicine.

Additional services or hospitalization are not covered by the voluntary University Health Plan. The University recommends that the student obtain separate hospitalization and medical insurance. A voluntary student insurance plan is available through the University that covers a schedule of expenses for surgery and
hospitalization in case of accident or illness. The insurance plan should be requested at the time of registration. Information is available at the insurance desk as the student pays fees, and also in the Student Health or Student Affairs Offices. This plan is particularly useful for parents whose family policy does not cover the dependent child after the 19th birthday.

**Housing**

Applications for housing may be obtained from the Housing Office. Housing contracts are a commitment for the academic year, August to May, or for shorter periods as required by midyear registration or certain special academic programs, if arranged for in advance. Only if a student withdraws from the University is a housing contract cancelled, and then in accordance with policies stated in the contract.

The University offers a program of differentiated housing which allows students the option of living in facilities with different types of programming and supervision. Further information concerning the details of these plans is available from the Housing Office and is sent with the housing application.

**ID Cards**

The University provides each student with an official University I.D. card. This card is used to gain admission to athletic events, to check out books from the library, to obtain special rates and privileges at many University functions, and to indicate the individual’s right to use University facilities.

ID cards for new students are made at registration and distributed free of charge. Replacement cards cost $2. Lost ID cards should be reported to the Student Affairs Office immediately. Validation stickers are issued each semester and are placed on the back of the ID card. One card is intended to last throughout a student’s entire stay at the University.

**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.

**Student Handbooks**

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 Tickets**

A validated student ID card with a picture provides admission to the regular season home football, basketball, and wrestling events. These seats are in the student section and are not reserved. Students take these seats on a first-come basis and the number of seats in the student section is limited to a specific figure.

**Student guest tickets:** A student may purchase a guest ticket at a discount price to each home football and basketball game. These tickets may be purchased at the University Center Ticket Office. The guest must sit in the student section.

**Spouse tickets:** A student may purchase a spouse or guest ID with a picture for $15 per semester. These may be purchased at the University Center Ticket Office.

**GENERAL REGULATIONS**

**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.

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

**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 and the Honor Court and its procedures are detailed in the Student Handbook.

**Records**

The Office of Records maintains an academic record on any student who has ever attended UTC. This record currently includes the student’s name, social security number, address, birthdate, sex, high school and high school graduation date, 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.

**Transcripts**

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 (effective July 1, 1991) is charged for each subsequent transcript. Requests should be made to the Office of Records in advance of the date on which the transcripts are needed.

Transcripts are not released for students who have an indebtedness of any type to the University or who owe any fines.
American Studies
See Interdisciplinary Studies.

Anthropology
See Sociology and Anthropology.

Art

Associate Professor White, Head

The Art Department reserves the right to keep one example of the work of each student in each course. Sophomore year portfolio review is required.

Art (B.F.A.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses other than art: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category F: 1 approved mathematics course (3 hours)
Category G: 1 approved perspectives course (3 hours)

Major
81 hours art including 101, 102, 105, 106, 203, 205, 207, 260 or 281, 233 or 244;
12 hours art history including 214, 215 and 6 hours from 314, 315, 414, 431, 432.

Student must complete one area of concentration as follows:
Graphic Design: 260 or 281 (whichever course not taken above)
Sculpture: 233 or 244 (whichever course not taken above), 235, 335, 344, 337, 338, 437, 438, 439, 440.

Portfolio review, Sophomore year.
Remaining hours in art to total 81.
2.5 GPA minimum in art courses
Participation in senior art exhibition

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical courses of study in art (B.F.A.)

Art (B.F.A.): graphic design

First Semester
FRESHMAN
University Studies 101 3
Art 101 Visual Fundamentals I 3
Art 105 Drawing I 3
Art 106 Drawing II 3
General Education 3
Physical Education 021 1
Total 16

SOPHOMORE
Apply for Portfolio Review
Art 281 Photography 3
Art 214 Art History 3
Art 233 Sculpture I 3
Art 244 Ceramics 3
Art 260 Graphic Design I 3
General Education 3
Total 15

Second Semester
General Education 3
Art 203 Printmaking I 3
Art 215 Art History 3
Art 261 Graphic Design II 3
Portfolio Review 3
Elective 3
Total 15

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity
JUNIOR

General Education 3
Art 205 Drawing III 3
Art 380 Photography for Graphic Design 3
Art History 3
Art 207 Painting I 3

Total 5

Apply for Senior Exhibition

Art 265 Computer 3
Art 461 Concentration Topic in Graphic Design 3
Art 361 Graphic Design 3
Art Elective 3
Senior Exhibition 3

Total 18

SENIOR

Apply for Senior Exhibition

General Education 3

Art 401 Internship 3
Art 460 Graphic Design IV 3
Art 461 Concentration Topic in Graphic Design 3
Art Elective 3
Elective 2

Total 17

TOTAL HOURS 128

Art (B.F.A.)s painting and drawing

First Semester FRESHMAN

University Studies 101 3
General Education 3
Art 102 Visual Fundamental I 3
Art 105 Drawing I 3
General Education 3
Physical Education 021 1

Total 16

Second Semester

Art 260 Graphic Design I or Art 281 Photography 3
Art 305 Printmaking 3
Art History 3
General Education 3

Total 18

TOTAL HOURS 128

Art (B.F.A.): printmaking

First Semester FRESHMAN

University Studies 101 3
Genetal Education 3
Art 101 Visual Fundamentals I 3
Art 105 Drawing I 3
General Education 3
Physical Education 021 1

Total 16

Second Semester

General Education 3
Art 208 Painting II 3
Art 260 Graphic Design I or Art 281 Photography 3
Art 215 Art History 3
Art 203 Printmaking 3
Portfolio Review 3

Total 16

TOTAL HOURS 128

SOPHOMORE

Apply for Portfolio Review

General Education 3

Art 205 Drawing III 3
Art 233 Sculpture I or Art 244 Ceramics 3
Art 214 Art History 3
Art 207 Painting I 3

Total 15

JUNIOR

General Education 3

Art 205 Drawing III 3
Art 207 Painting I 3
Art 233 Sculpture I or Art 244 Ceramics 3
Art 214 Art History 3

Total 16

TOTAL HOURS 128

Art (B.F.A.): sculpture

First Semester FRESHMAN

University Studies 101 3
General Education 3
Art 101 Visual Fundamental I 3
Art 105 Drawing I 3
General Education 3
Physical Education 021 1

Total 16

Second Semester

General Education 3
Art 208 Painting II 3
Art 260 Graphic Design I or Art 281 Photography 3
Art 215 Art History 3
Art 203 Printmaking 3
Portfolio Review 3

Total 16

TOTAL HOURS 128

SOPHOMORE

Apply for Portfolio Review

General Education 3

Art 205 Drawing III 3
Art 244 Ceramics I 3
Art 214 Art History 3
Art 260 Design I or Art 281 Photography 3

Total 18

JUNIOR

General Education 3

Art 303 Watercolor 3
Art 307 Painting III 3
Art History 3
General Education 3
Art Elective 3

Total 18

TOTAL HOURS 128

First Semester

Art 205 Drawing V 3
Art 450r Concentration Topic in Printmaking 3
Art Elective 3
Elective 3

Total 15

Second Semester

Art 451 Senior Studio in Printmaking 3
Art Elective 3
Elective 2
Senior Art Exhibit 3

Total 14

TOTAL HOURS 128

TOTAL HOURS 128

TOTAL HOURS 128

TOTAL HOURS 128
Typical course in Art (B.F.A.): art education

First Semester
- General Education Category A: 3
- Mathematics F120: 3
- Physical Education 021: 1
- General Education Category D: 4
- Advanced Drawing: 3
- Physical Education Activity: 1
- Total: 16

Second Semester
- General Education Category A: 3
- General Education Category B: 3
- General Education Category C: 3
- Art 208 Painting II: 3
- Total: 18

JUNIOR
- Apply for Student Teaching
- General Education Category G: 3
- ED Curr. & Instr. 205: 1
- Art 205 or 206: 3
- ED Curr. & Instr. 431: 2
- Total: 18

SENIOR
- General Education Category B: 3
- General Education Category C: 3
- Senior Exhibition: 3
- Total: 17

JUNIOR
- Apply for Senior Exhibition
- ED Curr. & Instr. 201: 3
- Art 433 Mat. & Proced. in Art Education: 3
- Art History: 3
- ED Curr. & Instr. 438: 2
- Total: 20

SENIOR
- General Education Category B: 3
- ED Curr. & Instr. 432: 2
- ED Curr. & Instr. 437: 2
- Senior Art Show: 9
- Total: 20

TOTAL HOURS 128

Art (B.F.A.): Art Education

General Education (see pages 22-23 for list of approved courses)
- Category A: 2 approved courses in written communication in the English language (6 hours)
- Category B: 3 approved courses other than art: one from humanities, one from fine arts, and one from either (3 hours each), plus courses in humanities/fine arts to total 12 hours in three fields other than history and art
- Category C: 2 approved behavioral or social science courses (6 hours) plus one course to total 9 hours behavioral or social science in two fields other than Education; for certification purposes, 3 of the hours may be in history
- Category D: 2 natural science courses to total 8 hours in natural science (one course must be an approved laboratory science)
- Category F: Mathematics F120
- Category G: 1 approved perspectives course (3 hours)

1 additional course outside teaching field from communication, humanities, mathematics, natural or behavioral sciences

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

NOTE: Current requirements for licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for licensure/endorsement areas approved by the Tennessee Board of Education. The Art program is still undergoing curriculum revision. Questions about the new program should be directed to the Art Department or School of Education.

51 hours art including 101, 103, 105, 106, 205 or 206; 207, 208, 227, 244, 305, 323, 324, 333, 490r; 9 hours from 214, 215, 414.

Participation in senior art exhibition

33 hours from the School of Education including EDCH 200, 201 204, 205, 321, 431, 433, 436c, 437, 438r; Special Education 333 or 332.

For graduation: 2.0 average in art and 2.0 average in School of Education courses.
For certification: 2.5 average overall, 2.5 average in teaching field, and 2.5 average in education courses with no grade less than C in the latter

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

Art (B.A.)

General Education (see pages 22-23 for list of approved courses)
- Category A: 2 approved courses in written communication in the English language (6 hours)
- Category B: 3 approved courses other than art: one from humanities, one from fine arts, and one from either (3 hours each)
- Category C: 2 approved behavioral or social science courses (6 hours)
- Category D: 1 approved physical or natural science course with laboratory (4 hours)
- Category F: 1 approved mathematics course (3 hours)
- Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Foreign language through second college year

Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major

42 hours art including 101, 102, 105, 106, 203, 207, 233; 214, 215, and 3 additional hours from 314, 315, 414, 431, 432; 3 hours from 205, 208, 260, 281, 303r, 305, 306; 3 hours from 235, 244; 6 additional hours in studio electives from 300/400 level.
Participation in senior art exhibition  
2.0 average in all art courses  
Minimum of 30 hours of 300 and 400 level courses  
Electives to total 128 hours

ART MINORS

Graphic Design (24 hours):
Art 101, 105, 260, 261, 281; 9 hours from 361, 380, 460, 461r. 
Minimum 2.0 average in the minor.

History of Art (18 hours):
Art 214, 215; 6 hours from 314, 315, 414, 431, 432; 6 hours (3 of which must be at the 300/400 level) from American Studies 200; Classics 396; English 203, 204; Philosophy 336; History (any 300/400 level course). 
Minimum 2.0 average in the minor.

Painting (24 hours):
Art 101, 105, 106, 207; remaining 9 hours in painting at the 300/400 level. 
Minimum 2.0 average in the minor.

Printmaking (24 hours):
Art 101, 105, 106, 203, 207; remaining 9 hours in printmaking at the 300/400 level. 
Minimum 2.0 average in the minor.

Sculpture (24 hours):
Art 102 (101 waived for the sculpture minor), 105, 233, 235, 244; remaining 9 hours in the three-dimensional area at the 300/400 level. 
Minimum 2.0 average in the minor.

ART COURSES

101 Visual Fundamentals I: Color and Form in Two Dimensions (3) 
Color concepts and the visual elements, principles, and factors of organization as they apply to two dimensional design. Fall semester. Studio hours 6. Corequisite: 105 for the art major or approval of department head.

102 Visual Fundamentals II: Form in Three Dimensions (3) 
Studio experience with visual and tactile components of three dimensional design. Basic problems involving relief, mass, freestanding form, and principles and factors of 3-D organization. Spring semester. Studio hours 6. Prerequisite: 101; Corequisite: 106 for the art major or approval of department head.

103 Introduction to Art Education (3) 
Examination of a broad range of historical and philosophical issues in art education. Designed to help the student discover values in art education. Lectures, readings, reports, and discussion. On demand.

105 Drawing I (3) 
Introduction to drawing and pictorial composition using basic drawing media in black and white. Primary emphasis on line, form, value, texture, space, shape, and one-point and multiple-point perspective. Fall semester. Studio hours 6. Corequisite: 101 for the art major or approval of department head.

106 Drawing II (3) 
Continuing work in drawing with the introduction of color media in pictorial composition. Primary emphasis on analytical skills, cognitive development, development of critical skills, and the exploration of alternative techniques and media. Spring semester. Studio hours 6. Corequisite: 102 for the art major or approval of the department head.

111 Introduction to Art (3) 
Consideration of the formal elements, design principles, and technical factors of significance in the production of works of visual art. Examination of selected works representative of a broad range of functions, forms, styles, and artistic intentions. Comparisons between works of different periods. Designed to heighten perception, appreciation, and enjoyment of the visual arts. Every semester.

199r Special Projects (1-4) 
Every semester.
261 Graphic Design II - Typography (3)
A theoretical and applied course providing an overview of the history of typography, addressing the creative and innovative use of type selection, specification, and copyfitting. The course focuses on the alphabet and hand-lettered characters as means of visual communication. Spring semester. Prerequisite Art 260. Studio hours 6.

265 Computer Application for Graphic Design 1 (3)
Understanding the basics of image generation with the computer as a tool for Graphic Design. Introduction to computer page description software. Spring semester. Prerequisite or corequisite Art 261. Studio hours 6.

281 Photography (3)
Introduction to black and white photography as an art form with emphasis on composition. Basic camera operation, film processing, and darkroom printing. Adjusting lens camera required. Every semester. Prerequisites: Art 101 for Art and Communication majors. Credit not allowed in both Art 281 and 251.

301 Art Structure (3)
Slides, demonstrations, and studio experience in drawing, painting, sculpture, and other visual arts. Exposure to selected works of art through exploration of techniques and approaches designed to increase the student's understanding of art, particularly of contemporary styles. Every semester. For the non-art major.

303r Watercolor (3)
Basic techniques in transparent watercolor with emphasis on materials, process, and composition. On demand. Prerequisite: Art 102, 106, 207. Studio hours 6.

305 Printmaking: Intaglio and Relief (3)
Work in single and multicolor intaglio, including line etching, and aquatint. Block and woodcut methods. Fall semester. Studio hours 6. Prerequisites: 101, 105, 106, 203, or approval of department head.

306 Printmaking: Lithography and Serigraphy (3)
Work in single and multicolor lithography, considering the various techniques of stone and metal plate printing. Work in single and multi-color serigraphy, including various stencil methods of silk-screen printing. Spring semester. Studio hours 6. Prerequisite: 203, 207 or approval of department head.

307, 308 Painting III, IV (3, 3)
Figure, still life, and landscape composition in oil, watercolor, acrylic, and mixed media. Problems in analytical study and creative interpretation. On demand. Studio hours 6. Prerequisites: 208. Courses are sequential. 307 pre-requisite to 308.

314 The History of Modern Architecture (3)
American architecture from the late 18th century to the present. Begins with the French "Visionary" architects, proceeds to the British Arts and Crafts Movement, German Expressionism, American Period revivals, and International Style. Also covers Art Nouveau, Art Deco, Frank Lloyd Wright and the Prairie School, progressive architecture in Holland, Italy, and Japan, and advent of Post Modernism. Emphasis on the relationship between architectural and socio-political scenes of the modern world. Fall semester alternate years.

315 History of Modern Painting and Sculpture (3)
A survey of the last 100 years of western painting and sculpture from Post-Impression to Post-Modernism. On demand. Prerequisite: 215.

323, 324 Materials and Procedures in Art Education (3, 3)
Experiential activities designed to acquaint the prospective teacher of art with a representative range of appropriate art materials and the procedures which promote their effective use in grades one through twelve. First semester: elementary, grades one through six. Second semester: secondary, grades seven through twelve. Two-dimensional and three-dimensional studio projects, lectures, and discussion included in both courses. 323 spring/324 fall semester alternate years. Prerequisite to student teaching.

333 Three-Dimensional Design (3)
Basic problems involving mass and space relationships. Experimentation with foundry techniques. Lectures on the historical development of sculpture. On demand. Prerequisites: 101, 105, 106.

335 Metals II (3)
Advanced design in metals and jewelry fabrication. Introduction to basic methods of casting. On demand. Prerequisite: Art 235. Studio hours 6.

337, 338 Three Dimensional Studio I, II (3, 3)
Development and exploration of contemporary concepts and media in the 3-D studio areas. On demand, courses are sequential. Prerequisite: Art 233, 235, 244.

344 Ceramics II (3)
Development of student's individual style through use of design elements and technical skill. Kiln use and general laboratory techniques. On demand. Prerequisite: 244. Studio hours 6.

361 Graphic Design III - Design Methodology (3)

380 Photography for Graphic Design (3)
Photography as a medium for design and presentation. Application of reproduction methods for the graphic art field using photographic tools as a form of a design aesthetic. Fall semester. Prerequisite: Art 281, 260. Studio hours 6.

401 Visual Arts Internship (3)
Practical experience in a professional environment to provide individuals with the opportunity to be supervised in art-related agencies. These would include, but not be limited to, advertising and media industries, art museum operation, gallery management, etc. Every semester. Prerequisite: declared major, 75 accumulated credit hours minimum, 21 hours in art, approval of department head during the preceding semester.

405, 406 Drawing V, VI (3, 3)
Individual problems in the application of drawing techniques and styles. Continued exploration of life drawing from the human figure. On demand, courses are sequential. Prerequisite: Art 206. Studio hours 6.

407, 408 Painting V, VI (3, 3)
Development of individual style in painting through selected media, conceptual intent, and compositional approaches. On demand, courses are sequential. Prerequisite: Art 308. Studio hours 6.

409 Senior Studio in Painting and/or Drawing (3)
Selected problem in painting or drawing to further the development of a student's aesthetic, and which culminates in a body of work of exhibition quality. On demand. Corequisite: Art 408. Studio hours 6.

414 Major Trends in American Art (3)
The visual arts of the United States including the arts of the European settlers and the first generation Americans of the Colonial Period; the great portraitists of the Revolution and the 19th century, the 19th century landscape, the pioneer modernists of the early 20th century, and the regionalists of the 30s. Culminates with the first American style to achieve international significance, the New York School, and the resultant dominance of American art in the world today. Spring semester. Prerequisite: 214 or 215 (formerly 211, 212, 213).

431, 432 Arts of the Far East (3, 3)
A selective presentation of the visual arts of China, Japan, India, and other culturally significant regions of Asia. First semester devoted to the earlier phases of Chinese and Japanese art and the art of India from the Indus Valley Civilization through the Medieval period. Second semester presents developments in China from the Han Dynasty onward, and in Japan from the Heian period to the present. On demand. Courses need not be taken sequentially.

437, 438 Three Dimensional Studio III, IV (3, 3)
Directed study of student-selected 3-D problems and processes with primary focus on non-traditional forms. On demand. Courses are sequential. Prerequisite: Art 338.

439 Advanced Three Dimensional Studio (3)
Directed study of student-selected 3-D problems and processes with emphasis on development of personal aesthetic. On demand. Prerequisite or corequisite: Art 437.
440 Senior Studio in Sculpture (3)
Selected problems in the 3-D area to further the development of a student's aesthetic, and which culminates in a body of work of exhibition quality. On demand. Prerequisite: Art 439.

4S0r Concentration Topic in Printmaking (3)
Continuing investigation of one of various printmaking processes: intaglio, monotype, book art, lithography, screen printing. On demand. Students may not repeat the same topic. Maximum 9 hours toward concentration. Prerequisite: varies with topic offered and permission of department head.

451 Senior Studio in Printmaking (3)
Selected problem in printmaking to further the development of a student's aesthetic, and which culminates in a body of work of exhibition quality. On demand. Prerequisite: Art 439, 305, 306.

452 Research and Studio Problems in Elementary School Art (1-3)
Assigned projects in the history, theory, and innovative approaches in art education at the elementary level. Emphasis on studio problems directed toward the individual's need. On demand.

460 Graphic Design IV - Senior Graphic Design Studio (3)
An intensive design research course specifically focusing on design systems such as: signage, identity, package, environmental, product, or publication. This course will also address student preparation specifically for design professions. On demand. Prerequisite: Art 361.

46 Ir Concentration Topic in Graphic Design (3)
Continuing investigation of one of various graphic design topics: computer design II, advanced drawing for design, advanced typography. On demand. Students may not repeat the same topic. Maximum 9 hours toward concentration. Prerequisite: varies with topic offered and permission of department head.

490r Seminar in Art Education (3)
Emphasis on contemporary issues in art education. On demand.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
Every semester. See "Departmental Honors," page 27.

497r Research (1-4)
Every semester.

498r Individual Studies (1-4)
Every semester.

499r Group Studies (1-4)
Every semester.

Biology

The Department of Biology offers two majors: a B.S. in biology and a B.S. in medical technology. The course requirements are listed below.

Students are urged to consider attendance at one of the two institutions affiliated with UTC's Department of Biology that offer field course experience in the life sciences: Gulf Coast Research Laboratory, Ocean Springs, Mississippi, offering courses in marine biology; and Tech-Aqua, Smithville, Tennessee, a field station offering educational research opportunities in inland, freshwater field biology.

Preprofessional programs in dentistry, medical technology, medicine, cytotechnology, dental hygiene, pharmacy, and veterinary medicine are described in the Preprofessional Programs section of the Bulletin.

Biology (B.S.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course other than biology with laboratory (4 hours; approved related course below will apply)
Category E: 1 approved mathematics course (3 hours; approved related courses below will apply)
Category G: 1 approved perspectives course other than biology (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

Foreign language through 102 (first college year)
Mathematics 135, F136 or F145, F150; F145, F150 are recommended for prospective graduate students
Chemistry D121, 122, 351, 352; Chemistry 466 recommended for prospective graduate students
Physics 103, 104 or Geology 111, 112
Biology - 38 hours including 121,122, four laboratory courses above the 100 level, 3 hours of a single, formal lecture or laboratory course at the 400 level, and courses from the following areas:
Botany (select 1 course): 207,352
Zoology (select 1 course): 312, 313, 342
(Courses offered in Botany and Zoology offered at Gulf Coast Research Laboratory and Tech Aqua may be substituted. Permission of the department head required.)
Population (select 1 course): 306, 416
Chronology (select 1 course): 303, 315, 450
Physiology ( select 1 course): 304, 423, 463
Molecular (select 2 courses): 311,325, (326), 328
Recommended electives; Mathematics 210, Computer Science 118, and Chemistry 341
2.0 average in major and related courses (excluding Biology 210)
Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours
### Typical course of study in biology (B.S.)

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<tr>
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<th>Second Semester</th>
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<td>Mathematics 135 or F145 3</td>
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<td>Physics 103 or Geology 111 4</td>
<td>Physics 104 or Geology 112 4</td>
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*General Education courses from categories A,B,C, or G may be taken in any sequence.

### Medical Technology (B.S.)

**General Education** (see pages 22-23 for list of approved courses)

- Category A: 2 approved courses in written communication in the English language (6 hours)
- Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
- Category C: 2 approved behavioral or social science courses (6 hours)
- Category D: 1 approved physical or natural science course with laboratory (4 hours; approved related course below will apply)
- Category F: 1 approved mathematics course (3 hours; approved related courses below will apply)
- Category G: 1 approved perspectives course (3 hours)  

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

**Major and related courses**

- Mathematics 135, F136 or F145, F150; F145, F150 recommended for prospective graduate students
- Physics 104, and 16 hours of chemistry including D121, 122, 351, either 352 or 341
- Biology courses including 121, 122, 208, 209, 311, 412; 328 or 423; one course from 303,315,325,425, and one course from 306,307, or 408; 30 hours from approved school of medical technology
- 2.0 average in all biology courses

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

**Typical course of study in medical technology (B.S.)**

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<th>Second Semester</th>
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<td><strong>SECOND SEMESTER</strong></td>
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<td>Population Interaction 3-4</td>
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<td><strong>Total</strong> 18</td>
<td><strong>Total</strong> 16-18</td>
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</table>

Senior 30 hours from approved school of medical technology.

**BIOLOGY MINOR**

The Biology Department offers a minor requiring 20 hours of biology including Biology 121, 122 and eight hours at the 300 level or above. Minimum 2.0 average in the minor.

**BIOLOGY COURSES**

- **121 Principles of Biology I (4)**
  An introduction to the basic biological ideas including the methods of the biologist, Darwin's evolutionary theory, cell structure, digestion, respiration, body fluid regulation, cell division and reproduction, Mendelian and molecular genetics, and animal behavior. Every semester. *Lecture 3 hours, laboratory 2 hours. Prerequisite: 121.*

- **191 Functional Human Anatomy (4)**
  The structure of the human body as seen in its various levels of organization: cellular, tissue, organ, and system. Every semester. *Lecture 3 hours, laboratory 2 hours.*

- **199r Special Projects (1-4)**
  On demand. Maximum credit 4 hours. *Prerequisite: approval of instructor.*

- **207 Plant Morphology (4)**
  A study of the form, reproductive processes, and evolutionary relationships of the principal nonvascular and vascular plant groups. Spring semester. *Lecture 3 hours, laboratory 2 hours. Prerequisite: 122 or equivalent.*
208 Human Physiology (3)
Lecture studies of the physiological functions of the human body. Formerly 192.
Every semester. Corequisites: 209; Chemistry 121.

209 Laboratory Studies in Human Physiology (1)
Laboratory studies of the physiological functions of the human body. Formerly 193.
Every semester. Laboratory 2 hours. Pre- or corequisite: 208.

210 Microbiology and Health (4)
Microorganisms as related to disease, immunity, food preservation, and sanitation.
Every semester. Lecture 3 hours, laboratory 2 hours. Credit not allowed toward a biology or medical technology major. Prerequisite: Chemistry 121 or equivalent.

300 Genetics: A Human Concern (3)
An investigation of our current knowledge of genetics, both traditional and modern molecular, and the use of this knowledge as it affects our lives. Specifically, after a review of what we now know about human inheritance, discussions will center around the ethical, social, and legal ramifications of our present understanding and capabilities to utilize this knowledge both now and in the future. Fall semester alternate years.

303 Vertebrate Embryology (4)
Comparative development of the body from the gamete formation through early organ formation in selected vertebrates. Consideration of advances in experimental embryology. Spring semester alternate years. Lecture 2 hours, laboratory 4 hours. Prerequisite: 122; 302 or 315 recommended.

304 Plant Physiology (4)
Vascular plant structure and function emphasizing physiological activities, such as photosynthesis, water relations, mineral nutrition, and hormonal action. On demand. Lecture 3 hours, laboratory 2 hours. Prerequisites: 122; Chemistry 121, 122 or equivalent. Pre- or corequisite: Chemistry 351.

306 Ecology (3)
The community concept with reference to structure, energy, cycles, and populations; the distribution of plants and animals with analyses of the factors involved. Spring, fall, or summer semester. Prerequisite: 122 or equivalent, or approval of instructor.

307 Ecology Laboratory (1)
Field application of ecological principles. Spring, fall, or summer semester. Laboratory 2 hours. Field trips. Prerequisite: 122 or equivalent. Corequisite: 306.

311 Principles of Microbiology (4)
Morphology and physiology of microorganisms. Fall semester. Lecture 2 hours, laboratory 4 hours. Credit not allowed in both Biology 210 and 311. Prerequisites: 122, Chemistry 122 or equivalent.

312 Invertebrate Zoology (4)
A survey of the invertebrate phyla up to the chordates with an emphasis on their evolution, morphology, and physiological adaptations. Formerly 225. Fall semester alternate years. Lecture 3 hours, laboratory 2 hours. Prerequisite: 122 or equivalent.

313 Comparative Vertebrate Zoology (4)
The biology of the protochordates and the vertebrates with an emphasis on their evolution, comparative morphology and adaptations to the environment. Laboratory dissection of the shark and cat. Fall semester alternate years. Lecture 3 hours, laboratory 3 hours. Prerequisite: 122 or equivalent.

315 Evolution (3)
Evidences of evolution; mechanism of natural selection; role of genetic factors in the diversity of populations; origin of races; species and higher categories; adaptation and behavior; recognition of evolutionary relationships; significance of evolution to the human species. Spring semester alternate years. Prerequisite: 122 or equivalent.

325 Genetics (3)
The structure and function of the gene and chromosome; control of protein synthesis; mutation; genetic regulation; genetic transfer and recombination. Viruses, bacteria, and higher organisms will be discussed. Fall semester. Prerequisites: 122, Chemistry 122 or equivalent.

326 Genetics Laboratory (1)
Genetics investigations utilizing a variety of organisms. Fall semester. Laboratory 2 hours. Pre- or corequisite: 325.

328 Cellular Biology (4)
Morphological and chemical organization of the cell; cellular metabolism; metabolic energy relationships; nature of enzymes; fermentative and oxidative metabolism; photosynthesis. Spring semester. Lecture 3 hours, laboratory 2 hours. Prerequisites: 122, Chemistry 122 or equivalent. Pre- or corequisite: Chemistry 351.

330 Histology (4)
Structure of animal tissues and organ levels with emphasis on recognition, origin, and function of mammalian tissues. Spring semester alternate years. Lecture 2 hours, laboratory 4 hours. Prerequisites: 122, Chemistry 122 or equivalent. Pre- or corequisite: Chemistry 351.

342 Entomology (4)
Principles of entomology including the morphology, development, taxonomy, ecology, and importance of insects. Fall semester alternate years. Lecture 3 hours, laboratory 2 hours. Prerequisite: 122 or equivalent.

352 Taxonomy of Vascular Plants (4)
Speciation; breeding systems; pollination systems; edible and poisonous plants; and origin of flowering plants. Laboratories emphasize identification of flowering plants, conifers, and ferns. Some field work required. Spring semester. Lecture 2 hours, laboratory 4 hours. Prerequisite: 122 or equivalent.

408 Parasites of Man (4)
Life cycles, ecology, and physiology of the parasites of human beings including the diseases caused by these parasites. Formerly 308. On demand. Lecture 2 hours, laboratory 4 hours. Prerequisite: 122 or equivalent, or approval of instructor.

412 Immunology and Virology (3)
Reactions of the mammals, including humans, to foreign substances. A study of viruses using, in part, immunological and serological procedures. Spring semester. Prerequisite: 210 or 311.

416 Biogeography (3)
A study of the distribution of plants and animals from a climatic and historical perspective. Fall semester. Prerequisite: 122.

420 Molecular Genetics (3)
Genetic code, gene control, recombinant DNA, cloned genes, mutagenesis, antibody genes, tumor viruses, transferring genes into mammalian cells, recombinant genes and diseases. Spring semester alternate years. Prerequisite: 325 or 328.

423 Animal Physiology (4)
A detailed analysis of selected aspects of animal physiology. For students whose primary interest is biological science. On demand. Lecture 3 hours, laboratory 1 hour. Prerequisites: Biology 122 or equivalent, and a course in organic chemistry.

425 Developmental Biology (3)
Principles of development with emphasis on causal factors in plant and animal embryogenesis. On demand. Lecture 2 hours, laboratory 3 hours. Prerequisites: 122, Chemistry 122 or equivalents, and 8 additional semester hours of biology. Pre- or corequisite: Chemistry 351.

450 Systematics (3)
Principles of systematic biology including contemporary systematic philosophies, problems of species and speciation, taxonomic characters and interpretation, construction of evolutionary trees, higher categories and classification, nomenclature, taxonomic collections and procedures of identification. On demand. Prerequisites: 122 or equivalent.

463 Endocrinology (3)
The hormones of animals with emphasis on those of mammals. Fall semester. Prerequisites: 122, Chemistry 122.

494r Biology Seminar (1)
Presentation of programs of current biological interest by students, faculty, and outside speakers. On demand. Prerequisite: 16 semester hours biology. Maximum credit: 2 hours.
495r Departmental Honors (1-3 hours per term, 4 hours for the two terms) Every semester. See "Departmental Honors," page 27.

496r Biological Techniques (1) The study of various procedures dealing with such diverse topics as instrumentation, photomicrography, or special field techniques. Subject differs each time offered. On demand. Prerequisite: 15 hours of biology and approval of instructor.

497r Research (1-4) Every semester. Prerequisite: approval of instructor and head of the department.

498r Individual Studies (1-4) Every semester. Prerequisite: approval of instructor and head of the department.

499r Group Studies (1-4) On demand.

CONSORTIUM COURSES
The following two groups of courses are offered through consortiums and are generally accepted on a transfer basis. The department head should be consulted for further information.

Courses available at Gulf Coast Research Laboratory, Ocean Springs, Mississippi

141 Introduction to Marine Zoology (4) General introduction to the marine environment with emphasis on local fauna. (Same as GCRL Z0141.) Prerequisite: 122.

341 Marine Botany (4) Survey based upon local examples of the principal groups of marine algae and maritime flowering plants, treating structure, reproduction, distribution, identification, and ecology. (Same as GCRL BOT 341.) Prerequisite: 122.

361 Marine Invertebrate Zoology (6) Study of marine invertebrates, especially those of the Mississippi Sound region. Emphasis placed on the structure, classification, phylogenetic relationships, and functional processes. (Same as GCRL Z0361.) Prerequisite: 15 semester hours of biology. Credit not allowed for 312 and 361.

362 Marine Vertebrate Zoology and Ichthyology (6) A general study of the marine Chordata, including lower groups and the mammals and birds, with most emphasis on the fishes. (Same as GCRL Z0362.) Prerequisite: 313.

431 Basic Techniques in Marine Science for Teachers (3) A course designed to introduce the students, particularly in-service teachers, to the study of marine science and to promote the teaching of marine biology at all grade levels. (Same as GCRL MSE/431.) Prerequisite: 122 or consent of instructor.

441 Salt Marsh Ecology (4) A study with emphasis on the botanical aspects of local marshes; includes plant identification, composition, structure, distribution, and development of coastal marshes. (Same as GCRL BOT 441.) Prerequisites: 122, 306.

442 Marine Fisheries Management (4) A general course in fisheries management designed to acquaint students with the philosophy, objectives, problems, and principles involved in management decisions. Lecturers will include specialists in biology, fisheries statistics, sanitation, and marine law. (Same as GCRL Z0442.) Prerequisites: 122.

452 Marine Microbiology (6) Role of microorganisms in ecology of oceans and estuaries. Includes sampling procedures, taxonomy and marine bacteria, mineralization, microbial fouling, pollution, and diseases of marine animals. (Same as GCRL MIC 452.) Prerequisite: 311 or consent of instructor.

460 Marine Ecology (5) Relationship of marine organisms to their environment. Includes effects of temperature, salinity, light nutrient concentration, currents, and food on the abundance and distribution of marine organisms. (Same as GCRL Z0452.) Prerequisites: 207, 306, 312; Chemistry 342.

464 Aquaculture (6) Introduction to history, principles, problems, and procedures relating to culture of commercially important Gulf Coast crustaceans, fish, and mollusks. (Same as GCRLZ0464.) Prerequisite: 122.

Courses available at Upper Cumberland Biological Field Station (Tech Aqua), Center Hill Lake, Tennessee

427 Field Botany (5 quarter hours) Systematic botany of the flowering plants. Prerequisite: 122.

437 Freshwater Algae (5 quarter hours) Morphology, systematics, physiology, ecology, and phytyogeny of freshwater algae. Prerequisite: 122.

447 Ecosystems Analysis (5 quarter hours) Structure and function of regional ecosystems, including production, food webs, nutrient cycling, diversity and stability. Prerequisite: 122.

465 Dendrology (5 quarter hours) Classification, identification, ecology, economic characteristics, and nomenclature of woody plants of middle and eastern Tennessee. Prerequisite: 122.

467 Freshwater Invertebrates (5 quarter hours) Morphology, systematics, and ecology of aquatic invertebrates. Prerequisite: 122.

468 Ornithology (5 quarter hours) General survey of the class Aves with emphasis on morphology, identification, and ecology of local birds. Prerequisite: 122.

484 Limnology (5 quarter hours) Fundamental concepts of the interrelationships between aquatic organisms and their environments in lakes and rivers. Prerequisite: 122.

487 Ichthyology (5 quarter hours) Identification, classification, anatomy, physiology, ecology, and adaptations of fishes; emphasis on North American freshwater species. Prerequisite: 122.

Brock Scholars Program
See University Honors Program.

Business Administration
See School of Business Administration.

Chemistry
Professor McNeely, Head

The chemistry curriculum provides programs leading to B.A. and B.S. degrees. The B.A. program emphasizes the liberal arts with specialization in chemistry and offers the opportunity to develop a broad background in the sciences for students who are preparing for professional study in the health sciences. The B.S. program offers a greater concentration in chemistry, physics, and mathematics and is recommended for students with a career interest in chemistry. This program, which has been approved by the Committee on Professional Training of the American Chemical Society, is recommended for students who are planning
for graduate study in chemistry. Both programs provide strong emphasis on theory and laboratory experience. The department also offers a minor in chemistry.

Preprofessional programs in dentistry, medical technology, medicine, cytotechnology, dental hygiene, pharmacy, and veterinary medicine are described in the Preprofessional Programs section of the Catalog.

Chemistry (B.A.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language, (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course other than chemistry with laboratory (4 hours; approved related course below will apply)
Category E: 1 approved mathematics course (3 hours; approved related courses below will apply)
Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity
Foreign language through second college year
Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major and related courses
Mathematics F145, F150, 160
Physics D103, 104
32 hours chemistry including 121 (or 125), 122, 341, 351, 352, 371, 372, 386, 436, 443, 486r
2.0 average in all chemistry courses (excluding Chemistry 111, 211 and 311)
Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical course of study in chemistry (B.A.)

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SOPHOMORE

| Chemistry 341        | Chemistry 352         |
| Physics 104          | Elective              |
| Category C           |                       |
| Mathematics 160      | Physical Education Activity |
| Total                | 16                    |

JUNIOR

| Chemistry 371        | Chemistry 443         |
| Chemistry 386        | Foreign Language II   |
| Foreign Language I   | Electives             |
| General Education Category B | Category C |
| Electives            |                       |
| Total                | 17                    |

Senior

| Chemistry 486r       | Chemistry Elective    |
| Foreign Language III | Foreign Language IV   |
| Category B           | Electives             |
| Electives            |                       |
| Total                | 16                    |

TOTAL HOURS 128

Chemistry (B.S.)

General Education (see page 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course other than chemistry with laboratory (4 hours; approved related course below will apply)
Category E: 1 approved mathematics course (3 hours; approved related course below will apply)
Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses
One year of either German, French, Russian or Japanese. German is strongly recommended.
English 278
Mathematics F150, 160, 212
Physics D230 (or Physics D103 and 104), 231
Computer Science 118
Chemistry 121 (or 125), 122, 341, 351, 352, 371, 372, 386, 436, 443, 486r
One Chemistry research-related course from 342, 453, 495, 496, 497r
One additional Chemistry lab course from 342, 453,
One additional Chemistry course from 342, 367, 426, 453, 466, 475, 499r
2.0 average in all chemistry courses (excluding Chemistry 111, 211, 311)
Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical course of study in chemistry (B.S.)

<table>
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SOPHOMORE

| Chemistry 341          | Chemistry 352         |
| Physics 104            | Elective              |
| Category C            |                       |
| Mathematics 160       | Physical Education Activity |
| Total                 | 16                    |

JUNIOR

| Chemistry 371          | Chemistry 443         |
| Chemistry 386          | German 102            |
| German 101             | Mathematical 212      |
| General Education Category G | Chemistry 372 |
| Physics 231            | Chemistry 486r        |
| Total                  | 16                    |

TOTAL HOURS 16
42 — Chemistry

SENIOR
Chemistry Lab Elective 4  Chemistry 436 5
Chemistry 49 Tr 2  Chemistry Elective 2
General Education Category B 3  Electives 3
Electives 4  Electives 3
Electives 3  Electives 3
Total 16  Total 16

CHEMISTRY COURSES

111 Chemistry and the Environment (3)
Basic concepts and methods of investigation with applications of chemical principles to the environment. Fall semester. Credit may not be applied toward a chemistry major.

121 General Chemistry I (4)
Survey of principles and concepts involving structure, properties, and reactions of matter with experiments to demonstrate these principles. Every semester. Lecture 3 hours, laboratory 3 hours. Prerequisite: 2 years of high school algebra or Mathematics 106. Chemistry 125 may be substituted for Chemistry 121 in meeting all requirements.

122 General Chemistry II (4)
Survey of applications of principles to inorganic, organic, biological, analytical, and physical chemistry. Laboratory experiments in qualitative analysis. Every semester. Lecture 3 hours, laboratory 3 hours. Prerequisite: 121 or 125.

125 Honors General Chemistry (4)
Advanced survey of principles and concepts of chemistry including structure, properties, and chemical reactions. Experimental work with emphasis on advanced laboratory procedures. Fall semester. Lecture 3 hours, laboratory 3 hours. Prerequisite: approval of instructor. Chemistry 125 may be substituted for Chemistry 121 in meeting all requirements.

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit 4 hours.

211 Forensic Chemistry (3)
Survey of the chemical analysis to criminalistics including studies of physical evidence, microscopy, analysis of drugs, toxicology, arson investigation, serology, firearms, and documents. On demand. Credit may not be applied toward a chemistry major.

311 Technologies in America's Future (3)
An examination of the role of technological development on the society of the future. Particular emphasis will be placed on methods of technological forecasting, the positive and negative impacts of key technological developments on meeting societal and personal needs, and those areas of technology that are most likely to affect change in our society. Spring semester. Credit may not be applied toward a chemistry major.

341 Quantitative Analysis (4)
Theory and practice of volumetric, electrochemical, and spectrophotometric analysis applied to the study of stoichiometry and equilibrium. Every semester. Lecture 2 hours, laboratory 4 hours. Prerequisite: 122.

342 Analytical Methods (4)
Advanced theory and practice of analytical chemistry including instrumental approaches to separation and analysis. Spring semester. Lecture 2 hours, laboratory 4 hours. Prerequisite: 341.

351, 352 Organic Chemistry (4,4)
Study of compounds of carbon with emphasis on structure, synthesis, reactions, and reaction mechanisms with experiments to demonstrate principles and reactions. Qualitative organic analysis included in Chemistry 352. 351 fall/352 spring semester. Lecture 3 hours, laboratory 3 hours. Prerequisites: 122, 351 is prerequisite to 352.

367 Current Topics in Biochemistry (3)
Study of the biosynthesis of biochemically active molecules, including amino acids, immunoglobulins, and hormones, with special emphasis on current research in these areas. On demand. Prerequisite: 352.

371, 372 Physical Chemistry (4,4)
Thermodynamic, kinetic, and other descriptions of laws governing physical and chemical change. 371 every/372 spring semester. Lecture 3 hours, laboratory 3 hours. Prerequisites: Chemistry 341, 351; Mathematics 160. Co- or Prerequisite: Physics 104 or 231. Chemistry 371 is prerequisite to Chemistry 372.

386 Chemical Literature (1)
Survey of primary, secondary, and tertiary sources of chemical information including individual assignments in the use of these sources. Fall semester. Prerequisite: 16 semester hours of chemistry.

390r Cooperative Work Experience (1)
Cooperative chemistry work experience as part of the Cooperative Education Program. Students will participate in off-campus laboratory work in industry or government. Written and oral reports required. Prerequisite: Selection by Cooperative Education Office. Maximum credit 4 hours. Credit may not be applied towards a chemistry major, but for B.A. degree will count against the 42-hour limit permitted in any one department. Course graded on a satisfactory/no credit basis.

426 Chemistry in Industry (2)
Survey of the chemical industry including economic aspects, activities of chemists, and case studies in the solving of industrial problems. Spring semester alternate even years. Prerequisite: 24 semester hours of chemistry.

436 Advanced Inorganic Chemistry (5)
Advanced concepts in theoretical and descriptive inorganic chemistry with emphasis on valence bond, molecular orbital, and crystal field theories. Spring semester. Lecture 3 hours, laboratory 4 hours. Prerequisites: 352, 371.

443 Instrumental Analysis (4)
Theory and use of infrared and ultraviolet spectroscopy, nuclear magnetic resonance, atomic absorption, gas chromatography, thermal analysis, electrochemical analysis, and other instrumental methods of characterizing chemical structure. Spring semester. Lecture 3 hours, laboratory 3 hours. Prerequisites: 341 and 351. Co- or Prerequisite: Physics 104 or 231.

453 Advanced Organic Chemistry (4)
Advanced concepts of organic chemistry: principles of synthesis, structure, reaction mechanisms, and stereochemistry as applied to current research problems. Laboratory syntheses involve advanced techniques. Fall semester. Lecture 3 hours, laboratory 3 hours. Prerequisite: 352.

466 Biochemistry (3)
Survey of chemical aspects of metabolism in living systems including respiration, photosynthesis, lipid, and amino acid degradation; significance of nucleic acids, nucleotides, amino acids, and proteins. Fall semester. Prerequisite: 352.

475 Polymer Chemistry (2)
Chemistry of synthetic polymers including mechanisms of polymerization and relation of properties to structure. Spring semester alternate years. Prerequisites: 352 and 371 or equivalent knowledge.

486r Seminar (1)
Participation seminar based on student papers, invited speakers, and other activities. Every semester. Prerequisite: 24 semester hours of chemistry. Maximum credit 2 hours.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
Every semester. See "Departmental Honors," page 27.

496r Industrial Research (2)
Group participation in research project sponsored jointly by the Chemistry Department and a local industry. Written report required. On demand. Laboratory 4 hours. Prerequisite: 20 semester hours of chemistry.

497r Research (2)
Laboratory or library research on individual chemical problem under staff supervision. Seminar presentation of results. Student should confer with instructor prior to registration. Every semester. Laboratory 4 hours. Maximum credit 4 hours.
Communication

Associate Professor, Rushing, Head

The Department of Communication offers a Bachelor of Arts degree requiring a combination of broad liberal learning and specialized study in communication. In addition to meeting the general education requirements, the communication major must study in some depth in one or two departments outside the program. Concentrations in communication are available in advertising, broadcasting and electronic media, broadcast journalism, journalism, and public relations.

Communication (B.A.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English Language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category F: Mathematics F210
Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester of physical education activity

Foreign Language through second college year

Related Study
Completion of one of the following

1. Two minors* in different departments in the College of Arts and Sciences, including at least one from humanities/fine arts or behavioral/social sciences (economics may be included), approved by the adviser.

2. A major in a department in the College of Arts and Sciences, other than Communication, approved by the adviser.

*Approved courses in the minors may also be used to satisfy general education requirements.

Major
Completion of one of the following concentrations:

1. Advertising:
   Communication 101, 120, 260, 267, 271, 365, 450, 451, 465, 480 or 485r; English 370; Marketing 313,362.

2. Broadcasting and Electronic Media:
   Communication 101,120,260,290,340,345,364,450,451,480 or 485r, 490.

3. Broadcast Journalism:
   Communication 101,120,260,290,340,345,360,381,450,451,480 or 485r, 481.

4. Journalism:
   Communication 101,120,260,361,363,367,450,451,462,480 or 485r; Art 251; English 370.

5. Public Relations:
   Communication 101,120,260,267,271,360,363,450,451,471,480 or 485r; Art 251; English 370.

2.0 average in all communication courses

Minimum of 30 hours of 300 and 400 level courses.
Electives to complete 128 hours.

Typical course of study in communication (B.A.)

Communication (B.A.): advertising concentration

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Communication (B.A.): broadcasting and electronic media concentration

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### Communication (B.A.): broadcast journalism concentration

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| SOPHOMORE       |                  |
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| Foreign Language 211 or 213 | Foreign Language 212 or 214 |
| General Education Category B | Mathematics F210 |
| General Education Category D | General Education Category G |
| General Education Category C | General Education Category C |
| Physical Education Activity | Physical Education Activity |
| Total 17 | Total 15 |

| JUNIOR          |                  |
| Communication 340 | Communication 345 |
| Minor or Electives | Minor or Electives |
| Total 15 | Total 15 |

| SENIOR          |                  |
| Communication 450 | Communication 480 or 485 |
| Communication 451 | Communication 490 |
| Minor or Electives | Minor or Electives |
| Total 18 | Total 15 |

TOTAL HOURS 128

### Communication (B.A.): public relations concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
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<tr>
<td>Communication 101</td>
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| SOPHOMORE       |                  |
| Communication 271 | Communication 267 |
| Art 251 | Mathematics F210 |
| Foreign Language 211 or 213 | General Education Category C |
| General Education Category B | General Education Category D |
| University Studies 101 | General Education Category C |
| Physical Education Activity | Physical Education Activity |
| Total 17 | Total 15 |

| JUNIOR          |                  |
| English 370 | Communication 360 |
| General Education Category G | Minor or Electives |
| Total 15 | Total 15 |

| SENIOR          |                  |
| Communication 363 | Communication 480 or 485 |
| Communication 450 | Communication 490 |
| Minor or Electives | Minor or Electives |
| Total 18 | Total 15 |

TOTAL HOURS 128

### Communication (B.A.): journalism concentration

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<td>Total 17</td>
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### Communication courses

- **COMMUNICATION MINOR**
  A total of 18 hours, including Communication 101, 120, and 260. Nine hours of approved Communication courses at the 300 level or above. Minimum 2.0 average in the minor.

- **COMMUNICATION COURSES**
  
  **101 Introduction to Mass Communication (3)**
  History, structure, and practice of mass communication designed to expose beginning students to the broad subject of mass communication. Major media issues explored. Every semester.
120 Mass Media in American Society (3)
Development, theory, functions, uses, and effects of mass media designed to explore interaction between people and the mass media, and to explore roles of mass media in society and in daily lives of individuals. Every semester.

199r Special Projects (1-4)
Individual or group studies. Every semester.

210 History of American Journalism (3)
History of American journalism; examination of current issues in journalism. Formerly English 271. On demand.

260 Writing for the Mass Media (3)
Intensive practice in writing techniques used by the print and electronic media. Style, usage, and format will be studied in depth. Every semester. Prerequisites: 101; English 121 and the ability to type 30 wpm; or approval of instructor.

267 Publication Design (3)
Elements of publication design, with special attention to typography, graphics, and layout. Every semester. Prerequisite: 260.

271 Principles and Practices of Public Relations (3)
Fundamentals of establishing and maintaining effective relations with organizational publics. Introduction to publicity methods and managing the public relations function. Case study approach. Fall semester. Prerequisites: 101, 260, or approval of instructor.

290 Introduction to Broadcasting and Electronic Media (3)

340 Audio Production and Presentation (3)
Producing and presenting content in radio and nonbroadcast audio media, using both studio and portable facilities. Studio, control room, and field production procedures, recording and editing, music and sound effects. Every semester.

345 Video Production and Presentation (3)
Producing and presenting content in television, cable TV, and non-broadcast video media, using both studio and portable facilities. Studio, control room, and field production procedures, recording and editing, lighting, and graphics. Every semester.

360 News Writing and Reporting I (3)
Fundamentals of news gathering, news writing, news evaluation, and the structure of news stories. Formerly English 371. Every semester. Prerequisites: 260, typing proficiency of 36 wpm, or approval of instructor.

361 News Writing and Reporting II (3)
Instruction and practice in reporting news gathered from the traditional news beats (courts, county-city government, university, city, etc.) Spring semester. Prerequisite: 360 or approval of instructor.

363 Feature Writing (3)
Nonfiction writing for magazines and for specialized publications. Formerly English 374. Fall semester. Prerequisite: 360 or approval of instructor.

364 Writing for Broadcast and Electronic Media (3)
Techniques of writing for radio, television, cable TV, and for non-broadcast audio and video media. News, commercials, public service announcements, continuity, and institutional communication content. Spring semester. Prerequisites: 260, 290; typing proficiency of 36 wpm; or approval of instructor.

365 Advertising Copy Writing (3)
Principles and practices in the preparation of effective advertising copy for a variety of media. Includes basic consumer research, creative conceptual and campaign design, copy testing. Emphasis on print advertising, but radio and TV covered. Fall semester. Prerequisites: Marketing 362, typing proficiency of/36 wpm, or approval of instructor.

367 Newspaper Editing and Design (3)
Principles and practices of editing and evaluating news copy, writing headlines and captions, newspaper layout and design practices, electronic editing, and newspaper production processes. Spring semester. Prerequisite: 360.

381 Broadcast News and Public Affairs I (3)
Researching, writing, reporting, and producing news and public affairs programs for radio and television. Legal, ethical, and managerial concerns. Spring semester. Prerequisites: 340, 360.

450 Communication Research (3)
Analyzing and using research in the mass media. Interpreting audience and message research. Fundamentals of media research methods and participation in a media research project. Fall semester. Prerequisites: junior standing and Math 210.

451 Legal and Ethical Aspects of Mass Media (3)
Rights and privileges, secrecy and censorship, libel, privacy, contempt, broadcasting law, commerce provisions, and copyright. Contemporary case studies. Fall semester.

462 Interpretive and Editorial Writing (3)
Instruction and practice in analytical, interpretive, persuasive writing; concepts of editorial responsibility. Formerly English 372. Spring semester. Prerequisite: 361 or approval of instructor.

465 Advertising Campaign (3)
Planning and implementing the complete advertising campaign, from designing the creative platform to writing and producing advertisements and commercials in the several media; procedures in media buying; methods of evaluating campaign results. Use of case studies and workshops. Spring semester. Prerequisite: 365.

471 Publicity Methods (3)
Planning and implementing the public relations campaign. Using the mass media to achieve publicity objectives. Case studies of publicity campaigns and class implementation of a campaign. Spring semester. Prerequisite: 271 or approval of instructor.

475r Specialized Public Relations Practice (3)
Intensive exploration of specialized application of public relations in such areas as fund-raising, employee communication, consumer behavior, and environmental public relations. Topics vary. Offerings are announced at preregistration. On demand. Maximum 6 hours credit. Prerequisite: 271 or approval of instructor.

480 Directed Project (3)
Guided project designed to demonstrate proficiency at preprofessional level in area of concentration. Every semester. Prerequisites: senior standing and approval of adviser.

481 Broadcast News and Public Affairs II (3)
A continuation of Communication 381 with the emphasis on television news and public affairs. Spring semester. Prerequisite: 381.

485r Individual Internship (3)
Professional service, arranged and supervised individually, with newspapers, radio and television stations, advertising agencies, and other media institutions. Every semester. Prerequisites: senior standing; approval of adviser one full semester in advance. Maximum 6 hours.

490 Broadcast and Electronic Media Management (3)
Principles of management and their application to radio, television, cable television, and other electronic media systems. Emphasis on personnel, programming, sales, and promotion. Spring semester.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
Every semester. See "Departmental Honors," page 27.

497r Research (1-4)
Every semester. Prerequisite: approval of department head.

498r Individual Studies (1-4)
Every semester. Prerequisite: approval of department head.

499r Group Studies (1-4)
On demand.
English
Professor T. Ware, Head

In addition to providing a variety of courses for general education and for electives, the English Department offers programs leading to the B.A. (in English and American language and literature) and to the B.S. (in secondary education: English). Beyond the traditional freshman program in rhetoric and composition, most of the offerings in the English curriculum are based on the study of literature, such as genre studies, courses in major authors, and surveys of literary periods. There are also several upper level courses which stress the development of skills in various forms of writing. It is in fostering and advancing the humanistic traditions, however, that the English Department makes its principal contribution to liberal education.

English and American Language and Literature (B.A.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses other than English; one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category F: 1 approved mathematics course (3 hours)
Category G: 1 approved perspectives course other than English (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one semester physical education activity
Foreign language through second college year
Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major and related courses
39 hours English in addition to general education requirements including: English 203; 207; 211 and 212; 213 and 214; 361; at least one course in the novel at the 300 or 400 level
At least 9 of the remaining hours must be in 300- and 400-level courses, with one course in English literature before 1800
12 hours additional in supporting courses beyond the General Education requirements: these courses in conjunction with the academic adviser.
2.0 average in all English courses (excluding general education Category A courses)

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours
For teacher certification see School of Education section.

Writing Concentration
The Department of English permits a concentration in writing within the English major. To take a concentration in writing, a student must complete the major in English including at least 12 hours from the following courses, no more than two courses on the 200 level and at least one at the 400 level: English 270, 277, 278, 279, 300, 370, 375r, 376r, 410, 471r, 473, 479r, 495r when topic is appropriate, Communication 260, 363.

Typical course of study for English and American language and literature (B.A.)

FRESHMAN
English 121-122
Behavioral Science
University Studies 101
Humanities, Fine Arts
Mathematics, Natural Science
Foreign Language
Physical Education
Total

SOPHOMORE
English 203
English 211, 212
English 213 and 214
Humanities, Fine Arts
Foreign Language
Support course (chosen with adviser)
Electives
Behavioral Science
Total

JUNIOR
English 207
English Electives, including novel course
Support courses (chosen with adviser)
Perspectives
Electives
Total

SENIOR
English 361
English Electives (300–400 level)
Support course (chosen with adviser)
Electives
Total

TOTAL HOURS 128

ENGLISH MINORS

English: Literature
21 hours including 133, 203, 207, one (1) from English 204, 211, 212, 213, 214 and three (3) from 300–400 level literature courses with one (1) course before 1800 (except English 442r), and one (1) course after 1800 in American or English literature, and one (1) elective 300–400 level in literature or writing to be chosen in conjunction with an academic advisor.
English: Writing
21 hours including 15 hours in writing courses and 6 hours elective at the 300 level or above - all to be chosen in conjunction with an academic advisor.
The following are the professional writing courses: 277 or 278, 279, 300, 410, 471r.
The following are the creative writing (fiction or poetry) courses: 270, 375r, 376r, 471r.
The 15 hours may be achieved in any combination of professional and creative courses. The six (6) hours may be in writing or literature courses.

At least 9 hours must be at the 300 level or above.

ENGLISH COURSES

105 Developmental Writing I (3 hours of institutional credit)
Review of correct language forms. Requires extensive practice in the writing of sentences and paragraphs as well as in the practice of editing for proper punctuation and accurate grammatical structure. Every semester. Credit not applicable toward any degree. Prerequisite: Placement required.

106 Developmental Writing II (3 hours of institutional credit)
Emphasis on developing ideas and organizing them into coherent paragraphs while using correct language forms. Requires extensive practice in writing paragraphs and short essays. Every semester. Credit not applicable toward any degree. Prerequisite: Grade of C in English 105 or placement.

121 Rhetoric and Composition (3)
The principles and practice of effective reading and writing. Frequent themes, exercises, selected readings. Attention to individual problems of grammar and usage. Formerly English 101. Every semester. Prerequisite: Grade of C in English 105 or 121 placement. In rare instances exemption from English 121 may be recommended by the department.

122 Rhetoric and Composition (3)
Review of competencies stressed in English 121 with emphasis on the extended essay; use of research matter in writing; attention to diction, figurative and symbolic language, relationship of style and meaning. Formerly English 102. Every semester. Prerequisite: English 121 or placement.

131 Values in 20th Century American Fiction (3)
A study of contemporary man's search for values as reflected in selected twentieth century American novels and short stories from World War I to the present. Formerly English 111. Spring semester alternate years.

133 Introduction to Literature (3)
Readings from poetry, fiction, and drama to demonstrate how the writer selects from ideas, experience, and language and combines these elements to speak of and to the human condition. Formerly English 103. Fall and spring semester.

161 Writing and Study Skills for Foreign Students (6)
A rapid review of English grammatical structures and pronunciation with intensive oral and written drill. Required during the first term of residence of all foreign students who are not excused from it on the basis of the English proficiency examination offered during each fall term. On demand.

166 Vocabulary Development (1)
Designed to enhance and strengthen the student's vocabulary by exercises stressing technical as well as general uses of language, the importance of context, and etymology. Fall and spring semester.

199r Special Projects (1-4)
Individual or group projects. Every semester. Maximum credit 4 hours for B.A. in English or B.S., Secondary Education in English. By permission of department head.

203 Literature of the Humanities (3)
Selections from the literature of the Western tradition, from Homer to the end of the Renaissance; read in English and studied in the context of the other humanities and the fine arts. Fall and spring semester.

204 World Literature from the Renaissance (3)
Selections from English literature of the Renaissance and later periods and from European and American writers. Spring semester alternate years.

207 Shakespeare: an Introduction (3)
Fall and spring semester.

211 Survey of English Literature to 1800 (3)
Fall and spring semester.

212 Survey of English Literature since 1800 (3)
Fall and spring semester.

213 American Literature to 1855 (3)
Representative works from the Colonial and Romantic periods. Fall semester.

214 American Literature from 1855 (3)
Representative works from the late 19th and 20th centuries. Fall and spring semester.

228 Children's Literature (3)
A survey and evaluation of some of the best literature for children, with special attention to literature for preschool and elementary school years. Fall and spring semester. Prerequisite: one lower level course in written communication in English.

229 Literature for the Adolescent (3)
A survey and evaluation of literature whose primary audience is the adolescent, with special attention to the usefulness of such literature in secondary education. Spring semester. Prerequisite: one lower level course in written communication in English.

230 Popular Fiction (3)
Science fiction or detective fiction or other type of popular fiction, one or another of which will be studied for its literary merit; the type of popular fiction to be studied in any particular section will be specified in the schedule of classes. On demand.

233 The Uses of Tradition: India and Japan (3)
A comparison of two mythic and traditional cultures confronting modernism, as reflected in expository reading, documentary films, and the arts, including fiction, poetry, music, and dramatic film. On demand.

257 The Romantic Experience (3)
An interdisciplinary survey of Romanticism in European civilization, ca. 1789 to 1918, addressing and analyzing some of the main historical, philosophical, and aesthetic forces involved in this broad cultural experience. On demand.

270 Creative Writing (3)
Instruction and practice in writing imaginative literature for magazines and specialized publications. Fall and spring semester.

277 Professional Writing (3)
An introduction to the theory and practice of the basic forms of writing used in any profession. Emphasis on the processes of communication in addition to their various forms; practice in the reading and writing of memoranda, prospectuses, digests, charts, extended reports, etc. Fall and spring semester.

278 Scientific Writing (3)
An introduction to the theory and practice of science writing. Emphasis on the problems of communicating to specialized audiences and the problems of translating specialized language for general audiences; practice in the translation and writing of technical reports and supporting materials, proposals, articles, reports, etc.; practice in the conversion of technical information and formulas into everyday language. Spring semester.

279 Writing for the Human and Social Sciences (3)
An introduction to the theory and practice of the modes of discourse used in human and social sciences. Emphasis on the processes of thinking involved in researching, reading, and communicating in these fields; extended research, and original essays with opportunities for the student to focus on his or her academic field. Spring semester alternate years.

300 Intermediate Rhetoric and Composition (3)
An introduction to the theory and practice of the basic kinds and combinations of discourse and their aims; extended essays and other writing assignments in these kinds of discourse. Fall and spring semester.
301 The Literature of England to 1300 (3)  
Representative works in translation. On demand.

302 The Literature of England, 1300-1500 (3)  
Representative works including Chaucer. On demand.

303 Early Renaissance Literature to 1600 (3)  
Representative works from Tudor and Elizabethan periods. Fall semester alternate years.

304 Milton and the Seventeenth Century (3)  
Representative works from the Jacobean and late Renaissance periods. Spring alternate years.

305 Age of Dryden, Pope, and Swift (3)  
Representative works from the early 18th century. On demand.

306 Age of Johnson (3)  
Representative works from the mid and late 18th century. On demand.

317 English Romantic Period (3)  
Representative works from the period 1789-1837. On demand

318 Victorian Literature (3)  
Representative works from the period 1837-1901. On demand.

319 English Transitional Period (3)  
Representative works from the period 1880-1920. On demand.

320 Modern British Literature (3)  

331 American Women Writers (3)  
Prerequisite: 122.

332 Southern American Literature (3)  
Emphasis on 20th-century authors. Fall semester.

333r Masterpieces of Asian Literature (3)  
Study of representative works with emphasis on a country, period, or genre. On demand.

334 King James Bible as Literature (3)  
Study of selected portions of the Old and New Testaments as literary masterpieces.  
Focus on study of the Bible as a central book in Western thought and as background for English and American literature. On demand.

336 The Development of Medieval Germanic Epic (3)  
The major epics of the Germanic tradition, studied in the context of the cultural and historical background out of which they came. On demand.  
Prerequisite: 122.

350 Introduction to the Theory and Function of Literary Criticism (3)  
The concepts, terminology, and procedures of formal literary study. Emphasis on the basic theoretical problems of criticism and relation of literary analysis to literary evaluation, etc. Fall semester.

351 History of Literary Criticism (3)  
Selected readings from representative literary critics. On demand.

360 Introduction to Linguistics (3)  
Designed to make the student aware of language as a field of study; to show the basic assumptions and methods of linguistics; and to introduce the terminology and scholarship in the field. On demand.

361 History of the English Language (3)  
A survey of the history of the English language, beginning with its Indo-European backgrounds, tracing the development of Old, Middle, and Modern English through major changes in vocabulary, sound, word formation, and syntax. Fall semester.  
Prerequisite: 122.

370 Persuasion and Propaganda (3)  
A study of the powers and abuses of persuasion, using historical and contemporary examples. On demand.  
May not be used for English minor.

375r Creative Writing: Poetry (3)  
Instruction and practice in the understanding and writing of poetry. Permission of department head and instructor required to register for credit after 6 hours earned.  
Spring semester.

376r Creative Writing: Fiction (3)  
Instruction and practice in the understanding and writing of fiction. Permission of department head and instructor required to register for credit after 6 hours earned.  
Spring semester.

392 Religion and Literature (3)  
A critical examination of the possible relationships between religion and literature; reading and discussion of selected literature from both disciplines. On demand.

395 Greek and Roman Tragedy in Translation (3)  
On demand. See Classics 395.

397 Music, Poetry and Ideas (3)  
A consideration of technique, meaning, style, form, expression, and value in music and poetry. On demand.  
May be registered as Music 397.

400 Seminar in the Novel (3)  
A seminar in the senior year designed to integrate the student's understanding of literature. Spring semester.

410 Approach to Composition (3)  
Designed to improve the student's writing and to improve the individual's ability as a critic of writing, particularly as a potential teacher of writing; focus on expository prose. Fall and spring semester.

420 Early English Drama, Origins to 1642 (3)  
The English drama as a literary type, its history and development from Medieval times to 1642, exclusive of Shakespeare. On demand.

421 Later English Drama, 1660-1800 (3)  
Study of English drama from the Restoration through the 18th century. On demand.

423 American Novel to 1900 (3)  
Representative novels of American romanticism, realism, and naturalism. On demand.

430 Development of the British Novel: from Defoe to George Eliot (3)  
The development of the British novel from its origins in the 18th century through George Eliot and her contemporaries. On demand.

431 The Modern British Novel (3)  
On demand.

433 Modern Poetry (3)  
On demand.

434 Twentieth-Century American Novel (3)  
On demand.

435 Modern Drama (3)  
Selected plays of representative dramatists with special emphasis on American drama since 1920. On demand.

442r Shakespeare: Special Topics (3)  
On demand.  
Maximum credit 6 hours for the degree.

443r Major British Figures (3)  
A reading course in the works of a major British writer: the writer to be studied will be specified in the schedule of classes. On demand.  
Maximum credit 6 hours for the degree.
Environmental Studies

Professor Perfetti, Head

The environmental studies major consists of two parts: 1) a core curriculum required of all majors and 2) a concentration of study in one of the following areas: biology, chemistry, engineering, geology, geography, mathematics, physics, or sociology/anthropology. Environmental studies courses are described below; all other required courses are described in the listings of other departments named.

Environmental Studies (B.S.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses other than discipline concentration (6 hours)
Category D: 1 approved physical or natural science course, other than environmental studies or discipline concentration, with laboratory (4 hours)
Category E: 1 approved mathematics course (3 hours; approved related courses below will apply)
Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester of physical education activity

Major

The following core courses are required of all Environmental Studies majors:
30 hours including Environmental Studies 150, 151, and a senior experience for at least 2 credits (may include 490, 491r, 495r, 496r, or 498r), with remaining hours from EST 240, 250, 340, 360, 410, 480, 484, Geography 407, 465 and 466, Geology 405, 436, 445, Mathematics F145, F150', F210'

In addition, each major must complete the requirements for one of the following concentrations —

Biology:
Computer Science 110 or 118
Chemistry D1 21, 122, 341, 351
Biology 121, 122, 306 (307 recommended)
Three courses from Biology 207, 311, 312, 313, 325, 352, 352, 408, and 416
One course from Environmental Studies 225, 408 or 465

Chemistry:
Computer Science 110 or 118
Biology D121, 122, 306 (307 recommended)
Chemistry 121, 122, 341, 352, 352, 443
Recommended: Chemistry 371 for students seeking federal certification.
Chemistry 371 has Mathematics 160 and Physics 104 as prerequisites.

Engineering science:
Chemistry D121, 122, 341, 351, 352
Engineering 103, 104, 113, 114, 124, 211, 225, 271, 272, 303, 307, 322, 328, 329, 331
Mathematics 160, 212, 245, 255
Physics 231, 232

Geology:
Computer Science 110 or 118
Chemistry D121, 122
Geography 101 and 206 (409 recommended)
Geology 111, 112, 341, 342, and 9 additional hours from 225, 404, 407, 436, 445, or 496. These hours are additional to any Geology hours taken as part of the 30 hours required of all EST majors.

Geography:
Computer Science 110 or 118
Sociology C151, 209, 314
Geology 111, 112
21 hours from Geography, 9 of which must be at the upper level. These hours are additional to any Geography hours taken as part of the 30 hours required of all EST majors. With permission of the Geosciences/Environmental Studies department head, Geology 307 or Biology 416 or an upper level EST course may be substituted for 3 hours.

Mathematics:
Computer Science 118
1 two semester sequence from biology, chemistry, engineering, geology, physics
Typical courses of study in environmental studies (B.S.)

Environmental studies (B.S.): biology concentration

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<td>Environmental Studies 150 4</td>
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<td>University Studies 101 3</td>
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**TOTAL HOURS 128**

Environmental studies (B.S.): engineering concentration

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**TOTAL HOURS 128**
Environmental studies (B.S.): geography concentration

First Semester

FRESHMAN

Environmental Studies 150 4
Geology 111 4
General Education Category A 3
Geography 101 or 103 3
University Studies 101 3
Total 17

Second Semester

Environmental Studies 151 4
Geology 112 4
General Education Category A 3
Sociology CI 51 3
Physical Education 021 1
Total 15

SENIOR

General Education Category A 3
Environmental Studies 484 3-4
Geography 415 3
Geography or environmental studies 300/400 level elective* 3
Elective 3
Total 16-17

Environmental studies (B.S.): mathematics concentration

First Semester

FRESHMAN

Environmental Studies 150 4
General Education Category A 3
Physical Education 021 1
Mathematics F150 (135/145)* 4
University Studies 101 3
Total 15

Second Semester

Environmental Studies 151 4
Mathematics 255 3
Mathematics 295 3
General Education Category C 3
Total 16

TOTAL HOURS 128

*Chosen with permission of the geoscience/environmental studies department head.
Environmental studies (B.S.): physics concentration

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<td>TOTAL HOURS 128</td>
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**ENVIROMENTAL STUDIES MINOR**

18 hours including Environmental Studies 150, 151, 1480, Geography 407 and two additional upper level environmental studies courses.

Minimum 2.0 average in the minor.

**ENVIRONMENTAL STUDIES COURSES**

150 Introduction to Environmental Problems I (4)

An introduction to current environmental problems at the global, national and local levels. Topics to be covered include: ecosystems, geochemical cycles, domestic and industrial wastes, pest control, resources, energy sources, land use, and population dynamics. The laboratory integrates the scientific approach as applied to such environmental problems as population growth and energy alternatives and provides hands-on experience in identification of abiotic and biotic factors affecting environmental quality. Open to all students interested in environmental issues. Every semester. Lecture 3 hours, laboratory 2 hours.
151 Introduction to Environmental Problems II (4)
Continues examination of current environmental problems, including environmental impact assessments, risk analysis and environmental health, an overview of environmental legislation, and selected high risk ecosystems (e.g. wetlands, bottomland hardwoods, etc.). Spring semester. Lecture 3 hours, laboratory 2 hours. Prerequisite: 150.

199r Special Projects (1-4)
On demand. Maximum credit four hours.

225 Oceanography (3)
Chemical and physical properties of sea water. Causes and patterns of oceanic circulation. Life zones in the oceans and factors delimiting them. Origin and physiography of ocean basins. Mineral and energy resources of the oceans. Spring semester. May be registered as Geology 225.

226 Oceanography Laboratory (1)

240 Introduction to Soil Resources (3)
Geologic origin, characteristics, and taxonomic groupings of soils, together with emphasis on survey methods and mapping procedures. Conservation and the environmental impact of agricultural and nonagricultural soil and land use. Spring semester alternate odd years. Lecture 2 hours, laboratory 2 hours.

250 World Resources (3)
Location, utilization, production, consumption, and significance of resources to society. Introduction to the vast, interlocking network of activities that produce and affect the world's use and consumption of resources. Spring semester alternate odd years. May be registered as Geography 250. Lecture 3 hours.

340 Environmental Survey Methods (4)
Field survey methods for compiling of botanical, zoological, geological, and archaeological data. To include mapping, sampling, and recording. Fall semester alternate even years. Lecture 2 hours, laboratory 4 hours.

360 Air and Water Pollution Control (3)
The study of the origin, monitoring and control of air and water pollutants; to include sample taking, testing and observation of procedures used in community laboratories. Spring semester alternate odd years. Lecture 2 hours, laboratory 2 hours. Prerequisites: one year of a natural science or engineering and fulfillment of the maxsematics and statistics requirement for the respective concentration.

406 Limnology and Reservoir Ecology (3)
Chemical, physical, and biological processes in lake and reservoir systems (nutrient budgets and cycling, hydrodynamics, phytoplankton/zooplankton/benthic dynamics, and physical similarities and differences in lakes and reservoirs). Fall semester alternate odd years. Lecture 2 hours, laboratory 2 hours. Prerequisites: general chemistry, general biology, ecology, junior standing; general physics recommended.

410 Environmental Law and Agencies (3)
Survey of national, state, and local environmental agencies, and provisions of environmental laws and ordinances at all levels of government. Emphasis on National Environmental Policy Act (NEPA). Analysis and composition of environmental impact statements. Spring semester alternate odd years. Prerequisite: senior standing.

430 Problems in Environmental Management (3)
Case history studies of problems in environmental management, with emphasis on the kinds of environmental precautions required in specific situations and on factors contributing to legal challenges to industrial and technological activities which have environmental consequences. On demand.

455 Demographic Analysis (3)
Techniques of measuring and analyzing human population growth and distribution. Emphasis is placed on relationships of human population changes on environmental resources as well as effects of environment on morbidity and mortality. On demand.

465 General Toxicology (3)
Basic concepts of toxicology including an overview of toxic agents, the nature of toxic damage, and the methods used in quantitative toxicology. On demand. Lecture 3 hours. Prerequisites: 150; Biology, either 121 or 122; Chemistry 121 and 122. Recommended: Chemistry 351.

475r Environmental Workshops for Teachers (1-4)
Workshops for science educators in environmentally related topics such as the conservation of endangered species, soil conservation, or water quality and water resource conservation. Designed to provide teachers with laboratory or field experiences and materials related to the environmental sciences. May be taken a maximum of three times.

480 Seminar on the Environment (1)
Seminar and discussion of topics of current environmental interest. Student presentation required. Spring semester. Prerequisite: senior or graduate standing.

481 Politics and the Environment (3)
A political analysis of the conflicting interests involved in implementing policies to protect the environment, develop alternative energy sources, and promote economic growth. On demand.

482 Technology and the Environment (3)
Explores the complex relationships between technology and the environment that have existed since the Paleolithic Period. Special attention to the study of tools for extracting materials and energy from the environment and to the effect of these tools upon the landscape. On demand.

483 Economics and the Environment (3)
An economic analysis of causes and effects of pollution; the role of economic policy in controlling pollution with special emphasis on water, air, and solid waste residuals; an evaluation of the alternative environmental controls. On demand.

484 Values and the Environment (3)
An examination of the personal and social values at issue in the environmental problems of urban and nonurban regions. Attention to the emerging concern for an environmental ethic. Fall semester alternate odd years. Prerequisite: 50.

490 Environmental Studies Senior Project (3)
A group project involving analysis and solution of an environmental problem; oral and written presentation of progress and final results required. Fall semester alternate even years. Prerequisite: senior standing.

491r Environmental Studies Internship (Specific Agency, etc.) (1-4)
A cooperative arrangement between the University and agencies, organizations, groups, and businesses involved with environmental problems. Designed to provide students with a learning, observing, and work experience through direct contact with individuals working on problems related to their field. Maximum credit: 9 hours. Every semester. Prerequisite: junior or senior standing and consent of environmental studies department head.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand. Prerequisites: approval of instructor and head of the department.

498r Individual Studies (1-4)
Every semester. Prerequisites: approval of instructor and head of the department.

499r Group Studies (1-4)
Every semester.
Foreign Languages and Literatures

Associate Professor Bohrer, Head

The department offers the B.A. degree in French, Greek and Latin, Latin, and Spanish. A student may also pursue a B.A. in humanities degree with an emphasis in classical civilization. Elementary and intermediate German are offered and may be chosen to fulfill the foreign language requirement. Modern language courses, taught in English, which deal with foreign literatures and civilizations, afford the nonforeign language student a broader perspective of other peoples and cultures.

There is no prescribed program which departmental majors should follow other than to meet the required number of hours for the respective major. Upper level courses are offered based on student needs.

The department also offers a minor program in Latin, Greek, Spanish, or French.

A native speaker of a language which is offered for credit by the Department of Foreign Languages and Literatures or anyone with native speaker proficiency in such a language must consult the department for proper placement and permission to enroll.

During the summer term, modern foreign language courses of 4 semester hours require 600 minutes of language laboratory time in addition to the scheduled class time.

Classical Civilization

MINOR IN CLASSICS
18 hours in classical civilization including Classics 110, 310, 395, 396, 397 and Philosophy 351.
Minimum 2.0 average in the minor.

CLASSICS COURSES

110 Major Triumphs of Greece and Rome (3)
Major accomplishments of the Greco-Roman civilization and their impact upon the modern world. On demand.

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit four hours.

300 Scientific Terminology (2)
Designed to meet the needs of nonlanguage students. Origin and derivation of English words in common scientific usage. On demand.

301 Greek Art and Archaeology (3)
A study of the development of art and archaeology from the Minoan-Mycenaean period through the age of classical Greece. On demand.

302 Etruscan and Roman Art and Archaeology (3)
The development of Etruscan and Roman art and archaeology including a brief survey of the Hellenistic period. On demand.

310 The Greco-Roman World (3)
The history, culture, and lifestyles of the ancient Greeks and Romans. On demand. May be registered as History 310.

395 Greek and Roman Tragedy in Translation (3)
A study of the origin of tragedy and its dramatic and philosophical development in the works of Aeschylus, Sophocles, Euripides, and Seneca. On demand. May be registered as English 395.

396 Classical Mythology (3)
A study of the origins and meaning of Greek and Roman myths, their importance for understanding ancient culture, and their influence on later literature and art. On demand.

397 Greek and Roman Comedy in Translation (3)
A study of the origins, development, and changes in comedy as seen in the works of Aristophanes, Menander, Plautus, and Terence. On demand.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.

FOREIGN LANGUAGE

101r, 102r Elementary Foreign Language (4,4).
Basic Grammar, elementary reading, (and conversation for a modern spoken language), 101 fall/102 spring. On demand. Student should consult department regarding use in satisfying University foreign language requirement.

213r, 214r Intermediate Foreign Language (3,3).
Intermediate foreign language study with grammar review and extensive reading, (conversation for a modern spoken language), 213 fall/214 spring. On demand. Student should consult department regarding use in satisfying University foreign language requirement.

French

Foreign Languages: French (B.A.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses other than French: one from humanities, one from fine arts, and one from either (3 hours each)

Category C: 2 approved behavioral or social science courses (6 hours)

Category D: 1 approved physical or natural science course with laboratory (4 hours)

Category F: 1 approved mathematics course (3 hours)

Category G: 1 approved perspectives course other than Foreign Languages (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major

24 hours French beyond second college year
2.0 average in all French courses

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours
Typical course of study in foreign languages:
French (B.A.)
(For a student with 2 years of high school French)

First Semester  Second Semester
FRESHMAN
General Education Category A 3 General Education Category A 3
General Education Category B 3 General Education Category B 3
French 211 3 French 212 3
Physical Education 021 1 Physical Education Activity 1
General Education Category C 3 General Education Category C 3
University Studies 101 3 Elective 3
Total 16 Total 16

SOPHOMORE
Advanced French 3 Advanced French 3
General Education Category B 3 General Education Category D 4
Electives 7 9
Total 16 Total 16

JUNIOR
2 Advanced French courses 6 Advanced French 3
General Education Category G 3 Electives 13
Total 16 Total 16

SENIOR
2 Advanced French Courses 6 Advanced French 3
Electives 10 13
Total 16 Total 16

TOTAL HOURS 128

FRENCH MINOR
18 hours in French including second year; 9 hours must be at the 300 level or above. Beginning language students must complete 23 hours. Minimum 2.0 average in the minor.

FRENCH COURSES

101, 102 Elementary French (4,4) Basic grammar, elementary reading, and conversation. 101 fall/102 spring semester.

199r Special Projects (1-4) Individual or group projects. On demand. Maximum credit 4 hours.

211, 212 Intermediate French for Conversation (3,3) Grammar review, intensive oral practice in French, limited readings. 211 fall/212 spring semester. Prerequisites: 101, 102 or 2 years high school French.

213, 214 Intermediate French for Reading (3,3) Grammar review, extensive reading in French with discussion in English. 213 fall/214 spring semester. Prerequisites: 101, 102 or 2 years high school French.

311, 312 Composition and Conversation (3,3) Selections from French literature, topics of current interest and articles from French newspapers and magazines may be used as a basis for discussions and compositions. 311 fall/312 spring semester on demand. Prerequisites: 211, 212 or approval of the department.

321 Advanced French Grammar (3) Special problems in syntax, illustrative reading, composition. On demand. Prerequisites: 211, 212 or approval of the department.

323 Introduction to French Culture (3) The fine arts, patterns of living, and total life-style of the French people approached through their language. Geographical and historical backgrounds included. On demand. Prerequisites: 211, 212 or approval of the department.

331, 332 Introduction to French Literature (3,3) Representative works from the beginning to 1800 with attention to cultural, political, and social background. Sequel from 1800 to the present. 331 fall/332 spring semester. On demand. Prerequisites: 211, 212 or approval of the department.

401r Special Topics in French Language or Literature (2-3) A reading course with emphasis on a field, period, or author, or on a topic of philology or linguistics, or on teaching methods. On demand. Special arrangement with the head of the department and the instructor. Prerequisites: 211, 212 or approval of the department.

407 Seventeenth Century French Literature (3) On demand. Prerequisites: 211, 212 or approval of the department.

409 Eighteenth Century French Literature (3) On demand. Prerequisites: 211, 212 or approval of the department.

411 Nineteenth Century French Literature (3) On demand. Prerequisites: 211, 212 or approval of the department.

413 Twentieth Century French Literature (3) On demand. Prerequisites: 211, 212 or approval of the department.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms) On demand. See “Departmental Honors,” page 27.

497r Research (1-4) On demand.

498r Individual Studies (1-4) On demand.

499r Group Studies (1-4) On demand.

German

101, 102 Elementary German (4,4) Basic grammar, elementary reading, and conversation. 101 fall/102 spring semester.

199r Special Projects (1-4) Individual or group projects. On demand. Maximum credit four hours.

211, 212 Intermediate German for Conversation (3,3) Grammar review, intensive oral practice in German, limited readings. 211 fall/212 spring semester. On demand. Prerequisites: 101, 102 or two years high school German.

213, 214 Intermediate German for Reading (3,3) Grammar review, extensive reading in German with discussion in English. 213 fall/214 spring semester. On demand. Prerequisites: 101, 102 or two years high school German.

215 Intermediate German for Writing (3) Grammar review, composition. On demand. Prerequisites: 101, 102 or two years high school German.

497r Research (1-4) On demand.

498r Individual Studies (1-4) On demand.

499r Group Studies (1-4) On demand.
Greek

Foreign Languages: Greek and Latin (B.A.)

**General Education** (see pages 22-23 for list of approved courses)
- **Category A:** 2 approved courses in written communication in the English language (6 hours)
- **Category B:** 3 approved courses other than Greek and Latin: one from humanities, one from fine arts, and one from either (3 hours each)
- **Category C:** 2 approved behavioral or social science courses (6 hours)
- **Category D:** 1 approved physical or natural science course with laboratory (4 hours)
- **Category F:** 1 approved mathematics course (3 hours)
- **Category G:** 1 approved perspectives course other than Foreign Languages (3 hours)

The Freshman Seminar
- Health and Physical Education 021 plus one additional semester physical education activity
- Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

**Major**
- 18 hours Latin beyond 101, 102
- 12 hours Greek
- 2.0 average in all Greek and Latin courses
- Minimum of 30 hours of 300 and 400 level courses
- Electives to complete 128 hours

**Typical course of study for foreign languages:**
**Greek and Latin (B.A.)**

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**TOTAL HOURS 128**

**GREEK MINOR**
- 21 hours of Greek with at least 9 hours at the 300 level or above.
- Minimum 2.0 average in the minor.

**GREEK COURSES**
- **101, 102 Elementary Greek (3,3)**
  Elements of the Greek language. Reading of Greek prose. 101 fall/102 spring semester.
- **199r Special Projects (1-4)**
  On demand.
- **203 Greek Epic (3)**
  Readings from the Iliad and the Odyssey of Homer. On demand.
- **310 Readings of Greek Literature (3)**
  A study of the development of Greek literature with selections from representative authors. On demand.
- **312 Advanced Greek Grammar and Composition (3)**
  On demand.
- **350r Greek Prose (3)**
  Greek historians, Attic orators, and Greek philosophers considered in different semesters. On demand. Maximum credit nine hours.
- **351r Greek Poetry (3)**
  Greek tragedy, comedy, and lyric poetry considered in different semesters. On demand. Maximum credit nine hours.
- **425r Special Topics in Greek Literature (2)**
  Readings in a specific author, genre, or period. On demand.
- **495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)**
  On demand. See "Departmental Honors," page 27.
- **497r Research (1-4)**
  On demand.
- **498r Individual Studies (1-4)**
  On demand.
- **499r Group Studies (1-4)**
  On demand.

**Italian**

- **101, 102 Elementary Italian (4,4)**
  Basic grammar, elementary reading, and conversation. On demand.
- **211,212 Intermediate Italian for Conversation (3,3)**
  Grammar review, intensive oral practice in Italian, limited readings. On demand. Prerequisites: 101, 102 or 2 years high school Italian.

**Latin**

Foreign Languages: Latin (B.A.)

**General Education** (see pages 22-23 for list of approved courses)
- **Category A:** 2 approved courses in written communication in the English language (6 hours)
- **Category B:** 3 approved courses other than Classics and Latin: one from humanities, one from fine arts, and one from either (3 hours each)
- **Category C:** 2 approved behavioral or social science courses (6 hours)
- **Category D:** 1 approved physical or natural science course with laboratory (4 hours)
- **Category F:** 1 approved mathematics course (3 hours)
- **Category G:** 1 approved perspectives course other than Foreign Languages (3 hours)

The Freshman Seminar
- Health and Physical Education 021 plus one additional semester physical education activity
Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

**Major**

21 hours Latin beyond 101, 102; 9 hours from Classics 310, 395, 396, 397
2.0 average in all Latin courses
Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical course of study for foreign languages:
Latin (B.A.)

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<td><strong>16</strong></td>
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**TOTAL HOURS 128**

**LATIN MINOR**

21 hours of Latin with at least 9 hours at the 300 level or above. Minimum 2.0 average in the minor.

**LATIN COURSES**

101, 102 Elementary Latin (3,3)
Elements of the language. Reading of Latin prose. 101 fall/102 spring semester.

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit 4 hours.

201 Intermediate Latin (3)
Intensive review of basic Latin grammar; selections from Cicero, Livy, Pliny, and Ovid. Fall semester. Prerequisite: Latin 101, 102 or 2 years of high school Latin. At the discretion of the department properly qualified students with only 1 year of high school Latin may be admitted.

202 Intermediate Latin (3)
Readings from Vergil's Aeneid. Spring semester. Prerequisite: Latin 201.

207 Cicero (3)
Selected readings from the Letters and Orationes of Cicero. On demand.

208 Horace (3)
Selections from the Odes and Epodes. On demand.

310 Readings in Latin Literature (3)
A study of the development of Latin literature with selections from representative authors. On demand.

312 Latin Prose and Composition (3)
On demand.

350r Latin Prose (3)
Sallust, Caesar, Tacitus, Seneca, and Petronius considered in different semesters. On demand. Maximum credit 9 hours.

351r Latin Poetry (3)
Latin lyric poetry, Roman comedy, Latin satire, and Lucretius considered in different semesters. On demand. Maximum credit 9 hours.

425r Special Topics in Latin Literature (2)
Readings in a specific author, genre, or period. On demand.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See “Departmental Honors,” page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.

**Modern Languages**

100 A Profile of French Culture (3)
A humanistic view of the patterns of living and total life-style of the French people with special attention to their art, music, and literature (in translation). Geographical, historical, and linguistic backgrounds included. On demand. No foreign language credit.

110 A Profile of German Culture (3)
A humanistic view of the patterns of living and total life-style of the German people with special attention to their art, music, and literature (in translation). Geographical, historical, and linguistic backgrounds included. On demand. No foreign language credit.

120 A Profile of Hispanic Culture (3)
A humanistic view of the patterns of living and total life-style of the Hispanic people with special attention to their art, music, and literature (in translation). Geographical, historical, and linguistic backgrounds included. On demand. No foreign language credit.

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit 4 hours. No foreign language credit.

201 Modern French & German Literature: Alienation through Conflict (3)
French and German literature in translation; the study of dramatic and fictional works which reveal aspects of man's attempt to understand and explain his world. On demand. No foreign language credit.

202 Language, Literature, and the Exile Experience (3)
A literary and linguistic view of the exile experience. Selected readings from the literary outputs of exile communities in Europe and the U.S. Studies in language preservation and rejection in exiled communities. On demand. No foreign language credit.

300 Masterpieces of French Literature in Translation (3)
Study of representative works from French literature in relation to their cultural context. On demand. No foreign language credit.

301 French Women Writers in Translation (3)
Contributions of French women writers to the social, economic and political institutions of French culture. Readings from several disciplines. Topics studied are gender roles, systems of authority, masculine/feminine representations of reality, and the concept of "feminine" writing. On demand. No foreign language credit.
Spanish

Foreign Languages: Spanish (B.A.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language

Category B: 3 approved courses other than Spanish: one from humanities, one from fine arts, and one from either (3 hours each)

Category C: 2 approved behavioral or social science courses (6 hours)

Category D: 1 approved physical or natural science course with laboratory (4 hours)

Category F: 1 approved mathematics course (3 hours)

Category G: 1 approved perspectives course other than Foreign Languages (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major

24 hours Spanish beyond second college year

2.0 average in all Spanish courses

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

Typical course of study in foreign languages:

Spanish (B.A.)

(For a student with 2 years of high school Spanish)

<table>
<thead>
<tr>
<th>First Semester</th>
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SOPHOMORE

Advanced Spanish 3 | Advanced Spanish 3 |
General Education Category B 3 | General Education Category D 4 |
General Education Category F 3 | Electives 9 |
Electives 7 |
Total 16 | Total 16 |

JUNIOR

2 Advanced Spanish Courses 6 | Advanced Spanish 3 |
General Education Category G 3 | Electives 13 |
Electives 7 |
Total 16 | Total 16 |

SENIOR

2 Advanced Spanish Courses 6 | Advanced Spanish 3 |
Electives 10 | Electives 13 |
Total 16 | Total 16 |

TOTAL HOURS 128

SPANISH MINOR

18 hours in Spanish including second year; 9 hours must be at the 300 level or above. Beginning language students must complete 23 hours. Minimum 2.0 average in the minor.

SPANISH COURSES

101, 102 Elementary Spanish (4,4)

Basic grammar, elementary reading, and conversation. 101 fall/102 spring semester.

199r Special Projects (1-4)

Individual or group projects. On demand. Maximum credit 4 hours.

211, 212 Intermediate Spanish for Conversation (3,3)

Grammar review, intensive oral practice in Spanish, limited readings. 211 fall/212 spring semester. Prerequisites: 101, 102 or 2 years high school Spanish.

213, 214 Intermediate Spanish for Reading (3,3)

Grammar review, extensive reading in Spanish with discussion in English. 213 fall/214 spring semester. Prerequisites: 101, 102 or 2 years high school Spanish.

311, 312 Composition and Conversation (3,3)

Selections from Spanish literature, topics of current interest, and articles from Spanish newspapers and magazines may be used as a basis for discussions and compositions. 311 fall/312 spring semester. On demand. Prerequisites: 211, 212 or approval of the department.

321, 322 Advanced Spanish Grammar (3,3)

Special problems in syntax, illustrative reading, and composition. 321 fall/322 spring semester. On demand. Prerequisites: 211, 212 or approval of the department.

323 Introduction to Spanish Culture (3)

The fine arts, patterns of living, and total life-style of the Spanish people approached through their language. Geographical and historical backgrounds included. On demand. Prerequisites: 211, 212 or approval of the department.

325 Introduction to Spanish-American Culture (3)

The fine arts, patterns of living, and total life-style of the Spanish-American people approached through their language. Geographical and historical backgrounds included. On demand. Prerequisites: 211, 212 or approval of the department.

331 Masterpieces of Spanish Literature (3)

Readings of representative works from the earliest epic and lyric poetry to the modern novel and theater with attention to cultural, political, and social background. On demand. Prerequisites: 211, 212 or approval of the department.

400r Topics in Spanish Literature (3)

Study of topics such as Spanish literature of the Golden Age, 18th and 19th century Spanish literature, The Generation of 1898, and contemporary Spanish literature. On demand. Prerequisites: 211, 212 or approval of the department.
401r Special Topics in Spanish-American Literature (2-3)
A reading course with emphasis on a field, period, or author, or on a topic of philology or linguistics. On demand. By special arrangement with the department head and the instructor. Prerequisites: 211, 212 or approval of the department.

402r Topics in Spanish-American Literature (3)
Study of topics such as Spanish-American novel, Spanish-American theater and poetry, and Spanish-American essay. On demand. Prerequisites: 211, 212 or approval of the department.

409r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.

Geosciences
Professor Perfetti, Head

The Geosciences Department offers the Bachelor of Science degree with a major in geology and participates in programs leading to the Bachelor of Science degree in education and environmental studies. The department also offers minors in geology and geography.

Geology (B.S.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses other than geography (6 hours)
Category D: 1 approved physical or natural science course other than geology with laboratory (4 hours; approved related courses below will apply)
Category F: 1 approved mathematics course (3 hours; approved related courses below will apply)
Category G: 1 approved perspectives course (3 hours)

Health and Physical Education 021 plus one additional semester of physical education activity

Major and related courses
Geology 111, 112, 303, 321, 330, 341, 342, 351, 352, 404, 480, 490, plus two electives in Geosciences including one course at the 400 level
Biology D121, 122
Chemistry D121, 122
Physics D103, 230, 231
Mathematics F150
English 278
Computer Science 110 or 118
Recommended: Environmental Studies 150
2.0 average in all geology courses

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours
Field work
Geology majors are encouraged to enroll in a field geology course during the summer following the junior or senior year. In the latter case, graduation will be postponed until August and the requirement that the last 30 hours be completed at UTC will be waived. It is still required, however, that at least 30 hours be completed at UTC.

Through an agreement with Memphis State University, UTC students are accepted preferentially for Memphis State's Geology Field Camp (Geology 4622, 6 hours credit) held each summer in the Black Hills of South Dakota. Additional information and application forms are available from the Geosciences Department.

Graduate study preparation
Most graduate schools in geology require a minimum of 1 year of calculus, 1 year of calculus-based physics, and a good background in courses from biology, chemistry, and computer science. Therefore, students intending to pursue a master's degree in geology should take those courses (beyond UTC's major requirements) that will best prepare them for the graduate program of their choice. It is strongly recommended that the prospective graduate student also take Geology 497r.

Typical courses of study in geology (B.S.)
Geology (B.S.)

First Semester Second Semester
FRESHMAN
Geology 111 4 Geology 112 4
University Studies 101 3 Chemistry 122 3
General Education Category A 3 General Education Category A 3
Chemistry D121 4 Physical Education Category A 1
Physical Education 021 1 General Education Category B 3
Total 15 Total 15

SOPHOMORE
General Education Category C 3 English 278 3
Biology D121 4 Biology 122 4
Physics D103 or 230 4 Physics 104 or 231 4
Mathematics F150* 4 General Education Category C 3
Electives 2
Total 15 Total 16

JUNIOR
Geology 303 4 Geology 341 4
General Education Category B 3 Geology 321 4
Computer Science 110 or 118 3 General Education Category B 3
Geology 341 4 Geology 330 3
General Education Category C 3 Geology Elective 3
Total 17 Total 17

SENIOR
Geology 351 4 Geology 352 4
Geology 400 level 4 Geology 404 3
Environmental Studies 150 4 Geology 480 1
Electives 5 Geology 490 2
Electives 6
Total 17 Total 16

TOTAL HOURS 128
*Mathematics 106, 135, and F145 may be recommended to precede Mathematics F150, depending on preparation of the individual student.

GEOLOGY & GEOGRAPHY MINORS
Geology:
18 hours of geology including 111, 112, and 206. At least 8 hours 300 level or above.
Minimum 2.0 average in the minor.

Geography:
18 hours of geography including 101 and 104 and at least 9 hours 300 level or above. Minimum 2.0 average in the minor.
GEOLOGY COURSES

100 Earth Science (4)
An interdisciplinary approach to the planet earth: an overview of the origin and evolution of the earth earth's interior and surface features, as well as the oceans and atmosphere. Explores the advances of modern technology in the confirmation of the plate tectonic theory and a look toward Earth's future. On demand. Lecture 3 hours, laboratory 2 hours.

111 Physical Geology (4)
Introduction to geology; age and origin of the earth; earth materials, processes, and resultant structures. Field trips. Every semester. Lecture 3 hours, laboratory 2 hours. Prerequisite: 2 years of high school algebra or Mathematics 106.

III Historical Geology (4)
Origin of the earth and its geologic history, the concept of geologic time, the fossil record. Spring semester. Lecture 3 hours, laboratory 2 hours. Prerequisite: 111 or permission of instructor.

199r Special Projects (1-4)
Individual or group projects. On demand. Prerequisites: consent of instructor, receipt of an acceptable proposal, and permission of the department head. Graded on a satisfactory/no credit basis. Maximum credit 4 hours.

225 Oceanography (3)
Chemical and physical properties of sea water. Causes and patterns of oceanic circulation. Life zones in the oceans and factors delimiting them. Origin and physiography of ocean basins. Mineral and energy resources of the oceans. Spring semester. May be registered as Environmental Studies 225.

226 Oceanography Laboratory (1)

303 Sedimentary Rocks and Stratigraphy (4)
Introduction to the principles of sedimentary rock classification and stratigraphic correlation with an emphasis on the classic stratigraphy of the U.S.; the facies concept; correlation, and paleogeographic reconstruction techniques. Field trips. Fall semester. Lecture 3 hours, laboratory 3 hours. Prerequisite: 112.

307 Geology of Tennessee (3)
Geologic resources, structure, and history of Tennessee and adjacent areas. Lecture and field trips. On demand. Prerequisite: a previous course in geology.

321 Invertebrate Paleontology (4)
Characteristics of the fossil record, centering on the invertebrate animals; principles of taxonomy and population analysis; interpretation of faunal assemblages; concept of biostratigraphy. Laboratory work centers on the morphology and time range of the major fossil groups. Field trips. Spring semester alternate even years. Lecture 3 hours, laboratory 3 hours. Prerequisite: 112.

330 Sedimentation (4)
Recognition of modern environments such as tidal flat and beach and stream channel deposits in ancient rocks. Mapping of critical criteria in ancient deposits in outcrop and from well logs to interpret environments of deposition. Extensive field work. Spring semester. Lecture 3 hours, laboratory 3 hours. Prerequisite: 303.

341 Mineralogy (4)
Crystallography, physical properties, and geochemistry of minerals and their occurrence and classification in natural rocks. Fall semester alternate odd years. Lecture 3 hours, laboratory 3 hours. Prerequisite: 111. Pre- or corequisite: Chemistry 121.

342 Petrology (4)
Study of igneous and metamorphic rocks, their classification and their geological environments of formation. Field trips on weekends. Spring semester. Lecture 3 hours, laboratory 3 hours. Prerequisite: 341.

351 Field Methods and Structure I (4)
Instruments and methods of geologic mapping, local stratigraphic studies along with the preparation of geologic maps and reports. Fall semester. Variable lecture and laboratory time. Pre- or corequisites: 111 and 342.

352 Field Methods and Structure II (4)
Nature, classification, and genesis of geologic structure with emphasis on field relationships. Spring semester. Variable lecture and laboratory time. Prerequisite: 351.

404 Geologic Mapping (3)
Mapping of sedimentary and crystalline rocks with approximately equal emphasis. Techniques of both small-scale and large-scale mapping of a variety of rock types and structural features. Requires drafting, report writing, and weekend field work. Spring semester alternate odd years. Prerequisites: Geology 352 or Environmental Studies 340 and approval of instructor.

405 Principles of Geochemistry (4)
Origin and distribution of the elements. Applications of chemistry to geological problems. Spring semester alternate odd years. Lecture 3 hours, laboratory and recitation 3 hours. Prerequisites: Geology 342 and 1 year of college chemistry.

406 Lithology: Study of Rocks (4)
Identification and study of common rocks and their plate tectonic environments. Lecture 3 hours, laboratory 2 hours. Prerequisite: Consent of instructor.

407 The Dynamic Earth (3)
History, theory, and application of plate tectonics to explain the dynamic actions of the earth. On demand. Formerly Geology 206. Prerequisite: Geology 111 or approval of instructor.

431 Sedimentary Petrology (3)
Genesis of sedimentary rock clasts including arkose, graywacke, orthoquartzite, and carbonates. Microscopic analysis and field studies. Fall semester alternate even years. Variable lecture and laboratory time dependent on topic. Prerequisite: 330.

436 Fossil Fuels (3)
Stratigraphic and sedimentological study of fossil fuel environments, especially of the Cumberland Plateau; and the scientific basis for fossil fuel exploration, including the reading and interpretation of gamma ray well logs and the preparation of panel diagrams, structure contour maps and isopach maps.

445 Hydrology (3)

450 Economic Geology (4)
The origin, distribution, and classification of mineral deposits formed by igneous, sedimentary, and metamorphic rocks, as well as secondary processes. Introduction to methods of exploration and development. Spring semester alternate even years. Lecture 3 hours, laboratory 3 hours. Prerequisites: 342 and Chemistry 122.

480 Geology Seminar (1)
Seminar and discussion of topics of current interest in the earth sciences. Student presentations required. Spring semester. Prerequisite: Upper level or graduate standing.

490 Senior Seminar (2)
A culminating senior experience giving students an opportunity to exercise judgment in solving geological problems. Spring semester. Prerequisite: consent of instructor.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. Graded on a satisfactory/no credit basis. See "Departmental Honors," page 27.

496r Geology Field Camp (1-6)
A field methods experience (the application of theory and techniques to field problems). Oh demand. Prerequisites: introductory course in the natural sciences, senior standing and approval of instructor.

497r Research (1-4)
On demand. Consent of instructor, receipt of an acceptable proposal, and permission of the department head. Graded on a satisfactory/no credit basis. Maximum of 4 hours.
498r Individual Studies (1-4)  
Spring semester. Consent of instructor, receipt of an acceptable proposal, and permission of the department head. Graded on a satisfactory/no credit basis. Maximum of 4 hours.

499r Group Studies (1-4)  
Fall semester. Consent of instructor. Maximum of 4 hours.

GEOGRAPHY COURSES

101 Physical Geography (3)  
The physical environment with emphasis on processes that influence the distribution and pattern of landforms, water, climate, vegetation, and soil. Fall semester.

103 World Geography (3)  
Description and analysis of selected world regions, their internal characteristics and problems, and the nature of their interrelationships in a global context.

104 Cultural Geography (3)  
Human perception of environment, rural/urban behavior, territoriality, prejudicial use of space, spatial diffusion, migration, and spatial patterns of selected cultural activities. Every semester.

199r Special Projects (1-4)  
Individual or group projects. On demand. Graded on a satisfactory/no credit basis. Consent of instructor, receipt of an acceptable proposal, and permission of the department head. Maximum of 4 hours.

206 Atmosphere, Climatology, and Mankind (3)  
The atmosphere about us and its interactions with human society. Atmospheric origin, composition, moisture, temperature, general circulation, and pollution problems. Jet streams and variations of weather and climate over time and space. Fall semester alternate even years.

221 Maps and Map Interpretation (3)  
Nature and use of maps, with particular reference to the construction of map projections. Use of special maps and the interpretation of aerial photographs. Spring semester alternate odd years.

250 World Resources (3)  
Location, utilization, production, consumption, and significance of resources to society. Introduction to the vast, interlocking network of activities that produce and affect the world's use and consumption of resources. Spring semester alternate odd years. Lecture 3 hours. May be registered as Environmental Studies 250.

403 Geography of North America (3)  
Topical and regional study of the physical and cultural geography of North America. Prerequisite: Geography 103 or approval of instructor.

405 Geography of Asia (3)  
Introduction to the physical and cultural geography of Asia, excluding the Soviet Union. Prerequisite: Geography 103.

407 Environmental Conservation (3)  
Theories, methods, and practices of environmental management and resource utilization. Emphasis on soil, forest, water, mineral, and human resources. Spring semester.

409 Economic Geography (3)  
Spatial influences on economic behavior, analysis of the location and spatial structure of world economic activities. Fall semester.

415 Urban Geography: Urban Land Development & Redevelopment (3)  
Settlement of the land, and use, misuse, and reuse of urban land in a changing society. On demand. May be registered as Sociology 415.

465 Remote Sensing and Imagery Analysis (3)  
Principles of aerial and satellite photography and infra-red, multispectral, and microwave sensing. Interpretation of remotely sensed data, including application to problems in a variety of environmental sciences. On demand. Lecture 2 hours, laboratory 2 hours. Prerequisites: senior standing and approval of instructor.

466 Geographic Information Systems (3)  
Introduction to fundamental principles of geographic information systems (GIS). Applications, data structures and basic functions of GIS. GIS computer programs are used to demonstrate basic GIS functions. Prerequisite: senior standing or approval of instructor.

480 Geography Seminar (1)  
Seminar and discussion of topics of current interest in the earth sciences. Student presentations required. On demand. Prerequisite: upper level or graduate standing.

496r Geography Field Camp (1-6)  
A field methods experience (the application of theory and techniques to field problems). On demand. Prerequisites: introductory course in the natural sciences, senior standing and approval of instructor.

497r Research (1-4)  
On demand. Consent of instructor, receipt of an acceptable proposal, and permission of the department head. Graded on a satisfactory/no credit basis. Maximum of 4 hours.

498r Individual Studies (1-4)  
On demand. Consent of instructor, receipt of an acceptable proposal, and permission of the department head. Graded on a satisfactory/no credit basis. Maximum of 4 hours.

499r Group Studies (1-4)  
On demand. Consent of instructor. Maximum of 4 hours.

German

See Foreign Languages and Literatures.

Greek

See Foreign Languages and Literatures.

Health, Physical Education and Recreation

See School of Education.

History

Associate Professor Burhenn, Interim Head

History (B.A.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses other than history; one from humanities, one from fine arts, and one from either (3 hours each)

Category C: 2 approved behavioral or social science courses other than history (6 hours)

Category D: 1 approved physical or natural science course with laboratory (4 hours)

Category F: 1 approved mathematics course (3 hours)

Category G: 1 approved perspectives course other than history (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity

Foreign language through second college year

Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major

36 hours in history including 101, 102, and 301; no more than one-half of the foreign language through second college year

Health and Physical Education 021 plus one additional semester physical education

Electives to complete 128 hours

Minimum of 30 hours of 300 and 400 level courses

2.0 average in all history courses

Typical course of study in history (B.A.)

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<th>Second Semester</th>
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<td>History 101</td>
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<td>Physical Education Activity 1</td>
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<td>Total 16-17</td>
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| SOPHOMORE       |                 |
| History 203    | History 204     |
| Foreign Language 3 | Foreign Language 3 |
| General Education Category C 3 | General Education Category B 3 |
| General Education Category F 3 | General Education Category D 4 |
| Elective 3     | Elective 3     |
| Total 15       | Total 16       |

| JUNIOR          |                 |
| History 301 or Elective 3 | History 301 or Elective 3 |
| History Elective 3       | History Elective 3 |
| General Education Category G 3 | General Education Category B 3 |
| Electives 6              | Electives 9     |
| Total 15                | Total 18       |

| SENIOR          |                 |
| History Elective 3 | History 401 or Elective 3 |
| History Elective 3 | History Elective 3 |
| Electives 9-10     | Electives 9-10   |
| Total 15-16        | Total 15-16     |

TOTAL HOURS 128

Some of the electives should be chosen to complete the minor requirement for majors. Students should make certain they select enough electives to complete 128 hours.

HISTORY MINORS

A minor in American history requires History 203-204 (6 hours) plus an additional 12 hours in American history at the 300-400 level (total of 18 hours). A minor in world history (European or non-Western history) requires History 101,102, or 208 (6 hours) plus an additional 12 hours in European or non-Western history at the 300-400 level (total of 18 hours).

Minimum 2.0 average in the minor

HISTORY COURSES

101, 102 Emergence of the Modern World (3, 3)
A survey of the processes, ideas, and events that have shaped our contemporary world, emphasizing modernization and industrialization; imperialism, nationalism, and competing ideologies in a world setting. First semester concentrating on the period from approximately 1300-1800; second semester extending from 1800 to the present. Every semester.

114 Heroes and Villains (3)
A biographical approach to world history. Personalities and their roles in shaping the modern world, to be selected from a variety of fields of human activity: politics, science, philosophy, religion, economics, war, etc. Attention given to interpretations concerning the role of individuals in history. Every semester.

120r Historical Themes (3)
An analysis of some topic of contemporary significance from an historical perspective. The theme under study to be viewed in a number of historical settings to add insights to our understanding of the present. On demand.

199r Special Projects (1-4)
Individual or group projects. Every semester. Maximum credit 4 hours.

203, 204 United States History (3, 3)
A survey of American history; a brief review of early colonial period; more intensive study beginning with 1763; special attention given to national leaders, their ideas and contributions, as well as to the main currents and developments in American life. First semester study extending to 1865. Every semester.

208 Introduction to Asian Civilizations: China and Japan (3)
A survey of the major trends of Chinese and Japanese history. Emphasis placed on traditional cultural values, periods of power and greatness, problems of modernization, and recent developments. Students should gain perspective on current conditions in China and Japan. On demand.

210 A History of Protestantism (3)
The origins and development of Protestant doctrines, church structures, political relationships and social teachings; from 1500 through the early twentieth century. On demand.

215, 216 Latin American History (3, 3)
A survey of Latin American history from the time of discovery to the present, emphasizing economic, political, and social institutions as well as cultural developments; the first semester, the colonial period (to about 1825); the second semester, since independence. On demand.

221 Science, Technology, and Society in the Industrial Age (3)
An historical examination of the impact of scientific and technological change in Western society since the advent of the Industrial Revolution. On demand.

301 Seminars in History (3)
An introduction to historical interpretation and analysis through an examination of specific topics in American, European, or non-Western history. Required of both those majoring in history or secondary education in history, but other students welcome. Every semester.

310 The Greco-Roman World (3)
The history, culture, and life-styles of the ancient Greeks and Romans. On demand. May be registered as Classics 310.

311, 312 Medieval Europe (3, 3)
Europe from the fall of the Roman Empire to the Italian Renaissance; the first semester emphasizing the formation of medieval institutions to c. 1200; the second semester stressing the shattering of the medieval synthesis. 311 fall/312 spring semester alternate years.

313 The Age of the Renaissance (3)
Economic, social, artistic, and political developments, 1300-1500; Italian Humanism; Christian Humanism; and fermentation in the Church. Fall semester alternate years.
314 The Age of the Reformation (3)
Religious, political, social, and economic factors involved in the Protestant and Catholic Reformation in the 16th century. Spring semester alternate years.

315 Early Modern Europe, 1600-1750 (3)
Religious, political, economic, and social development in this period of contradiction and intellectual ferment; Puritans, counter-Reformation; Constitutionalism, Absolutism; Scientific Revolution, the Baroque in the arts. On demand.

317 The Era of the French Revolution and Napoleon (3)
Developments leading to the French Revolution and the fall of the monarchy, the noble resurgence and the phases of the revolution; accomplishments and failures of the revolution; Napoleon Bonaparte as heir to the Bourbons and the Enlightenment and Revolution, and as a social engineer. Spring semester alternate years.

318 Europe in the Nineteenth Century (3)
Europe from the creation of the Napoleonic Empire to the outbreak of World War I; the development and failure of the Congress System; the operation of trie balance of power and international relations; national consolidation and domestic political developments, the rise of imperialism, and the spread of industrial society. Fall semester alternate years.

319 Europe in the Twentieth Century (3)
Political, economic, and social development of the European states from the outbreak of World War I to the present. Special attention given to the problems of world wars and reconstruction, with development of conflicting ideologies, the impact of worldwide depression, the decline of European colonial systems, and the diplomacy of the cold war. Spring semester alternate years.

323, 324 History of England (3, 3)
The history of Britain from the earliest times to the present; the first semester emphasizing constitutional and institutional developments to 1660; the second semester, the growth of political democracy, the British Empire, economic and social change. 323 fall/324 spring semester alternate years.

325, 326 History of the British Empire and Commonwealth (3, 3)
A study of the rise and fall of the first British Empire, social reform and the rise of opposition to imperialism, mid-Victorian Imperialism, the growth of the second British Empire, the origins of African and Asian nationalism, the impact of World Wars I and II, the emergence of the Commonwealth and colonial devolution. First semester to c. 1867. 325 fall/326 spring semester alternate years.

327 Russian History since 1800 (3)
Characteristics of Tsarist society in the 19th century, attempts to reform the nation, the revolutions of 1905 and 1917, and the Soviet system. Fall semester alternate years.

331 Colonial and Revolutionary America (3)
The colonial period of American history from the earliest settlements in North America to independence and the U.S. Constitution; the European background to colonization, colonial settlements, the development of colonial social, political, and economic institutions, and the causes, course, and consequences of the American Revolution. On demand.

332 Early National Period, 1789-1840 (3)
The Constitution and presidencies of George Washington and John Adams; the War of 1812 and the emergence of nationalism; rise of the frontier; Jeffersonian and Jacksonian democracy, emphasis on political, social, and economic developments that forged the new nation. On demand.

335 The Civil War and Reconstruction (3)
The Old South and the causes of the Civil War; the leaders; the chief political, military, and economic developments from the Compromise of 1850 to the end of Reconstruction. On demand.

336 The Gilded Age (3)
The United States from the end of the Civil War to 1900. On demand.

337 Progressive America: From TR to FDR (3)
An examination of the political, economic, cultural, and diplomatic forces that shaped America in the early 20th century; topics include progressivism, World War I, the roaring twenties, and the Great Depression. Fall semester alternate years.

338 Contemporary America Since 1945 (3)
An examination of political, economic, and social aspects of the recent past, including post-World War II readjustments, the Cold War, the Kennedy years, the Vietnam trauma, and the downfall of the "imperial presidency." Spring semester alternate years.

341 A History of the South (3)
The role of the South in the formation of the nation. Interpretations of the institutions and developments that made the South unique. On demand.

343 History of Tennessee (3)
A study of the political, economic, social, and cultural development of the state from the days of the Indians to the present. On demand.

346 Afro-American History (3)
A historical survey of Black Americans with some attention to African backgrounds; emphasis on the reaction of blacks to their experience in the New World. On demand.

350 War Through the Ages (3)
The evolution of war as an instrument of national policy and the effects of wars on the world balance of power. Treatment will be episodic, concentrating on the Persian and Peloponnesian Wars, the Punic Wars, the Hundred Years War, the Seven Years War, the Wars of the American and French Revolutions and Napoleon, and the World Wars of the 20th century. Fall or spring semester.

364 Traditional China: History and Culture (3)
A survey of Chinese history and culture prior to the impact of the West. Course readings provide a basic political and chronological orientation, but emphasis placed on literary and philosophical writings in translation, and on studies of the social structure of traditional Chinese society. On demand.

365 Traditional Japan: History and Culture (3)
A survey of traditional Japanese history and culture prior to the impact of the West. Course readings provide a basic political and chronological orientation, but emphasis placed on literary, cultural, and artistic achievements, and on studies of the social structure of traditional Japanese society. On demand.

368 East Asia in Modern Times (3)
East Asia since the mid-19th century and the effects of the West; the Opium War, modernization, the Chinese Revolution of 1911, Japanese expansion, Pearl Harbor and Hiroshima, Mao Tse-tung and the Chinese Communists. On demand.

369 China Since 1949 (3)
Examines the People's Republic of China from its founding in 1949 to the present. Both domestic developments and foreign affairs considered. Topics include: Mao Tse-tung, the Korean War, Great Leap Forward, the Cultural Revolution, and events since Mao's death in 1976. On demand.

370 The Middle East (3)
Background and setting of the modern Middle East; factors influencing Great Power strategy; Islam; rise and decline of the Ottoman Empire; imperialism and the breakup of the Ottoman Empire. On demand. Prerequisites: History 101, 102, or permission of instructor.

371 History of Subsaharan Africa to 1880 (3)
Geography and people of Africa; origin of traditional African societies; major Sudanic empires; Islamic impact on Africa; oral traditions; slave trade and its consequences; African artistic, musical, architectural, and religious traditions; Africa and the age of discovery; Swahili city states; African commerce and technology; major central and southern African political developments. On demand. Formerly 211.

372 History of Subsaharan Africa, 1880-Present (3)
Partition of Africa; ideological underpinnings of imperialism; growth of colonial systems and the African reaction; colonial devolution and independence; apartheid; the European colonial legacy; response of traditional African social and political structures to technological modernity; nature of modern African cultural trends and developments. On demand. Formerly 212.

385r National History (3)
A course dealing with a selected national history. On demand. Prerequisites: by special arrangement with the department head and instructor; specific prerequisites to be given when the topic is announced.
Interdisciplinary Studies

Professor Paul Gaston, Head

The Department of Interdisciplinary Studies coordinates a number of programs leading to baccalaureate degrees as well as several other nondegree programs. Because of their interdisciplinary nature, these programs draw upon the varied resources of a number of departments.

Degree programs: American Studies (B.A.); Humanities (B.A.). Nondegree program: University Studies.

American Studies

Professor John E. Trimpey, Coordinator

The American studies major is a Bachelor of Arts degree consisting of two parts: 1) a core curriculum required of all majors and 2) a concentration of study in one of the following areas: American literature, American history, philosophy and religion, political science, or sociology-anthropology. American studies courses are described below; all other required courses are described in the listing of each named department.

American Studies (B.A.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses; one from humanities, one from fine arts, and one from either (3 hours each; approved related courses below will apply)
Category C: 2 approved behavioral or social science courses (6 hours; approved related courses below will apply)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category F: 1 approved mathematics course (3 hours)
Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Foreign Language through second college year.

Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major

The following core courses are required of all majors:
American Studies 200: Introduction to American Studies
American Studies 400: American Studies Seminar
American Studies 499r: Topics in American Studies
Computer Science 110: Computer Information Systems I
Economics C101, C102: Principles of Economics
ED Curr. & Instr. 201: History of Education in U.S.
English 213, 214: American Literature
History B203, B204: United States History
Mathematics F210: Introductory Statistics
Philosophy 360: American Philosophy
Political Science C101: American Government
Religion B236: Religion in American Life
Sociology C151: Principles of Sociological Analysis

Human Ecology

See School of Education.

Humanities

See Interdisciplinary Studies.

Human Services

See College of Health and Human Services.
2 courses from:
Art 414, Major Trends in American Art; Music 212, America's Musical Heritage; Music 317, Survey of Jazz
Each major must complete 18 semester hours of approved courses in one of the following concentrations:

3. Philosophy and Religion: Philosophy 353; Religion 232, 337, 362, 467, 482, 491r
4. Political Science: 231, 234, 321, 322, 331, 333, 335, 433, 437, 439r

3 additional courses from the above list outside one's area of concentration
2.0 average in all American studies courses and also in all concentration courses

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

*Only when appropriate topics offered

**Typical course of study in American studies (B.A.)**

Below is a typical program of study for an American studies major. The specific courses, however, might vary from student to student since one’s area of concentration considerably affects course choices, especially for the junior and senior year.

**American Studies (B.A.): American history concentration**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Credits</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td>Second Semester</td>
<td></td>
</tr>
<tr>
<td>Economics C101</td>
<td>3</td>
<td>Economics C102</td>
<td>3</td>
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<tr>
<td>English A121</td>
<td>3</td>
<td>English A122</td>
<td>3</td>
</tr>
<tr>
<td>Political Science C101</td>
<td>3</td>
<td>MathF210</td>
<td>3</td>
</tr>
<tr>
<td>History B101</td>
<td>3</td>
<td>History B102</td>
<td>3</td>
</tr>
<tr>
<td>University Studies 101</td>
<td>3</td>
<td>General Education Category D</td>
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<tr>
<td>Physical Education 021</td>
<td>1</td>
<td>Physical Education Activity</td>
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</tr>
<tr>
<td>Fine Arts</td>
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**Sophomore**

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<tr>
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<td>American Literature 214</td>
<td>3</td>
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<tr>
<td>American Literature B203</td>
<td>3</td>
<td>American Literature B204</td>
<td>3</td>
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<tr>
<td>Religion B236</td>
<td>3</td>
<td>American Studies 200</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science 110</td>
<td>3</td>
<td>Music 212</td>
<td>3</td>
</tr>
<tr>
<td>French 101</td>
<td>4</td>
<td>French 102</td>
<td>4</td>
</tr>
<tr>
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**Junior**

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<tbody>
<tr>
<td>French 211</td>
<td>3</td>
<td>French 212</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy 360</td>
<td>3</td>
<td>History 335</td>
<td>3</td>
</tr>
<tr>
<td>ED Curr. &amp;. Instr. 201</td>
<td>3</td>
<td>Art 414</td>
<td>3</td>
</tr>
<tr>
<td>History 338</td>
<td>3</td>
<td>History 336</td>
<td>3</td>
</tr>
<tr>
<td>Sociology C151</td>
<td>3</td>
<td>General Education Category D</td>
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**Senior**

<table>
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<th>Course Description</th>
<th>Credits</th>
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<tr>
<td>American Studies 400</td>
<td>3</td>
<td>American Studies 499r</td>
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<tr>
<td>American Literature 332</td>
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<td>General Education Category G</td>
<td>3</td>
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<td>History 411</td>
<td>3</td>
<td>History 412</td>
<td>3</td>
</tr>
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<td>History 419</td>
<td>3</td>
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<td>History 419</td>
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<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>Total</td>
<td>15</td>
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</tbody>
</table>

**Total Hours: 128**

**American Studies Courses**

199r Special Projects (1-4)
Individual and group studies. On demand.

200 American Ideals in the Arts (3)
Specific works of art drawn from music, painting, architecture, theater, and literature considered in relation to each other and to American social and spiritual ideals. In addition to the instructor, specialists from various disciplines and the community will serve as guest lecturers. On demand.

400 American Studies Seminar (3)
Advanced level discussion of the interrelationship of methodology of an area of concentration to a broad cultural phenomenon within American life. On demand. Prerequisite: 200.

495r Departmental Honors (1-3) hours per term, 4 hours for two terms
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand. Prerequisite: approval of the coordinator and the department head.

498r Individual Studies (1-4)
On demand. Prerequisite: approval of the coordinator and the department head.

499r Topics in American Studies (1-4)
Special topics, themes, and studies. On demand.

**Humanities**

_Professor J. Trimpey, Coordinator_

The humanities generally comprise languages and literature, philosophy, religion, history, and the fine arts. With the approval of the Faculty Board for the Humanities, each major designs a program of study by selecting appropriate courses from those disciplines and from the humanities courses listed below.

**Humanities (B.A.)**

**General Education** (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category E: 1 approved mathematics course (3 hours)
Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity

Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average
Major and related courses

45 hours approved program of studies related to the culture of a time and place (America, Europe, or the non-Western world) or to a major idea or theme lending itself to analysis through the disciplines of the humanities. Focus on human experience as revealed in the religious, intellectual, artistic, linguistic, and social actions which characterize the chosen area of study. No more than 15 hours at 100-200 level and no more than 18 hours in any one discipline. Maximum of 15 of the 45 hours may be awarded by the Faculty Board for the Humanities for independent study on campus or for knowledge gained in travel or in work.

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical course of study in humanities (B.A.)

Because each student follows a unique program of study, it is impossible to outline a typical curriculum. Hypothetically, however, supposing a student chose to focus on Medieval and Renaissance Europe, the course of study might look like this.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td></td>
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<tr>
<td>General Education Category A</td>
<td>General Education Category A</td>
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<tr>
<td>University Studies 101</td>
<td>History B101</td>
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<tr>
<td>General Education Category F</td>
<td>General Education Category D</td>
</tr>
<tr>
<td>General Education Category C</td>
<td>General Education Category B</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>Foreign Language</td>
</tr>
<tr>
<td>Physical Education 021</td>
<td>Physical Education Activity</td>
</tr>
<tr>
<td><strong>TOTAL</strong> 16-17</td>
<td><strong>TOTAL</strong> 17-18</td>
</tr>
</tbody>
</table>

| **SOPHOMORE** |                 |
| Foreign Language 211 | Foreign Language 212 |
| English 203 | Theatre and Speech 211 |
| Art B214 | Art 215 |
| History 311 | History 312 |
| General Education Category C | Electives |
| General Education Category B | Philosophy 201 |
| **TOTAL** 18 | **TOTAL** 18 |

| **JUNIOR**   |                 |
| English 301 | English 303 |
| History 313 | English 304 |
| Foreign Language 331 | History 323 |
| Political Science 312 | Philosophy 351 |
| English 302 | General Education Category G |
| **TOTAL** 15 | **TOTAL** 15 |

| **SENIOR** |                 |
| Religion 355 | English 420 |
| Humanities 497r | Philosophy 230 |
| Humanities 498r | History 314 |
| Electives | Elective |
| **TOTAL** 15 | **TOTAL** 15 |

**HUMANITIES COURSES**

<table>
<thead>
<tr>
<th>199r Special Projects (1-4)</th>
<th>Individual and group studies. On demand.</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 The Vietnam Conflict: Then and Now (3)</td>
<td>An introduction to the Vietnam War, its development, its meaning, and its impact on the social, political, economic, and cultural identities of the U.S. and Vietnam.</td>
</tr>
<tr>
<td>490 Senior Educational Experience (3)</td>
<td>Thesis; oral and written presentation of progress required. The complete project will be presented for approval to the Faculty Board for the Humanities in the student’s final semester. On demand. Prerequisite: senior standing, final semester. May not be taken concurrently with 497r.</td>
</tr>
<tr>
<td>495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)</td>
<td>On demand. See &quot;Departmental Honors,&quot; page 27.</td>
</tr>
<tr>
<td>497r Research (1-4)</td>
<td>On demand. Prerequisite: approval of the coordinator and the department head.</td>
</tr>
<tr>
<td>498r Individual Studies (1-4)</td>
<td>On demand. Prerequisite: approval of the coordinator and the department head.</td>
</tr>
<tr>
<td>499r Group Studies (1-4)</td>
<td>On demand.</td>
</tr>
</tbody>
</table>

**INTERDISCIPLINARY STUDIES MINORS**

**Asian Studies**
18 hours selected from the following courses: Anthropology 333; English 233, 333r; Geography 405; History 208, 364, 365, 368, 369; Humanities 300; Religion 316r. Not more than 6 hours may count toward both the major and this minor.
Minimum 2.0 average in the minor.

**Black Studies**
18 hours selected from the following courses with at least 8 hours at the 300-400 level: Criminal Justice 315; History 346, 371, 372; Psychology 241, 424; Social Work 211; Sociology 305.
Minimum 2.0 average in the minor.

**Women's Studies**
Felicia Sturzer, Coordinator
18 hours required with at least 8 hours at the 300-400 level:
University Studies 200
6 hours from English 331, Modern Languages 301, University Studies 301
6 hours from Anthropology 411, Economics 417, Human Services 204, Psychology 451
Nursing 222
Minimum 2.0 average in the minor

**University Studies**

*Professor Paul L. Gaston, Head*

University Studies offers a variety of interdisciplinary courses and seminars which may be taken for elective credit or, when approved, may satisfy certain major or general education requirements.

| 100 Principles of Effective Study (3 hours institutional credit) | The study and development of reading and study skills that are required for college level study. Every semester. Credit not applicable toward any degree. Prerequisite: approval of the instructor. |
| 101 The Freshman Seminar (3) | An introduction to the nature of university education and a general orientation to the functions and resources of the University. Designed to help freshman adjust to the University, to develop a better understanding of the learning process, and to acquire basic academic survival skills, and to enrich their appreciation for the University's commitment to development of the intellect. Open only to students with fewer than 30 hours. Required of all students who enter UTC with fewer than 15 hours. Offered Fall and Spring semesters. |
| 199r Interdisciplinary Seminars (1-4) | Specific topics, themes, and subjects for which the interdisciplinary approach is especially useful. On demand. |
| 200 Introduction to Women's Studies (3) | An examination of human experience from a feminist perspective. An exploration of the ways in which women have been defined and have defined themselves. A multi-disciplinary teaching context with focus on women’s self identity, women's identity in families, and women's identity in society. Prerequisites: English 121, 122. |
210 Death and Life in Literature (3)
The study of themes of death and dying in imaginative literature, with emphasis on the correlation between fictional representations of death and of life, its contents and values; and on the connection between metaphors of death and approaches to textual interpretation. Primary texts include poetry, short stories, essays, novels, and plays. On demand.

301 Feminist Literary Criticism (3)
The history, theory and practice of feminist literary criticism studied in cultural context.

499r Interdisciplinary Seminars (1-4)
Specific topics, themes, and subjects for which the interdisciplinary approach is useful. On demand.

For current offerings see schedule of classes.

Mathematics
Professor Jayne, Interim Head

The Department of Mathematics offers two degree programs, the B.A. and the B.S. in applied mathematics.

The B.A. is the traditional liberal arts degree with a major in mathematics.

The B.S. in applied mathematics is a degree program designed to examine the growing influence of mathematics in business and industrial practices. The student must select a concentration in one of the following areas: actuarial science, computer science, corporate science, or systems science.

Students who graduate from UTC after December 1993 and who plan to teach at the secondary school level must meet new state certification requirements. These students need to consult with advisors in the School of Education and the Mathematics Department.

In addition to its own degree programs, the Department provides extensive support for other programs with mathematics requirements and offers courses which satisfy UTC General Education requirements.

All entering students except those transferring with appropriate mathematics credit or receiving advanced placement credit must take the Mathematics Placement Test. The UTC Mathematics Placement System assesses pre-college preparation and assigns placement levels which are used as part of the mandatory prerequisite system for lower level courses. Students with placement scores indicating deficiencies in high school level mathematics must complete developmental mathematics courses prior to enrollment in any college level courses. See the chapter on Academic Regulation for more details.

Applied Mathematics (B.S.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)

Category C: 2 approved behavioral or social science courses (6 hours; approved related courses below will apply)

Category D: 1 approved physical or natural science course with laboratory (4 hours)

Category F: 1 approved mathematics course (3 hours; courses below will apply)

Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

Mathematics (135 and/or F145)*, F150,160; 212, 245, 255, 295, 308,350,407, 408, 412, and either 414 or 424

9 hours of 300 and 400-level mathematics courses excluding 303, 307, 415, 416 (for computer science option, 3 hours must be 403)

Economics C101, C102; Computer Science 121

One of the following concentrations

1. Actuarial Science: courses from the School of Business Administration including Accounting 201,202,336; Finance 302,321; Finance 337; Marketing 450 or Economics 460; one elective from: Accounting 300,301; Finance 422, Economics 301, 324, 429.

2. Computer Science: Computer Science 122, 201, 251, 252, 312; Either Mathematics 418 or 428 (may not be used to satisfy mathematics elective course); two electives from Computer Science 300-400 level courses (excluding 340).

3. Corporate Science: Accounting 201, 202; Finance 302; Management 311; Economics 324, 429; Marketing 450 or Economics 460; one elective from business administration or economics 300-400 level courses (excluding Management 356).


A student may not elect both the corporate science and the actuarial science concentrations.

No more than 32 hours from the School of Business Administration may be credited toward the degree.

2.0 average in all mathematics courses and also in all 300,400-level mathematics courses

Minimum of 30 hours of 300 and 400 level mathematics courses

Electives to complete 128 hours

*Mathematics sequence may begin with 135 and/or F145 rather than 150 depending on preparation.

Typical courses of study in applied mathematics

Applied mathematics (B.S.): actuarial science concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 101 Category C</td>
<td>Economics 102 Category C</td>
</tr>
<tr>
<td>General Education Category A</td>
<td>General Education Category A</td>
</tr>
<tr>
<td>Mathematics F150 (135/F145)*</td>
<td>Mathematics 160 (150)*</td>
</tr>
<tr>
<td>General Education Category D</td>
<td>Computer Science 121</td>
</tr>
<tr>
<td>University Studies 101</td>
<td>Mathematics 212</td>
</tr>
<tr>
<td>Physical Education 021</td>
<td>Physical Education Activity</td>
</tr>
<tr>
<td>Total 18</td>
<td>Total 17</td>
</tr>
</tbody>
</table>

*(Mathematics 160 in summer school--if needed)

SOPHOMORE

Mathematics 245 3  Mathematics 255 3
Mathematics 295 3  Mathematics 308 3
General Education Category B 3  Fine Arts Category B 3
B Accounting 201 3  B Accounting 202 3
Elective 3  General Education Category B 3
Total 15  Total 15
### Applied mathematics (B.S.)'s computer science concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
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</tr>
<tr>
<td>Economics 101 Category C</td>
<td>Economics 102 Category C</td>
</tr>
<tr>
<td>General Education Category A</td>
<td>General Education Category A</td>
</tr>
<tr>
<td>Mathematics F150 (135/F145)*</td>
<td>Mathematics 160 (150)*</td>
</tr>
<tr>
<td>University Studies 101</td>
<td>University Studies 101</td>
</tr>
<tr>
<td>Elective</td>
<td>Elective</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

*Mathematics sequence may begin with 135 and/or F145 rather than 150 depending on preparation.

### Applied mathematics (B.S.)'s systems science concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td></td>
</tr>
<tr>
<td>Economics 101 Category C</td>
<td>Economics 102 Category C</td>
</tr>
<tr>
<td>General Education Category A</td>
<td>General Education Category A</td>
</tr>
<tr>
<td>Mathematics F150</td>
<td>Mathematics 160</td>
</tr>
<tr>
<td>General Education Category B</td>
<td>General Education Category B</td>
</tr>
<tr>
<td>Physical Education 021</td>
<td>Physical Education 021</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

*Mathematics sequence may begin with 135 and/or F145 rather than 150 depending on preparation.
## Mathematics (B.A.)

**General Education** (see pages 22-23 for list of approved courses)
- **Category A:** 2 approved courses in written communication in the English language (6 hours)
- **Category B:** 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
- **Category C:** 2 approved behavioral or social science courses (6 hours)
- **Category D:** 1 approved physical or natural science course with laboratory (excluding Physics 103,104; 4 hours; approved related course below will apply)
- **Category E:** 1 approved mathematics course (3 hours; courses below will apply)
- **Category G:** 1 approved perspectives course (3 hours)

The **Freshman Seminar**
- Health and Physical Education 021 plus one additional semester physical education activity
- Foreign language through second college year
- Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average.

**Major and related courses**
- Computer Science 121
- Mathematics (135 and/or F145)*, F150,160, 212, 245, 255, 295,321, 350
- Five additional courses at the 300-400 level excluding 303,415,416 but including the following:
  - At least one course from 308, 403, 407, 414, 440, 445, 460, 470
  - At least one course from 408, 410, 412, 418, 422, 424, 428, 450, 454
  - Physics D230, 231

2.0 average in all mathematics courses and also in all 300-400 level mathematics courses

**Decisions concerning the most appropriate 300–400 level courses for each student should be made in consultation with mathematics advisers, particularly for those students who are seeking teacher certification in mathematics and students who are planning graduate study.**

**Minimum of 30 hours of 300 and 400 level courses**
- Electives to complete 128 hours

*Mathematics sequence may begin with 135 and/or F145 rather than 150 depending on preparation.

## Typical course of study in mathematics (B.A.)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td></td>
</tr>
<tr>
<td>General Education Category A 3</td>
<td>General Education Category A 3</td>
</tr>
<tr>
<td>Mathematics F150 (135/F145)* 4</td>
<td>Mathematics 160 (150)* 4</td>
</tr>
<tr>
<td>Language 101 4</td>
<td>Language 102 4</td>
</tr>
<tr>
<td>General Education Category C 3</td>
<td>Mathematics 212 3</td>
</tr>
<tr>
<td>Physical Education 021 1</td>
<td>Computer Science 121 3</td>
</tr>
<tr>
<td>University Studies 101 3</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong> 18</td>
<td><strong>Total</strong> 17</td>
</tr>
</tbody>
</table>

(Mathematics 160 in summer school—if needed)

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## Mathematics Minor

Required courses: Mathematics 150, 166; 231, 245, 255 (or 250, **260**) 
Elective courses:
- Three courses totaling at least 9 hours from any 300-400 level mathematics courses (excluding 415, 416)
- A 2.0 average on the 300-400 level courses as well as on all courses in the minor
- At least two of the 300-400 level courses must be taken at this institution

*Mathematics sequence may begin with 135 and/or F145 rather than 150 depending on preparation.

## Mathematics Courses

A minimum grade of C must be made on any mathematics course used as a prerequisite for any other mathematics course.

### 105 Elementary Algebra (4 hours institutional credit)
- Review of fractions, percents, and decimals. Basic topics in algebra, including operations with signed numbers and polynomials, linear equations and inequalities, factoring, rational expressions, radicals, basic graphing techniques, and elementary applications. Placement level 05. Every semester. Credit not applicable toward any degree.

### 106 Intermediate Algebra (4 hours institutional credit)
- The real number system, first degree equations and inequalities, exponents and radicals, quadratic equations, systems of equations, absolute value equations, functions and applications. Formerly Mathematics 107. Every semester. Credit not applicable toward any degree. **Prerequisite:** 105 with minimum grade of C or one year of high school algebra and placement level 15.

### 115, 116 Mathematical Concepts for Elementary Teachers (3,3)
- Mathematics as a postulational system: nature of proof; systems of numeration; properties of the real number system; review of fundamental operations of arithmetic: sets, relations, functions; concepts of geometry. Every semester. **Prerequisites:** 2 years of high school algebra and placement level 20 or 106 with minimum grade of C. Mathematics 115 (with minimum grade of C) is prerequisite to 116. Restricted to majors in elementary, early childhood, and special education.

### 120 Introduction to Contemporary Mathematics (3)
- A study of the nature and techniques of mathematics, selected from topics such as mathematical modeling, number systems, modern geometry, probability, the history and development of mathematical ideas. Fall and spring semesters. **Prerequisites:** 2 years of high school algebra and placement level 20 or 106 with minimum grade of C.
124 Elementary Linear Programming (1)  
Linear programming and other selected topics which would not be covered in a traditional college algebra or precalculus course. Includes use of the computer. On demand. Prerequisite: permission of the department.

135 Precalculus I (3)  
Solving linear and quadratic equations and inequalities; solving polynomial equations; rational expressions; graphing techniques; functions; exponential and logarithmic functions; systems of linear equations; matrices; geometric linear programming. Every semester. Prerequisites: 2 years of high school algebra and placement level 20 or 106 with minimum grade of C. Credit not allowed in 135 after 136, 145, or 150 with grades of Cor better.

136 Calculus for Management, Life, and Social Sciences (3)  
Introduction to calculus; limits, differentiation of functions, optimization, marginal analysis, integration, the Fundamental Theorem of Calculus, applications of integration. Every semester. Prerequisites: 4 years of college preparatory mathematics and placement level 30 or 135 with minimum grade of C. Credit not allowed in 136 after 150.

145 Precalculus II (3)  
Exponential and logarithmic functions; complex numbers; the remainder and factor theorems; trigonometry; conic sections; sequences and series; applications; other selected topics. Every semester. Prerequisites: 2 years of high school algebra, advanced mathematics, and placement level 30 or 135 with minimum grade of C. Credit not allowed in 145 after 150 with a grade of Cor better.

150 Calculus I with Analytic Geometry (4)  
Topics in analytic geometry; limits; derivatives of algebraic functions and their applications; integrals of algebraic functions. Every semester. Prerequisites: 4 years of college preparatory mathematics and placement level 40 or 145 with minimum grade of C. Credit not allowed in 150 or 136 after 150.

155 Honors Calculus (4)  
Calculus of functions of one variable with applications; historical, biographical, philosophical material. Fall semester. Prerequisite: Brock Scholar, others by consent of the department head. Credit not allowed in both 150 and 155 or in 136 after 155. May be substituted for 150 in meeting all requirements.

160 Calculus II with Analytic Geometry (4)  
Additional topics in analytic geometry; applications of integration; transcendental functions; hyperbolic functions; techniques of integration, infinite series. Every semester. Prerequisite: 150 with minimum grade of C.

199r Special Projects (1-4)  
Individual or group projects. On demand. Maximum credit 4 hours.

210 Introductory Statistics (3)  
An introductory course suitable for students in a variety of disciplines, including such topics as: nature, sources, collection, and presentation of data; measures of central tendency; probability; sampling distributions; hypothesis testing; regression and correlation; analysis of variance; other non-parametric statistics. Every semester. Prerequisites: 2 years of high school algebra and placement level 20 or 106 with minimum grade of C. Credit not allowed in 210 after any other statistics course.

212 Elementary Linear Algebra (3)  
Systems of linear equations, matrix algebra, determinants geometric vectors, vector spaces, linear transformations, eigenvalues and eigenvectors, inner product spaces. Every semester. Prerequisite: 150 with a minimum grade of C.

225 Topics in Mathematics for Management, Life, and Social Sciences (3)  
Topics from mathematical modeling, the calculus, probability, Markov processes, linear programming, game theory, and other applications. On demand. Prerequisites: linear programming (124 or 135) and calculus (136 or 150) with minimum grades of C.

245 Introduction to Differential and Difference Equations (3)  
First order and second order linear differential and difference equations, systems of equations and transform methods. Formerly 250. Every semester. Prerequisite: 160 with a minimum grade of C, pre- or corequisite: 212 with a minimum grade of C.

255 Multivariable Calculus (3)  
Lines, curves, and surfaces; partial derivatives, gradients, divergence and curl; multiple integrals and vector analysis. Formerly 260. Every semester. Prerequisites: 160 and 212 with minimum grades of C.

295 Foundations of Mathematics (3)  
Introductory concepts of sets, functions, equivalence relations, ordering relations, logic, methods of proof, and axiomatic theories. Fall and spring semesters. Prerequisite: 150 with minimum grade of C. This course is a prerequisite for 321, 322, 350, 412 and 452. Mathematics majors should enroll in it during their sophomore year.

303 Discrete Structures (3)  
Topics from combinatorics, graph theory, abstract algebra, and formal logic. Designed to acquaint students with some of the terminology, concepts, and techniques of several areas of discrete mathematics, especially those often applied in computer science, and to give students an appreciation for the nature and utility of precise definitions and careful logical arguments concerning their consequences. Fall and spring semesters. Prerequisites: Mathematics 160 or 225 with minimum grade of C and Computer Science 118 or 121. Not open to mathematics majors. Credit not allowed in both 303 and 403.

307 Applied Statistics (3)  
Introduction to probability and statistical methods with applications to various disciplines. A study of some basic statistical distributions, sampling, testing of hypotheses, and estimation problems. Fall and spring semesters. Prerequisite: 160 with minimum grade of C. Credit not allowed in both 307 and 407-408.

308 Numerical Methods (3)  
Accuracy and significance of approximate calculations, finite differences and interpolation, solutions of non-linear equations, systems of linear equations, numerical differentiation and integration, solutions of ordinary differential equations. Fall and spring semesters. Prerequisites: Computer Science 118 or 121 or equivalent; Mathematics 212 and Mathematics 245 with minimum grades of C.

321 Introduction to Modern Algebra (3)  
Integral domains, rings, fields, groups, elementary number theory, and other selected topics. Spring semester. Required of all B.A. mathematics majors. Prerequisites: 212, 295 (or permission of instructor) with minimum grades of C.

350 Fundamental Concepts in Analysis (3)  
Classical treatment of the basic concepts of calculus: limits, continuity, differentiation, Riemann integration, sequences and series of numbers and functions. Fall semester. Required of all mathematics majors. Prerequisites: 245, 255, 295 with minimum grades of C.

403 Graph Theory and Combinatorics (3)  
Planar graphs, circuits, graph coloring, trees, general counting principles, generating functions, recurrence relations with applications to computer science including tree traversal, grammars, languages, and finite-state machines. Fall semester. Prerequisites: Mathematics 295 with a minimum grade of C, and either Computer Science 118 or 121. Credit not allowed in both 403 and 303.

407 Introduction to Probability and Statistics (3)  
Introduction to the theory of probability and its applications, counting techniques, sample spaces, random variables and their distributions, mathematical expectation, moment generating functions, binomial, Poisson, and normal distributions. Central Limit Theorem. Fall semester. Prerequisite: 255 with minimum grade of C.

408 Mathematical Statistics (3)  
A continuation of 407 with an introduction to the theories of point and interval estimation, hypothesis testing, regression and correlation analysis, goodness of fit, chi-square, t and F distributions. Spring semester. Prerequisite: 407 with minimum grade of C.

410 Number Theory (3)  
Divisibility, primes, congruences, Fermat's Theorem, number theoretic functions, primitive roots and indices, the quadratic reciprocity law. Summer on demand. Prerequisites: either 245 or 255 and 295 with minimum grades of C.

412 Linear Algebra and Matrix Theory (3)  
Vector spaces, linear transformations, eigenvalue and similarity transformations, orthogonal and unitary transformations, normal matrices, Jordan form. Fall semester. Prerequisites: 212, 245, 295 with minimum grades of C.
414 Operations Research (Linear) (3)
Introduction to linear programming, duality, transportation and assignment problems, integer programming. Spring semester alternate years. Prerequisites: Computer Science 118, Mathematics 212 with minimum grade of C, or approval of instructor.

415 Numeric Concepts for Elementary Teachers (3)
Designed to reinforce mathematical concepts for those teaching in the elementary grades. Emphasis on the relationship between mathematical ideas and reality. Logic and set operations, algebraic systems, and number systems included. Summer on demand. Prerequisites: 115, 116 with minimum grades of C or equivalent teaching experience. Not applicable on mathematics major.

416 Geometric Concepts for Elementary Teachers (3)
Designed to reinforce the understanding and use of basic geometric concepts for those teaching in the elementary grades. The inductive and deductive approaches to geometry will be considered. Topics include parallelism, congruence, similarity, perimeter, area, volume, networks, and topological concepts. Summer on demand. Prerequisites: 115, 116 with minimum grades of C, or equivalent teaching experience. Not applicable on mathematics major.

418 Advanced Numerical Methods (3)
A more extensive treatment of the material of Mathematics 308 with emphasis of the methods of obtaining numerical solutions of ordinary and partial differential equations, and systems of linear equations. Spring semester. Prerequisites: 255, 308 with minimum grades of C, or approval of instructor.

422 Introduction to Point Set Topology (3)
Introductory set theory, topologies and topological spaces, continuous mappings, compactness, connectedness, separation axioms and metric spaces. Summer on demand. Formerly 322. Prerequisite: 295 with minimum grade of C.

424 Operations Research (Non-Linear) (3)
Network flows, Markov chains and applications, queuing theory and applications, inventory theory, decision theory, and games. Spring semester alternate years. Prerequisites: Computer Science 118, Mathematics 307 or 407 with minimum grade of C, or approval of instructor.

428 Packages for Mathematical Computations (3)
The nature of libraries of procedures for solving mathematical problems, including the design parameters, selection of algorithms, problems with reliability and transportation. Several major mathematical packages will be examined in detail, including IMSL, LINPACK, EISPACK, MINPACK. On demand. Prerequisites: Computer Science 118, Math 245, and one of the following: Math 308, Engineering 225, Computer Science 231 with minimum grades of C.

430 The Historical Development of Mathematics (3)
Examination of central ideas, major developments, and important issues in mathematics from ancient times to the present. Historical overview of the evolution of the discipline through comparative examination of specific theories and results. Alternate fall and summer. Prerequisite: 295 with a minimum grade of C.

440 Applied Analysis (3)
Vector analysis through Stokes' Theorem and the Divergence Theorem. Topics in advanced calculus including implicit functions, Jacobians, interchange of limit processes, and uniform convergence of series of functions; introduction to power series solutions of differential equations. Spring semester alternate years. Prerequisites: 245, 255 with minimum grades of C.

445 Advanced Differential Equations (3)
Systems of differential equations; existence and uniqueness theorems; linear systems; phase plane analysis; stability theory; applications. Fall semester alternate years. Prerequisite: 245, 255 with minimum grades of C.

450 Modern Analysis (3)
Differentiation; inverse and implicit function theorems; functions of bounded variation, integration and measure; integration on manifolds; Stokes' and Green's Theorems: other selected topics. On demand. Prerequisite: 350 with minimum grade of C.

452 Bask Concepts of Geometry (3)
Deficiencies in Euclidean geometry, Euclid's parallel postulate, introduction to non-Euclidean geometry, consistency and validity of non-Euclidean geometry, incidence geometries, affine geometries, linear, planar, and spatial order properties. Summer on demand. Prerequisite: 295 with minimum grade of C or approval of instructor.

454 Abstract Algebra (3)
A study of special topics from advanced algebra, various algebraic structures, and the applications of algebra. On demand. Prerequisite: 321 or 412 with minimum grade of C or approval of instructor.

460 Techniques of Applied Mathematics (3)
Additional topics in vector calculus; series of orthogonal functions; integral transforms; treatment of some elementary partial differential equations arising in applications. Spring semester alternate years. Prerequisite: 245, 255 with minimum grades of C.

470 Introductory Complex Variables (3)
Complex numbers; differentiation and integration of functions of a complex variable; analytic functions; Cauchy's Theorem; power series; residues and poles; conformal mapping; contour integration. Fall semester alternate years. Prerequisites: 245, 255 with minimum grades of C.

475 Research Seminar (1)
Investigation of special topics in mathematics using the directed research technique. On demand. Prerequisite: approval of department. Graded satisfactory/no credit.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.

Music
Cadek Department of Music
Associate Professor Carter, Head

The requirements for entrance and graduation as set forth in the catalog are in accordance with the published regulations of the National Association of Schools of Music and the Tennessee regulations for certification of teachers.

The Cadek Department of Music offers three degree programs at the undergraduate level: Bachelor of Arts with a major in music, Bachelor of Music, and Bachelor of Science with a major in music education. The B.M. degree provides four concentrations for the major: instrumental performance, vocal performance, sacred music, and theory/composition. The B.S. degree in music education provides two concentrations for the major: instrumental and vocal.

The B.A. degree is offered students who desire a strong liberal arts background with a major in music. Approximately one-third of the four year program is in music, and numerous elective hours outside the department permit considerable study in other academic areas. The B.M. degree affords the student a more concentrated course of study in the major area: approximately two
thirds of the four year program is in music. The B.S. degree is especially appropriate for students who plan a career teaching public school music. It combines general education with music content and teaching methodology in a highly structured course of study. Successful completion of the program gains the student public school teaching certification. All three degree programs represent appropriate preparation for graduate study.

In addition to University admission standards, prospective music majors will stand an audition in their primary performing area which will determine the appropriate applied music course level and degree program. All music majors are required to participate in an ensemble for each semester of residence, and must accumulate a minimum of eight hours credit. For all music majors, a 2.0 average in music courses is required for enrollment in 300 and 400 level music courses. A senior educational experience is required of all majors.

In addition to degree requirements herein listed, other regulations for music majors appear in the current Music Student Handbook.

The following are suggested courses of study for the several degrees in music. Specific course requirements are listed by course number; general education category requirements are indicated by category only. Elective courses other than those included in general education requirements are indicated as "elective." Appropriate music ensemble requirements are indicated only as "ensemble" in the courses of study. Applied Music Study is indicated only as "Applied Music;" specific course numbers are determined according to level of study and specific instruments studied.

Music (B.A.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses other than music: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category F: 1 approved mathematics course (3 hours)
Category G: 1 approved perspectives course other than music (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity
Foreign language through second college year
Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major
Music 103, 104, 107, 108, 203, 204, 207, 208, 315, 316
Ensemble participation required each semester of residence, minimum 8 hours credit (4 hours of credit permitted beyond 42-hour limit in music)
8 semesters (8 hours) primary instrumental or vocal study
4 hours music electives in music history, music theory, or composition
4 hours music electives
2.0 average in all music courses
Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical course of study in music (B.A.)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td></td>
</tr>
<tr>
<td>Music 000</td>
<td>Music 000</td>
</tr>
<tr>
<td>General Education Category A</td>
<td>General Education Category A</td>
</tr>
<tr>
<td>University Studies 101</td>
<td>General Education Category C</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>Foreign Language</td>
</tr>
<tr>
<td>Physical Education 021</td>
<td>Physical Education Activity</td>
</tr>
<tr>
<td>Music 103</td>
<td>Music 104</td>
</tr>
<tr>
<td>Music 107</td>
<td>Music 108</td>
</tr>
<tr>
<td>Applied Music (Primary)</td>
<td>Applied Music (Primary)</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

| **SOPHOMORE**  |                 |
| Music 000      | Music 000       |
| Foreign Language | Foreign Language |
| General Education Category F | General Education Category C |
| Music 203      | Music 204       |
| Music 207      | Music 208       |
| Music 315      | Music 316       |
| Applied Music (Primary) | Applied Music (Primary) |
| Ensemble       | Ensemble        |
| Total          | Total           |
| 15             | 15              |

| **JUNIOR**     |                 |
| Music 000      | Music 000       |
| General Education Category B | General Education Category D |
| General Education Category B | General Education Category G |
| Non-Music Electives | Music Elective |
| Applied Music (Primary) | Applied Music (Primary) |
| Ensemble       | Ensemble        |
| Non-Music Electives | Non-Music Electives |
| Total          | Total           |
| 17             | 18              |

| **SENIOR**     |                 |
| Music 000      | Music 000       |
| Music Elective | Music Elective  |
| Applied Music (Primary) | Applied Music (Primary) |
| Ensemble       | Ensemble        |
| Non-Music Electives | Non-Music Electives |
| Total          | Total           |
| 14             | 16              |

TOTAL HOURS 128

Music (B.M.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses other than music: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category F: 1 approved mathematics course (3 hours)
Category G: 1 approved perspectives course other than music (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity
Foreign language through second college year

Major
Core: Music 103, 104, 107, 108, 203, 204, 207, 208; 315, 316; ensemble participation required each semester of residence, minimum 8 hours credit; 4 semesters (4 hours) piano study for nonkeyboard majors. Performance majors required to present a half-recital in junior year, full recital in senior year.
One of the following concentrations:

1. **Instrumental Performance**: 8 semesters (32 hours) primary applied study, 16 hours at the 200 level and 16 hours at the 400 level; Music 332 (for piano majors). 19-21 hours music electives other than primary applied study.

2. **Vocal Performance**: 8 semesters (32 hours) voice study, 16 hours at the 200 level and 16 hours at the 400 level; Music 217, 218, 333. 13 hours music electives other than primary applied study.

3. **Sacred Music**: 8 semesters (24 hours) keyboard or voice study; 4 semesters (4 hours) secondary applied study in keyboard or voice; Music 302, 305r (2 hours), 309, 310, 404, 405, 406, 406r (field work). 12 hours music electives other than primary applied study.

4. **Theory and Composition**: 8 semesters (8 hours) primary instrument or voice study; Music 302; 4 hours of 305r; 307; 4 hours from 309, 310, 327, 328; 8 hours of 401r, or 407, 408, 409, 410. 20-21 hours music electives.

2.0 average in all music courses.

Minimum of 30 hours of 300 and 400 level courses.

Electives to complete 128 hours.

Typical courses of study in music (B.M.)

Music (B.M.): instrumental performance concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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</thead>
<tbody>
<tr>
<td>FRESHMAN</td>
<td></td>
</tr>
<tr>
<td>Music 000</td>
<td>0 Music 000</td>
</tr>
<tr>
<td>General Education Category A</td>
<td>General Education Category A</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>Foreign Language</td>
</tr>
<tr>
<td>Music 131 or 251</td>
<td>1 Music 132 or 251</td>
</tr>
<tr>
<td>University Studies 101</td>
<td>3 Music 104</td>
</tr>
<tr>
<td>Music 103</td>
<td>1 Music 108</td>
</tr>
<tr>
<td>Music 107</td>
<td>3 Applied Music (Primary)</td>
</tr>
<tr>
<td>Applied Music (Primary)</td>
<td>4 Applied Music (Primary)</td>
</tr>
<tr>
<td>Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
</tr>
</tbody>
</table>

| SOPHOMORE       |                 |
| Music 000      | 0 Music 000     |
| Physical Education 021 | Physical Education Activity |
| Foreign Language | Foreign Language |
| Music 203      | 1 Music 204     |
| Music 207      | 3 Music 208     |
| Music 315      | 3 Music 316     |
| Applied Music (Primary) | 4 Applied Music (Primary) |
| Ensemble       | 1               |
| Music 141 or 251 | 1 Music 142 or 251 |
| Total          | 17              |

| JUNIOR         |                 |
| Music 000      | 0 Music 000     |
| General Education Category B | General Education Category B |
| General Education Category C | General Education Category C |
| Applied Music (Primary)      | 4 Applied Music (Primary) |
| Ensemble       | 1               |
| Music Elective | 3               |
| Total          | 17              |

| SENIOR         |                 |
| Music 000      | 0 Music 000     |
| General Education Category C | General Education Category G |
| Applied Music (Primary)      | 4 Applied Music (Primary) |
| Ensemble       | 1               |
| Music Elective | 3               |
| Total          | 16              |

| TOTAL HOURS 128 |

Music (B.M.): sacred music concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>FRESHMAN</td>
<td></td>
</tr>
<tr>
<td>Music 000</td>
<td>0 Music 000</td>
</tr>
<tr>
<td>General Education Category A</td>
<td>General Education Category A</td>
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<tr>
<td>Foreign Language</td>
<td>Foreign Language</td>
</tr>
<tr>
<td>Physical Education 021</td>
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</tr>
<tr>
<td>Music 103</td>
<td>1 Music 104</td>
</tr>
<tr>
<td>Music 107</td>
<td>3 Music 108</td>
</tr>
<tr>
<td>Applied Music (Primary)</td>
<td>3 Applied Music (Primary)</td>
</tr>
<tr>
<td>Ensemble</td>
<td>1</td>
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<td>University Studies 101</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
</tr>
</tbody>
</table>

| SOPHOMORE       |                 |
| Music 000      | 0 Music 000     |
| Foreign Language | Foreign Language |
| Music 203      | 1 Music 204     |
| Music 207      | 3 Music 208     |
| Music 315      | 3 Music 316     |
| Applied Music (Primary) | 3 Applied Music (Primary) |
| Applied Music (Secondary) | 1 Applied Music (Secondary) |
| Ensemble       | 1               |
| Total          | 18              |

| JUNIOR         |                 |
| Music 000      | 0 Music 000     |
| General Education Category B | General Education Category C |
| General Education Category F | General Education Category D |
| Applied Music (Primary) | 3 Applied Music (Primary) |
| Ensemble       | 1               |
| Music 405      | 2 Music 404     |
| Music 498r     | 1-4 Music 406   |
| Music Elective | 3 Music Elective |
| Total          | 13-16           |

| SENIOR         |                 |
| Music 000      | 0 Music 000     |
| General Education Category C | General Education Category G |
| Applied Music (Primary) | 3 Applied Music (Primary) |
| Ensemble       | 1               |
| Music 131 or 251 | 1 Music 132 or 251 |
| University Studies 101 | 3               |
| Total          | 18              |

| TOTAL HOURS 128 |

Music (B.M.): theory and composition concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>FRESHMAN</td>
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</tr>
<tr>
<td>Music 000</td>
<td>0 Music 000</td>
</tr>
<tr>
<td>General Education Category A</td>
<td>General Education Category A</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>Foreign Language</td>
</tr>
<tr>
<td>Physical Education 021</td>
<td>Physical Education Activity</td>
</tr>
<tr>
<td>Music 103</td>
<td>1 Music 104</td>
</tr>
<tr>
<td>Music 107</td>
<td>3 Music 108</td>
</tr>
<tr>
<td>Applied Music (Primary)</td>
<td>3 Applied Music (Primary)</td>
</tr>
<tr>
<td>Ensemble</td>
<td>1</td>
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<tr>
<td>University Studies 101</td>
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</tr>
<tr>
<td>Total</td>
<td>18</td>
</tr>
</tbody>
</table>

| TOTAL HOURS 128 |

1 For nonkeyboard majors. Course number to be determined by audition.
2 For piano majors.
**FRESHMAN**  
Music 000 0  
General Education Category A 3  
Foreign Language 4  
University Studies 101 3  
Music 103 1  
Music 107 3  
Applied Music (Primary) 4  
Ensemble 1  
**Total** 19  

**SOPHOMORE**  
Music 000 0  
Physical Education 021 1  
Foreign Language 3  
Music 203 1  
Music 207 3  
Music 315 3  
Applied Music (Primary) 4  
Ensemble 1  
Music 217 2  
**Total** 18  

**JUNIOR**  
Music 000 0  
General Education Category B 3  
General Education Category B 3  
General Education Category F 4  
Applied Music (Primary) 4  
Ensemble 1  
Music 131 or 251 1  
**Total** 15  

**SENIOR**  
Music 000 0  
General Education Category C 3  
Applied Music (Primary) 4  
Ensemble 1  
Music 333 2  
Music 141 or 251 1  
**Total** 17  

**TOTAL HOURS 128**

For nonkeyboard majors. Course number determined by audition.

Music Education (B.S.)

**General Education** (see pages 22-23 for list of approved courses)

**Category A:** 2 approved courses in written communication in the English language  
**Category B:** General Education Category C  
**Category C:** General Education Category D  
**Category D:** General Education Category F  
**Category E:** Mathematics F120  
**Category F:** 1 approved perspectives course other than music (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

NOTE: Current requirements for licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for licensure/endorsement areas approved by the Tennessee Board of Education. The Music program is still undergoing curriculum revision. Questions about the new program should be directed to the music program or School of Education.

20 hours applied music including: ensemble participation required each semester of residence, with the exception of student teaching semester, minimum of 8 hours credit; 8 semesters (8 hours) primary instrumental or vocal study or 6 hours primary and 2 hours secondary;  
Music 131, 132, 141, 142, for piano proficiency. All Music Education majors will take a piano proficiency examination as described in The Music Department Undergraduate Student Handbook.

One of the following concentrations

1. **Instrumental:** Music 221; 3 hours of 223; 3 hours of 224; 2 hours of 225;  
   226; 307 or 326; 325, 327, 328

2. **Vocal:** 133, 134, 221, 222; 307, 309, 310, 333; 2 hours applied piano study in addition to piano proficiency study

33 hours from the School of Education including Curriculum and Instruction 200, 201, 204, 205, 321, 432, 436, 437, 439; Special Education 333 or 332; Music 321  
For graduation: 2.0 average in music and 2.0 average in School of Education courses  
For certification: 2.5 average overall, 2.5 average in teaching field, and 2.5 average in education courses with no grade less than C in the latter

Minimum of 30 hours of 300 and 400 level courses  
Electives to complete 128 hours

See School of Education section for teacher education, certification, and student teaching requirements.
Typical course of study in music (B.S.)
Music education (B.S.): instrumental concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tr>
<td><strong>FRESHMAN</strong></td>
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<tr>
<td>Music 000</td>
<td>Music 000</td>
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<tr>
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<td>Physical Education 021</td>
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<td>General Education Category C</td>
<td>Instrumental Ensemble</td>
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<tr>
<td>Ensemble-Marching Band</td>
<td>Applied Music (Primary)</td>
</tr>
<tr>
<td>Applied Music (Primary)</td>
<td>Music 104</td>
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<tr>
<td>Music 103</td>
<td>Music 108</td>
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<td>Music 107</td>
<td>Music 132</td>
</tr>
<tr>
<td>Music 131</td>
<td>ED Curr. 6k Instr. 200</td>
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<tr>
<td>University Studies 101</td>
<td>ED Curr. &amp; Instr. 201</td>
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<td><strong>Total</strong></td>
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</table>

| **SOPHOMORE**  | Apply for admission to TEP |
| Music 000      | Music 000                 |
| General Education Category D | General Education Category B |
| Physical Education Activity Ensemble-Marching Band | Applied Music (Primary) |
| Applied Music (Primary) | Music 142 |
| Music 141      | Music 141                 |
| Music 203      | Physical Education Activity |
| Music 207      | General Education Category C |
| Music 225r     | General Education Category A |
| Music 226      | Music 000                 |
| **Total**      | **Total**                 |
| 17             | 17              |

| **JUNIOR**     | Apply for Student Teaching |
| Apply for Student Teaching | Music 000 |
| Music 000      | General Education Category B |
| Natural Science | General Education Category B |
| EDCurr. 6k Instr. 321 | Applied Music (Primary) |
| General Education Category G | Music 251 |
| Ensemble and Marching Band | Music 209 |
| Applied Music (Primary) | Music 221 |
| Music 209      | Music 251                 |
| Music 221      | Music 316                 |
| Music 315      | Music 107                 |
| Music 325      | Physical Education Activity |
| **Total**      | **Total**                 |
| 17             | 17              |

| **SENIOR**     | ED Curr. 6k Instr. 436r |
| Music 000      | EDCurr. 6k Instr. 437 |
| Social Science Elective | EDCurr. 6k Instr. 439 |
| General Education Category G | Choral Ensemble |
| Ensemble and Marching Band | Applied Music (Primary) |
| Applied Music (Primary) | Music 310 |
| Music 321      | Music 315                 |
| EDCurr. 6k Instr. 432 | EDCurr. 6k Instr. 439 |
| Music Elective | **Total** |
| **Total**      | **Total**                 |
| 18             | 13              |

**TOTAL HOURS 128**

Music education (B.S.)s vocal

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
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<tr>
<td>Music 000</td>
<td>Music 000</td>
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<tr>
<td>Mathematics Fl 20</td>
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<td>General Education Category A</td>
<td>Physical Education 021</td>
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<td>Music 132</td>
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<td>19</td>
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</tbody>
</table>

**TOTAL HOURS 128**

MUSIC MINORS

Music Performances
22 hours of music including a core of 14 hours: 100,101,315,316, and 4 hours (4 semesters) of applied instruction at the 200 level or above; at least 3 of the elective hours must be at the 300 level or above with the remainder at the 200 level or above. A minimum of 2 hours of ensemble credit will be accepted. Music 107 and 108 may be substituted for 100 and 101.

Minimum 2.0 average in the minor.

Music History:
20 hours of music including a core of 14 hours: 100,101,315,316, and 4 hours of applied instruction; two courses from 411,412,413,414,415. Class instruction may satisfy the applied music requirement. Music 107 and 108 may be substituted for 100 and 101.

Minimum 2.0 average in the minor.

Music Composition:
23 hours of music including a core of 14 hours: 100,101,315,316, and 4 hours of applied instruction; additional requirements to include 103,104,205r (1 hour), 305r (4 hours), 370r (2 hours). Class instruction may satisfy the applied music requirements. Music 107 and 108 may be substituted for 100 and 101.

Minimum 2.0 average in the minor.
PERFORMING ORGANIZATIONS

The performing organizations mentioned below are open to University students with sufficient technical ability. Regular attendance at public performances and rehearsals by the appropriate group is required.

020r Chattanooga Singers (1)
Study of music of all periods for large mixed chorus. Rehearsal and extensive performance experience emphasized. Performances in Chattanooga and throughout the world. Every semester. Prerequisite: audition.

022r Chamber Singers (1)
Performance experience emphasized. Performances in Chattanooga and throughout the world. Every semester. Prerequisite: audition.

025r Singing Mocs (1)
Study of repertoire for small choruses through rehearsal and performance. Every semester. Prerequisite: audition.

030r Marching Band (1)
A select ensemble which rehearses and performs literature for larger Wind Ensembles. Study of marching band functions and literature through performances at University athletic and other events which could appropriately utilize the participation of a marching musical group. Every semester. Prerequisite: audition.

031r Concert Band (1)
Reading, rehearsing, and performing contemporary and traditional band literature. Laboratory organization for instrumental conducting and band arranging classes. Spring semester. Prerequisite: audition.

035r Wind Ensemble (1)
A select ensemble which rehearses and performs literature for larger Wind Ensembles of all periods with emphasis on music of the 20th century. On demand. Prerequisite: audition.

036r Jazz Band (1)
Study of types of styles of big band jazz. Emphasis on sight reading, improvisation, and performance. Every semester. Prerequisite: audition.

040r Opera Workshop (1)
Study of and practical experience in preparation and performance of operas and opera scenes. Attention to requirements of various style periods. Emphasis of development of musical and dramatic skills and stagecraft techniques. Every semester. Prerequisite: audition.

041r Opera Theater (1)
Study of extended works for the lyric stage giving students the opportunity to appear with professional singing actors and orchestral musicians from the Chattanooga community and the larger music profession. Emphasis on various aspects of musical theater including musical, dramatic, and stagecraft techniques. Every semester. Prerequisite: audition.

050r University Orchestra (1)
Rehearsal and performance of selected works from the symphonic repertoire from 1700 to the present. Every semester. Prerequisite: audition.

053r Cadek Community Orchestra (1)
Development of basic skills in performance while exploring music literature from various stylistic periods. Provides opportunities for inexperienced players to develop greater proficiency in a non-competitive atmosphere. Every semester. For music majors, no more than 2 hours credit will be counted toward degree requirement.

MUSIC COURSES

\[ \text{XXX Recital (0)} \]
Every semester.

100 Elements of Notation, Dictation, and Sight Singing (2)
Fundamentals of music theory. Designed for those taking music theory without previous experience and as the first course in music theory for music minors. Every semester. May not be included as a music elective for music majors.

101 Conceptual Overview of Music Theory (2)
An elements-based approach to the analysis of music from a broad spectrum of styles, genres, and historical periods. A continuation of Music 100 for music minors. Spring semester. Prerequisite: Music 100.

103, 104 Ear Training I (1,1)
Studies in sight singing and dictation. Interval, melody, counterpoint, diatonic, and chromatic harmonic materials. On demand. Prerequisite: 100 or placement; 103 fall/104 spring semester. Class hours 2.

107, 108 Theory I (3,3)
A comprehensive approach to the study of melody, counterpoint, diatonic and chromatic harmony, basic instrumentation and aural skills. Performance, composition, and analysis of music from all periods and styles. 107 fall/108 spring semester. Prerequisite: 100 or placement examination; Music 103 corequisite to Music 107; Music 104 corequisite to Music 108. Music 107 prerequisite to Music 108. Class hours 4.

110 Music Literature for Children (3)
Study of music for children; fundamentals of the musical language and basic concepts of music. Repertoire selected from a broad range of styles and media. On demand.

111 Introduction to Music (3)
Understanding basic elements and structure of music and the evolution of musical style through performance. Understanding the musical artist in historical context. Extensive use of recorded materials. Every semester. Credit not permitted toward graduation for music majors.

121 Piano Class (1)
For persons without keyboard or music reading experience. Every semester. Class hours 2.

131, 132 Piano Class (1,1)
For persons without keyboard experience. 131 fall/132 spring. Class hours 2. 131 prerequisite to 132.

133, 134 Voice Class (1,1)
For persons without vocal experience. 133 fall/134 spring semester. Class hours 2. 133 prerequisite to 134.

135, 136 Guitar Class (1,1)
For persons without guitar experience. An introduction to the technique and classical literature of the guitar. 135 fall/136 spring semester. Class hours 2. 135 prerequisite to 136.

141, 142 Piano Class (1,1)
141 fall/142 spring. Class hours 2. Prerequisite: 132 or audition; 141 prerequisite to 142.

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit 4 hours.

201r Ensemble (1)
Accompanying, chamber, and other ensemble music. On demand.

203, 204 Ear Training II (1,1)
Continued studies in sight singing and dictation. Aural structural analysis, advanced melodic and harmonic studies, twentieth century techniques. 203 fall/204 spring semester. Chiss hours 2. Prerequisite: 104; 203 is prerequisite to 204.

205r Fundamentals of Music Composition (1)
Basic skills of music composition designed to prepare promising lower division students for advanced study. Analysis focusing on applied compositional skills. Modeled composition. Spring semester. Prerequisite: Music 107 or permission of instructor.

207, 208 Theory II (3,3)
A comprehensive approach to the study of musical structure. Continued study of melody, harmony, counterpoint, and aural skills. Introduction to 20th century compositional techniques. Performance, composition, and analysis. 207 fall/208 spring semester. Class hours 4. Prerequisite: 108; corequisite: 203 corequisite to 207, 204 corequisite to 208.
209, 210 Keyboard Harmony (1,1)
The use of harmonic materials at the keyboard. 209 fall/210 spring. 209 prerequisite to 210.

212 America's Musical Heritage (3)
An historical study of musical development in the United States from the Colonial period to the emergence of the native American composer and performer of distinction in the 20th century. On demand.

213 Mystery Train: A History of Rock (3)
A consideration of the history of rock music in a social context. Prerequisite: Music 111 or University Honors 103; open to music majors.

217, 218 Diction for Singers (2,2)
An introduction to the pronunciation of Italian, German, French, and English based on the International Phonetic Alphabet. 217 fall/218 spring semester. Open to voice majors; others by permission.

Ill String Methods (2)
Class instruction of the string instruments: violin, viola, cello, and double bass; tuning and care of instruments; teaching techniques. Fall semester.

222 Instrumental Methods for Vocal Music Education Majors (3)
Class instruction of woodwinds, brass, and percussion instruments; tuning and care of instruments. Teaching techniques. Flute, single, and double reed instruments; trombone, French horn, and piston valve instruments; drum and mallet instruments. Spring semester. Prerequisite: Vocal Music Education Major status.

223r Woodwind Methods (1)
Class instruction of woodwind instruments; tuning and care of instruments. Teaching techniques. Single reed instruments, double reed instruments, and flute. Fall semester. Class 1 hour, laboratory 1 hour.

224r Brass Methods (1)
Class instruction of brass instruments; tuning and care of instruments. Teaching techniques. Piston valve instruments, French horn, and trombone. Spring semester. Class 1 hour, laboratory 1 hour.

225r Percussion Methods (1)
Class instruction of percussion instruments; sticking techniques; care of the instruments; teaching techniques. Drum and mallet instruments. Spring semester. Class 1 hour, laboratory 1 hour.

226 Marching Band Techniques (2)
A study of the techniques and style employed in training the marching band. Fall semester.

230r Orchestral Literature for Elementary and Secondary School Students (1)
A survey of literature available for teaching orchestral music to students from elementary through secondary levels. Class hours 2. Prerequisite: 108 or permission of the instructor. Only one hour credit may apply to a degree.

231r Wind and Percussion Literature for Elementary and Secondary Students (1)
A survey of music literature available for teaching wind and percussion instruments to students from elementary through the twelfth grade. Class hours 2. Prerequisite: 108 or permission of instructor.

232r Choral Literature for Elementary and Secondary School Students (1)
A survey of literature for choral ensembles from elementary through secondary levels. Class hours 2. Prerequisite: 108 or permission of the instructor. Only one hour credit may apply to a degree.

251r Keyboard Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: audition.

253r String Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: audition.

255r Voice Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: audition.

257r Woodwind Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: audition.

259r Brass Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: audition.

261r Percussion Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: audition.

302 Counterpoint (2)
An analytical survey of contrapuntal techniques. Spring semester alternate years. Prerequisite: 108, or permission.

304 Arranging and Composing for Percussion Instruments (1)
Aspects of composing and arranging peculiar to instruments of the percussion family. Nature of sound as related to specific available instruments, technical problems, and notation practice. Investigation of percussion instruments in combination with other instruments, solo contexts, and in ensembles composed entirely of percussion instruments. On demand. Prerequisite: 208 and permission of instructor.

305r Composition (1-4)
Beginning composition study concentrating on small groups and short forms. Every semester. Prerequisites: 208.

307 Orchestration (2)
Scoring for strings, woodwinds, brasses, and full orchestra. Piano transcriptions from orchestral scores. Fall semester alternate years. Prerequisite: 208.

309, 310 Choral Conducting (2, 2)
First semester designed to teach the student to train choral groups, read choral scores, and conduct effective rehearsals; basic patterns for choral and orchestral conducting. Second semester devoted to interpretation and building of repertoire of both secular and sacred choral compositions. Actual conducting of works of all periods with and without instrumental accompaniment. 309 fall/310 spring semester. 309 prerequisite to 310. Prerequisites: 207, 208.

315, 316 History of Music (3, 3)
A general survey of the history of music in Western civilization. 315 fall/316 spring semester. Prerequisite: 101 or 108.

317 Survey of Jazz (3)
A survey course in jazz from its ethnic origins, through its chronological development, to its current styles. Every semester.

321 Elementary School Music Methods, Materials, and Observation (3)
A study of music teaching-learning methods and strategies. Basic concepts of musical organization, musical skills, and literature for the classroom. Every semester.

322 Music Education in Early Childhood (3)
Methods and materials designed to involve the infant and young child in musical experiences as an outgrowth of play. Developmental paths to music making and learning explored through informal and formal settings. Activities including music and movement, rhythmic speech, song, imitation and improvisation, music-drama, and music pictures. On demand.

325 Band Organization and Management (2)
The techniques used in the organization, administration, and preparation of school bands. The selection, care, and repair of materials, instruments, and other equipment. Fall semester.

326 Band Arranging (2)
Band instrumentation and general principles of arranging; special reference to writing for bands having incomplete instrumentation and less experienced players. Spring semester.

327, 328 Instrumental Conducting (2,2)
First semester includes techniques of die baton; basic score reading; fundamentals of conducting. Second semester includes style, nuances, musical interpretations, advanced score reading, and actual band conducting. 327 fall/328 spring semester. 327 prerequisite to 328. Prerequisites: 207, 208,
332 Piano Pedagogy (2)
Piano methods and materials. For advanced students planning to teach piano. Fall semester alternate years.

333 Vocal Pedagogy (2)
A comparative study of the major concepts in current vocal training for soloist, choral group, and voice class; analysis of corrective procedure for vocal problems; elementary study of vocal anatomy, vocal acoustics, and the psychology of singing. Fall semester.

370r Electronic Music (2)
An introduction to and continuing experience with the aesthetics, analysis, and composition of electronic music. Tape recorder terminology; tape manipulation techniques; synthesizer technique; electronics; acoustics; composition and analysis. For music majors. Every semester. Prerequisite: 132, 208, or permission.

397 Music, Poetry, and Ideas (3)
A consideration of technique, meaning, style, form, expression, and value in music and poetry. On demand. May be registered as English 397.

401r Composition II (1-4)
Advanced composition study. Every semester. Prerequisites: 305, 307.

404 Liturgies and Service Structure (2)
History, content, theology of worship; similarities in Jewish and Christian worship and liturgy; application of liturgical principles to various types of worship service; service playing. On demand. Open to music majors; others by permission.

405 Ministry of Music (2)
Philosophy of music in the church; the role of music in worship; the organization of a church music program; staff relations. On demand. Open to music majors; others by permission.

406 Hymnology (2)
Historical development of the Christian hymn; criteria for use of hymns and hymn tunes; the composition of hymns. On demand. Open to music majors; others by permission.

407, 408 Advanced Analysis (2,2)
Compositional, analytic techniques, and formal procedures, with emphasis on the 20th century. 407 fall/408 spring semester alternate years. Prerequisite: 208 or permission of instructor; 407 prerequisite to 408.

409, 410 Musical Styles (2,2)
Literature of the various periods of music history, including characteristic features of musical style. 409 fall/410 spring alternate years. Prerequisite: permission of instructor.

411 Music Before 1600 (3)
A study of works, both monodic and polyphonic, characteristic of European music before 1600. On demand. Prerequisites: 208 or permission of instructor.

412 Music from 1600 to 1750 (3)
A study of works characteristic of the period and illustrative of musical trends in the era. Fall semester. Prerequisites: 208 or permission of instructor.

413 Music from 1725 to 1825 (3)
A study of works characteristic of the period and illustrative of musical trends in the era. Extensive examination of representative scores. Spring semester. Prerequisites: 208 or permission of instructor.

414 Nineteenth Century Music (3)
A study of works characteristic of the period and illustrative of musical trends in the era. On demand. Prerequisites: 208 or permission of instructor.

415 Twentieth-Century Music (3)
A study of works characteristic of the period and illustrative of musical trends in the era. On demand. Prerequisites: 208 or permission of instructor.

426 Jazz Arranging (2)
Fundamentals of composing and arranging for the contemporary jazz ensemble. On demand. Prerequisites: 208, 307 or 326, or permission of instructor.

451r Keyboard Instruction (1-4)
Four hours per week practice required for each hour credit. Every semester. Prerequisite: 16 hours of 251r and successful audition for the division jury.

453r String Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: 16 hours of 253r and successful audition for the division jury.

455r Voice Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: 16 hours of 255r and successful audition for the division jury.

457r Woodwind Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: 16 hours of 257r and successful audition for the division jury.

459r Brass Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: 16 hours of 259r and successful audition for the division jury.

461r Percussion Instruction (1-4)
Four hours practice per week required for each hour credit. Every semester. Prerequisite: 16 hours of 261r and successful audition for the division jury.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.

Nursing
See College of Health and Human Services, School of Nursing.
The Department of Philosophy and Religion offers a 30-hour undergraduate major (B.A.) with separate concentrations in philosophy, religious studies, and philosophy and religion; and an 18-hour minor with separate concentrations in philosophy and religious studies. Through its curricular and extracurricular programs the department seeks to expose the student to a wide variety of influential philosophical and religious thinkers in both Western and non-Western cultures.

Each discipline of philosophy and of religion is regarded separately in applying the 42-hour limit in any one department for the B.A. degree.

Philosophy and Religion (B.A.): Philosophy, Religious Studies, Combined Concentrations

**General Education** (see pages 22-23 for list of approved courses)

*Category A*: 2 approved courses in written communication in the English language (6 hours)

*Category B*: 3 approved courses other than philosophy and religion: one from humanities, one from fine arts, and one from either (3 hours each)

*Category C*: 2 approved behavioral or social science courses (6 hours)

*Category D*: 1 approved physical or natural science course with laboratory (4 hours)

*Category F*: 1 approved mathematics course excluding Philosophy 212 (3 hours)

*Category G*: 1 approved perspectives course other than philosophy and religion (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Foreign language through second college year (Department recommends Greek, Latin, German, or French)

Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

**Major**

One of the following concentrations

1. **Philosophy**: 30 hours philosophy beyond 100 level including Philosophy 211 or 212, 351, 353, 498r; one course in ethics, metaphysics, or epistemology 2.0 average in all philosophy courses

2. **Religious Studies**: Total of 30 hours including Philosophy 351 and 353; Philosophy 498r or Religion 498r; and also including 21 hours religion with two courses chosen from each of the following groups:

   1. Religion 211, 313, 314, 316r, 417, 493r
   2. Religion 232, 337, 355, 362, 467, 482, 492r

2.0 average in all philosophy and religion courses

3. **Combined**: Total of 30 hours excluding Philosophy 106

   15 hours philosophy including 351, 353, 417, 498r
   15 hours religion including two courses from 337, 355, 362, 467, 482, 492r

2.0 average in all philosophy and religion courses

Typical courses of study in philosophy and religion (B.A.)

**Philosophy and Religion (B.A.): philosophy concentration**

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<th>First Semester</th>
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**TOTAL HOURS 128**

*This course does not count toward major.

1. Major requires 30 hours philosophy beyond the 100 level, including Philosophy 211 or 212, 351, 353, 498r, and one course in ethics, metaphysics, or epistemology. Not more than 42 hours in any one department may be applied toward a B.A. degree. One course outside the department may count toward major with approval by department head.

2. Correlative courses in religion should be considered as appropriate electives.

**Philosophy and Religion (B.A.): religious studies concentration**

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### Philosophy and Religion (B.A.)s combined concentration

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**TOTAL HOURS 128**

### PHILOSOPHY AND RELIGION MINORS

One of the following concentrations

1. **Philosophy:**
   - 18 hours of philosophy beyond 100 level including Philosophy 211 or 212, 351, 353; 9 of these hours must be earned in courses at 300 level or above.
   - Minimum 2.0 average in the minor.

2. **Religious studies:**
   - Total of 18 hours including Philosophy 333 or 353 and 15 hours religion, with at least one course from each of the following groups:
     - Religion 211, 313, 314, 316r, 417, 493r
     - Religion 232, 337, 355, 362, 467, 482, 492r
   - Nine of the 18 hours must be earned in courses at 300 level or above.
   - Minimum 2.0 average in the minor.

### PHILOSOPHY COURSES

#### 106 Philosophy and Human Nature (3)
- Interpretations of human nature and analyses of the human condition from Plato to Russell and others in the 20th century. Lectures and discussions aimed at clarification of present meanings and values. Every semester.

#### 199r Special Projects (1-4)
- Individual or group projects. On demand. Maximum credit 4 hours.

#### 201 Introduction to Philosophy (3)
- An approach to the discipline through the perennial and changing issues of the field: freedom and determinism, the real and our knowledge of it, cosmological ideas, God, meaning, and moral values. Every semester.

#### 211 Logic, Language, and Evidence (3)
- An examination of accepted forms of reasoning and of the varied ways in which language functions; fallacy, definition, metaphor, and theories of meaning; examples from such areas as science, law, politics, theology, and philosophy; classical and symbolic logic; deductive techniques; induction and deduction contrasted. Fall semester.

#### 212 Symbolic Logic (3)
- Sentential and quantificational logic; techniques of natural deduction; relations, identity, definite descriptions; consistency and completeness of formal deductive systems. On demand. Prerequisites: 2 years of high school algebra and acceptable test scores or Mathematics 106.

#### 221 Introduction to Ethics (3)

#### 230 Social and Political Philosophy (3)
- An inquiry into various philosophical theories of the state and society, with critical examination of such concepts as law, rights, sovereignty, justice, liberty, and civil disobedience. On demand.

#### 322 Ethical Theory (3)
- A critical analysis of contemporary ethical theories. Emphasis on the writings of philosophers such as Moore, Stevenson, Dewey, Rawls, Baier, Hare, and Searle. Alternate years.

#### 333 Philosophy of Religion (3)
- A philosophical examination of religion, including traditional and modern arguments for the existence and nature of God; the nature of religious experience and belief, and the functions of religious language. Alternate years.

#### 336 Aesthetics (3)
- A study of the nature and value of art, of human creativity, and of aesthetic response. Close attention to theoretical analysis and to the interpretation and critique of important artistic achievements. On demand.

#### 341 Metaphysics (3)
- A study of classical and contemporary approaches to the question of what is ultimately real; consideration of modern challenges to the legitimacy of metaphysics. Alternate years.
345 Epistemology (3)
A critical examination of the nature of knowledge and the philosophical problems concerning skepticism; knowledge of the self, material objects, other minds; the past, present, and future; universal and necessary truth. Selections from both historical and recent writings. Alternate years.

348 Philosophy of Science (3)
An introduction to philosophical problems in the natural and social sciences; the nature of explanation, induction, evidence, probability, verification, causation; the role of observation; the relations among the sciences. Spring semester alternate years.

351 History of Ancient Philosophy (3)
Selections from the pre-Socratics through the late Greco-Roman writers, including Plotinus. Emphasis on Plato and Aristotle. Fall semester.

353 History of Modern Philosophy (3)
Rationalism and empiricism as developed by leading thinkers; selections from chief representatives from Hobbes and Descartes through Kant. Spring semester.

360 American Philosophy (3)
Earlier American thought in its reaction to European movements; the emergence of a genuinely American philosophy. Emphasis on James, Pierce, Santayana, Royce, Lewis, and Whitehead. Alternate years.

364 Existentialism and Phenomenology (3)
Presentations on the major figures and themes of this movement; discussions of selected passages from Kierkegaard, Nietzsche, Husserl, Heidegger, Sartre, and Ricoeur. Alternate years.

425 Ethics and the Professions (3)
An examination of ethical issues and principles related to problems and standards in the professions. Special attention to professional codes and case studies in relation to traditional and contemporary moral philosophy. Designed as a general course for students not majoring in philosophy and religion. Fall semester.

481r Interdisciplinary Seminar (3)
Critical inquiry into the most comprehensive questions raised by particular disciplines; reading and discussion of significant primary sources from scholars in the special field and philosophers. Two faculty members. On demand.

491r Studies in Philosophy (3)
A seminar or tutorial for the intensive consideration of one philosophical problem, movement, or figure. On demand.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
Every semester. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
Must be taken for at least three hours in one semester by all majors. Every semester.

499r Group Studies (1-4)
On demand.

RELIGION COURSES

103 Introduction to the Study of Religion (3)
Consideration of the various elements of religion and the methods for studying them; attention to beliefs, world-views, and sacred literature; rituals, myths, symbols; religious communities and organizations; types of religious experience. Every semester.

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit 4 hours.

211 Religions of the World (3)
An introduction to major world religions with emphasis on Hinduism, Buddhism, and Islam. Every semester.

213 A History of Judaism (3)
Examination of enduring themes or concepts in Jewish tradition from antiquity to the modern era. Particular attention to the emergence of normative Judaism and its later challengers: Hasidism, Reform, and Zionism. Fall semester.

221, 222 Biblical Literature (3,3)

232 Religion and the Modern Consciousness (3)
Examination of the influence of modern scientific discoveries on the interpretation of some principal Jewish and Christian beliefs. Particular attention to the impact of astronomy, evolutionary theory, and psychoanalysis. Background lectures. Reading and discussion of modern interpreters of Christian faith. Spring semester.

236 Religion in American Life (3)
Attention to distinctly American phenomena, with the intention of assessing the present role and status of religion; consideration of such topics as separation of church and state, revivalism, the influence of immigration, sects, and cults. Fall semester.

313 Religion in the Middle East (3)
A study of non-Christian religions originating in the Middle East with particular attention to Islam as influenced by Zoroastrianism and Judaism. Alternate years.

314 Primitive Religion (3)
The place of religion in the social and cultural settings of selected peoples as evidenced through magic, myth, totemism, fetish, sacrifice, shamanism, and initiatory rites; an attempt to delineate the common elements of primitive religion. On demand.

316r Religions of Asia (3)
Concentration alternates among three major religious traditions of Asia: (1) Hinduism; (2) Buddhism; (3) interrelated traditions of Taoism, Confucianism, and Shinto as found in China and Japan. Use of primary materials in translation. Philosophical and religious concepts examined along with historical developments and changes. Alternate years.

337 Interpretations of Religion (3)
An examination of ways in which religious belief and practice may be understood; sympathetic and opposing views drawn from several fields and represented by such authors as Feuerbach, Freud, James, Malinowski, Berger, Levi-Strauss, Yinger, Fromm, and N.O. Brown. Alternate years.

355 Classics of the Christian Tradition (3)
Selected readings in leading works of Christian literature from the Patristic, Medieval, Reformation, and Enlightenment periods as represented by such authors as Augustine, Anselm, Aquinas, Luther, Calvin, and Wesley. Alternate years.

362 Theology in the Modern Period (3)
An examination of the major post-Kantian developments in Europe, Britain, and America, including such figures as Schleiermacher, Newman, Buber, Niebuhr, Barth, and Tillich. On demand.

417 Mysticism East and West (3)
The place of mysticism in the Eastern and Western religious traditions; discussion of the writings of major historical and contemporary mystics. On demand.

467 Contemporary Religious Thought (3)
Analysis of changing religious ideas in Europe and America from 1950 to the present; readings selected from Protestant, Catholic, and Jewish writers with emphasis on the interrelationship of faith and culture. On demand.

470 Psychology of Religion (3)
Analysis of empirical data and psychological theories involving religious beliefs, practices, and experiences. Every semester. Prerequisites: 6 units psychology or philosophy-religion. May be registered as Psychology 470.

482 Christian Faith and Recent Philosophy (3)
Recent attempts to utilize philosophy as a resource for theology; special attention to one philosophical tradition analytic, existentialist, or process philosophy together with related religious thinkers. On demand.
82 — Physics and Astronomy

Physics and Astronomy
Professor Perfetti, Head

Physics (B.S.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course other than physics with laboratory (4 hours; approved related courses below will apply)
Category F: 1 approved mathematics course (3 hours; approved related courses below will apply)
Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity.

Major and related courses

One of the following options:
1. Two semesters of French or German
2. Computer Science 118 or Engineering 124
Mathematics F150, 160, 212, 245, 255
Chemistry D121, 122
Physics 230 (or 103 and 104)
Physics 231 and 232
Physics 341, 342, and 411
6 hours from Physics 381r, 382r, 481r, and 482r
30 additional hours from physics, astronomy, chemistry, engineering, and mathematics at the 200 level or above or from geology and biology or other fields with prior approval by the department.
At least 30 hours of physics and astronomy at the 300 and 400 level 2.0 average in all physics courses
Electives to complete 128 hours

Typical course of study in physics (B.S.)

First semester

FRESHMAN
Chemistry D121 4
Mathematics F150 4
General Education Category A 3
General Education Category B 3
University Studies 101 3
Total 17

SOPHOMORE
Physics 231 4
Mathematics 212 3
Mathematics 245 3
General Education Category B 3
General Education Category C 3
Computer Science 118 or Engineering 124 3
Physics Education Activity 1
Total 17

JUNIOR
Physics 341 4
Physics Electives 5
General Education Category G 3
Physics Elective (300 level or above) 4
Physics 381r 2
Physics Elective (300 level or above) 3
Foreign Language* 3
Elective 3
Total 17

SENIOR
Physics 411 4
Physics 48 lr 2
Physics Electives 3
Electives 8
Total 14

TOTAL HOURS 128

*Select a computer class (1 semester) or a foreign language (2 semesters).

PHYSICS MINORS

Physics:
Required courses: Physics 230 (or 103 or Engineering 103 and 104), Physics 231, Physics 232 (or 104).
Elective courses: A planned program of at least 12 hours of physics at the 300-400 level selected with the prior approval of the department.
Minimum 2.0 average in the minor.

Health Physics:
19 hours of physics including:
A. One of the following introductory options: 103 and 104; or 230, 231, and 232; or Engineering 103, 104, Physics 231, and 232.
B. Physics 441, 442, 482r and 3 hours from 318, 412, 419, or departmentally approved special projects.
Minimum 2.0 average in the minor.

ASTRONOMY COURSES

101 Introduction to Astronomy-The Solar System (4 with lab, 3 without)
Descriptive and conceptual. The structure, nature, and origin of the solar system. Optional 2-hour laboratory illustrates concepts of practical astronomy. On demand. Lecture 3 hours.

102 Introduction to Astronomy-Stars to Galaxies (4)
The nature of stars and galaxies; the evolution and structure of the observable universe with an emphasis on understanding the experimental foundations of the science. Fall semester. Lecture 3 hours, laboratory 2 hours. Prerequisite: two years of high school algebra or Mathematics 106. Corequisite: Astronomy 102 laboratory.

199r Special Projects (1-4)
Individual or Group Studies. Maximum credit 4 hours. On demand.
PHYSICS COURSES

103 General Physics - Mechanics (4)
An algebra-based introduction to forces and uniform motion, conservation principles, sound, and the law of thermodynamics, with applications to problems of modern science and technology. Required in pre-medical, pre-dental, pre-pharmacy, and physical therapy programs. Fall semester. Lecture 3 hours, laboratory 2 hours. Prerequisites: 3 units of college preparatory mathematics or Mathematics 106.

104 General Physics - Electromagnetism and Optics (4)
An algebra-based introduction to classical electricity and magnetism, optics, and the concepts of modern physics. Required in pre-medical, pre-dental, pre-pharmacy, and physical therapy programs. Spring semester. Lecture 3 hours, laboratory 2 hours. Prerequisites: 3 units of college preparatory mathematics.

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit 4 hours.

230 Principles of Physics - Mechanics and Heat (4)
A calculus-based introduction to the laws of classical dynamics, kinematics, and thermodynamics, with applications to simple physical systems. Offered both fall and spring semesters. Lecture 3 hours, laboratory 2 hours. Corequisite: Mathematics 160 or permission of the instructor.

231 Principles of Physics - Electricity and Magnetism (4)
A calculus-based introduction to electric and magnetic fields, electric currents, electromagnetic induction and waves. For all engineering students. Fall semester. Lecture 3 hours, laboratory 2 hours. Prerequisites: Engineering 103 and 104, or Physics 104 or Physics 230; Mathematics 150, 160, or permission of the instructor.

232 Principles of Physics - Optics and Modern Physics (4)
A calculus-based survey of principles of optics, and of the early conceptual advances in 20th-century physics: the Bohr atom, quantum theory, relativity, nuclear physics and elementary particles. For all engineering students. Spring semester. Lecture 3 hours, laboratory 2 hours. Prerequisites: Engineering 103 and 104, or Physics 103 and 104, or 230; Mathematics 150, 160, or permission of the instructor.

303 Basic Electronics (4)
Review of simple DC and AC circuitry; applications of diodes, transistors, and operational amplifiers; introduction to digital electronics using TTL integrated circuits and their applications. Spring semester. Lecture 3 hours, laboratory 2 hours. Prerequisites: Physics 103 and 104, or Physics 231; Mathematics 160; or permission of the instructor.

304 Electronic Circuits (4)
The theory and use of basic electronic instruments for electrical measurement or control. Multi-stage amplification, feedback, oscillators, and digital/logic circuitry treated with varying emphasis. On demand. Lecture 3 hours, laboratory 2 hours. Prerequisite: 303 or permission of the instructor.

307 Optics (4)
Geometrical and physical optics, including reflection, refraction, interference, diffraction, and polarization; introduction to theory of spectra. Spring semester every other year. Lecture 3 hours, laboratory 2 hours. Prerequisites: Physics 230, 231, 232 (or 103, 104); Mathematics 160; or permission of the instructor.

310 Introduction to Thermal Physics (4)
The laws of thermodynamics, kinetic theory, and statistical mechanics through the macroscopic description and microscopic theory of thermal phenomena. Spring semester every other year. Prerequisites: Physics 230, 231, 232 (or 103, 104); Corequisite: Mathematics 255; or permission of the instructor.

318 Radiation Physics and Introductory Health Physics (3)
An introduction to ionizing radiation, its production and interaction with matter, its biological effects and its measurement. Radiation protection practices and regulatory guidelines. The uses of radiation and radioisotopes in biology, chemistry, environmental sciences, and medicine. Benefits and hazards of nuclear energy, Nuclear weapons and the effects of nuclear warfare. On demand. Prerequisite: 104 or 232, or permission of the instructor.

341 Classical Mechanics (4)
An introduction to the dynamics of particles and continuous media; Newton's law of motion, conservation laws, generalized coordinates, Lagrange's equations, and the principle of least action; the mechanics of continuous media, wave motion, sound, hydrostatics, rotational and irrotational flow, the equation of continuity, Laplace's equation. Fall semester. Lecture 3 hours, recitation 2 hours. Prerequisites: 230, 231 or 103 & 104, or permission of the instructor. Corequisite: Mathematics 245 or 255.

342 Electricity and Magnetism (4)
Basic laws of electromagnetism, electric and magnetic properties of materials, Maxwell's equations, boundary value problems, electromagnetic waves. Spring semester. Lecture 3 hours, recitation 2 hours. Prerequisite: 341 or Mathematics 245 or 255, or permission of the instructor.

381r Methods of Experimental Physics (2)
An introduction to experimental design and techniques. Introduction to timing and timing coincidence measurements, measurement of thermodynamic properties, and electromagnetic and magnetic measurements. Fall semester. Maximum credit 4 hours. Lecture 1 hour, laboratory 2 hours. Prerequisites: 230, 231, 232 (or 103, 104); Mathematics 245, 255, or permission of the instructor.

400r Physics Seminar (1)
A study of reporting and review for physics research, including the abstracting of published reports. On demand. Maximum credit 2 hours.

411 Atomic Physics: An Introduction to Quantum Mechanics (3)
Elements of atomic theory with emphasis on atomic structure, radiation processes, spectroscopic analysis, crystal structure, and wave phenomena. Fall semester. Prerequisites: 230, 231, 232 (or 103, 104); Mathematics 245, or permission of the instructor.

412 Nuclear Physics (3)
The theory of nuclear structure; nuclear radiation characteristics; the interaction of radiation with matter; nuclear binding forces; the control and use of nuclear radiation. Spring semester. Prerequisites: 230, 231, 232 (or 103, 104); Mathematics 245, or permission of the instructor.
414r Advanced Modern Physics (3)
One topic selected from biophysics, elementary particles, quantum mechanics, relativity, solid state physics, statistical mechanics, or superconductivity. Emphasis on the relation of the assumptions and predictions of the theories to the experimental evidence. Consequences of the theories illustrate the nature of physics and its applications in modern science. On demand. Prerequisites: Physics 341; Mathematics 245, 255; or permission of the instructor. May be taken a maximum of three times.

419 Introduction to Nuclear Reactor Physics (3)
Nuclear reactions and radiation; fission processes, neutron diffusion, reactor design variables, reactor materials and shielding, reactivity coefficients. On demand. Prerequisite: 412 or equivalent, or permission of the instructor.

424 Instrumentation, Interfacing, and Microcomputers (3)
Interfacing instruments, measuring devices, and controls to mini and microcomputers. Including voltmeters, counters, timers, temperature, and other sensors, CRTs, floppy-disks, keyboards, music synthesizers, and control devices such as relays, thermostats, stepper motors, oscillators, and power supplies. Considers standard S100, IEE-488, and RS232C bus structures. Survey of microcomputer applications. Projects involving interfacing instruments with microcomputers. Spring semester. Lecture 2 hours, laboratory 2 hours. Prerequisites: 104, 232 or equivalent; Computer Science 110 or equivalent, permission of the instructor.

425 Computer Based Materials Development in Science (3)
The basic principles and practice of developing computer based materials for science education. Projects to be chosen from a pool of topics in a specific area of science. Each module to include documentation, a tutorial, a pretest, a post test, explanatory material, a question set, a problem set, a graphics segment, etc. Modules to be prepared to publication standards. Prerequisite: CPSC 102 or equivalent or permission of the instructor. Enrollment limited to juniors or above or permission of the instructor.

430 Physics of Living Systems - Hemodynamics (3)
A study of the physical properties and nature of the cardiovascular system. Topics include steady flow, viscous properties of blood, properties of the vascular wall, pulsatile pressure and flow, the normal hemodynamic state, vascular impedance, wave reflection, wave propagation, cardiac dynamics, methods of measurement, recording and analysis of data. Spring, alternative year. Prerequisites: Physics 230, 231; Mathematics 255 or permission of the instructor.

441 Radiation Dosimetry (3)
An introduction to the theory and methodology of determining exposure and dose from ionizing radiation. Topics include: radioactivity and radioactive decay processes; the interaction of ionizing radiation with matter; exposure, dose and KERMA; cavity chamber theory; and instrumentation for radiation and dose measurement. On demand. Prerequisites: 104 or 232, or permission of the instructor.

442 Radiation Biology (3)
The molecular effects of ionizing radiation and the relationship between molecular events and the acute and chronic effects of ionizing radiation. The human data base for estimates of the effects of low levels of ionizing radiation. Risk assessment of exposure to populations. On demand. Prerequisites: 104 or 232, or permission of the instructor.

481r Atomic Physics Laboratory (2)
An advanced laboratory on experimental methods used in atomic physics. Laboratory experiments may be chosen from a menu of experiments that includes emission and absorption spectra of atoms and atomic ions, the Franck-Hertz experiment, the Stern-Gerlach experiment, the electron-spin resonance, and nuclear magnetic resonance. Analysis of experimental results will be used to study theoretical models of physical processes. Fall semester. Maximum credit 4 hours. Lecture 1 hour, laboratory 2 hours. Prerequisites: 230, 231, and 232 (or 103, 104); Mathematics 245, or permission of the instructor.

482r Nuclear and Health Physics Laboratory (2)
A laboratory course in nuclear physics emphasizing the use of modern detection and counting equipment. Laboratory exercises include radiation dosimetry, radioisotope techniques, neutron scattering, gamma-gamma correlation, and the study of nuclear radiation detection. Spring semester. Maximum credit 4 hours. Lecture 1 hour, laboratory 2 hours. Prerequisites: 230, 231, 232 (or 103, 104, 318); Mathematics 245, or permission of the instructor.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.

Political Science

Professor Swansbrough, Head

Students majoring in political science may earn a B.S. degree, choosing either the public administration concentration, emphasizing preparation for government service and graduate training, or the preprofessional concentration, emphasizing preparation for careers in law, international business, and the diplomatic service.

The department offers courses in five major subfields of the discipline: political behavior and methodology (200, 202, 203, 302,303,401r); political theory (213,314,316,41 lr); public law and administration (221, 223, 321, 322, 323, 421r); American institutions and processes (233, 234, 331, 333, 335, 431r); and international relations and comparative government (242, 244, 343, 345, 441r, 442r). Certain students may also participate in the State Government Internship Program, the Metropolitan Government Internship Program, Judicial Honors Internship.

Political Science (B.S.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses other than political science: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses other than political science (6 hours)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category F: 1 approved mathematics course (3 hours)
Category G: 1 approved perspectives course other than political science (3 hours)
The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

All Political Science majors must select a minor within the College of Arts and Sciences. Upon approval of the Department Head a student may select a minor outside the College of Arts and Sciences. Minimum of 2.0 average in minor.

Major and related courses:
One concentration from the following:

Public Administration Concentration:
3 hours Political Science 101
3 hours Political Science 102
3 hours Political Science 200
Related courses (12 hours):
3 hours Mathematics F210
6 hours from Economics C101, C102, 306, 404, 426, 444, 450 or 455
3 hours from English 277, 279 and 300

American Studies Concentration:
3 hours Political Science 101
3 hours Political Science 102
3 hours Political Science 200
9 hours from Political Science at the 200 level (excluding 200) including 3 hours from three of the following: Political Science 203; 213; 221 or 223; 233 or 234
9 hours from Political Science courses at the 300 level. Must include three hours of appropriate American Studies courses approved by the departmental advisor
15 hours from Political Science courses at the 400 level including at least 3 hours of appropriate American Studies courses approved by the departmental advisor and at least 3 but no more than 6 hours from Political Science 461r, 462r, 463, 464, 471r, 472, 480, 481, 495r, 497r, 498r or 499r

Related courses (12 hours):
3 hours Mathematics F210
3 hours Computer Science 110
3 hours from Economics C101 or C102
3 hours from English 277, 279 or 300

International Studies Concentration:
3 hours Political Science 101
3 hours Political Science 102
3 hours Political Science 200
9 hours from Political Science courses at the 200 level (excluding 200) distributed among three of the five subfields listed above. Must include Political Science 242 or 244
9 hours from Political Science courses at the 300 level. Must include Political Science 343, 345 or 346
15 hours from Political Science courses at the 400 level including at least 3 hours from International Studies area approved by the departmental advisor and at least 3 but no more than 6 hours from Political Science 461r, 462r, 463, 464, 471r, 472, 480, 481, 495r, 497r, 498r or 499r

Related courses (20 hours):
2 years of one foreign language at the college level
3 hours from Economics C101 or C102
3 hours from English 277, 279 or 300

Legal Studies Concentration:
3 hours Political Science 101
3 hours Political Science 102
3 hours Political Science 200
9 hours from Political Science courses at the 200 level (excluding 200) distributed among three of the five subfields listed above. Must include Political Science 321 or 322
9 hours from Political Science courses at the 300 level. Must include Political Science 321 or 322
15 hours from Political Science courses at the 400 level including at least 3 hours of courses from the public law subfield approved by the departmental advisor and at least 3 but no more than 6 hours from Political Science 461r, 462r, 463, 464, 471r, 472, 480, 481, 495r, 497r, 498r or 499r

Related courses (20 hours):
2 years of one foreign language at the college level
3 hours Philosophy 211
3 hours from English 277, 279 or 300
2.0 average in all Political Science courses
Minimum of 30 hours of 300 and 400 level courses
Approved program of elective courses outside the Department of Political Science sufficient to fulfill the general University requirement of 128 credit hours necessary for graduation; list of courses normally prepared by the student and approved by the departmental adviser.

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**Political Science (B.S.)'s public administration concentration**

**First Semester**
- **FRESHMAN**
  - Political Science 101
  - General Education Category A
  - General Education Category B
  - Economics C101
  - Physical Education 021
  - University Studies 101
  - Electives
  - Total

**Second Semester**
- **FRESHMAN**
  - Economics C102
  - Political Science 102
  - Physical Education Activity
  - Mathematics F210
  - General Education Category A
  - General Education Category G
  - Total

**SOPHOMORE**
- Political Science 200
  - 1 Political Science Course at the 200 level
  - General Education Category B
  - Elective
  - Total

**JUNIOR**
- 2 Political Science courses at the 300 level
  - English 277 or 279 or 300
  - General Education Category D
  - Elective
  - Total

**SENIOR**
- 2 Political Science courses at the 400 level
  - Electives
  - Total

**TOTAL HOURS 128**

**Political Science (B.S.): American studies concentration**

**First Semester**
- **FRESHMAN**
  - Political Science 101
  - General Education Category A
  - General Education Category B
  - Economics C101 or C102
  - Physical Education 021
  - University Studies 101
  - General Education Category C
  - General Education Category A
  - Electives
  - Total

**Second Semester**
- **FRESHMAN**
  - Elective
  - Political Science 102
  - Physical Education Activity
  - Mathematics F210
  - General Education Category C
  - General Education Category G
  - Total

**SOPHOMORE**
- Political Science 200
  - 1 Political Science course at the 300 level
  - General Education Category B
  - Electives
  - Total

**JUNIOR**
- 2 Political Science courses at the 300 level
  - English 277 or 279 or 300
  - General Education Category D
  - Electives
  - Total

**SENIOR**
- 2 Political Science courses at the 400 level
  - Electives
  - Total

**TOTAL HOURS 128**
### Political Science (B.S.)s legal studies concentration

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<td><strong>Total</strong></td>
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</tbody>
</table>

**TOTAL HOURS 128**
223 Introduction to Public Administration (3)
Principles of government organization, management, financial control, personnel practices, and administration. On demand.

233 State and Local Government and Politics (3)
Tennessee state and local government and politics with comparisons to government and politics in the other states. On demand.

234 The Presidency (3)
The nature of the presidency as an institution. Presidential decision making and relations with other branches of government. On demand.

242 International Relations (3)
An examination of the theoretical, historical and behavioral causes of war and peace. Focus on the role of power, sovereignty, and international law on world politics. On demand.

244 Comparative Public Policy (3)
The formation and implementation of social welfare policies in developed and developing nations. On demand.

302 Political Psychology (3)
Psychological bases for political action. On demand.

303 Politics and Communication (3)
Propaganda and other means of political and social control. On demand.

314 Contemporary Political Ideas (3)
The competing ideologies of the 20th century with emphasis on contemporary political and social thought including Marxism and Fascism. On demand.

316 Theories of Politics (3)
An introduction to such theoretical concerns of Western political science as sovereignty, rights, justice, property, liberty, and equality. Readings from Plato, Aristotle, Locke, Montesquieu, Mill and Marx. Formerly Political Science 212. On demand.

321 American Constitutional Law (3)
Case studies of key Supreme Court decisions affecting the distribution of power in American society. Formerly Political Science 222. On demand.

322 Civil Liberties (3)
Case studies of key Supreme Court decisions affecting the rights and freedoms of the individual in American society. On demand.

323 Law and Politics (3)
Lawyers, judges, police, and the political process. On demand.

324 Public Policy (3)
An examination of the public policymaking process with an emphasis on actors, administration, and evaluation. On demand.

330 Urban Public Policy (3)
An introduction to the different approaches, ideas and programs advanced to address public policy urban problems. On demand.

331 Urban Politics (3)
An examination of political competition and relations among groups, institutions and classes in urban areas. Particular attention is given to how economic and fiscal concerns impact upon the political process. On demand.

333 Political Parties and the Election Process (3)
An examination of America's two-party system, political machines, third parties, modern campaign techniques, electoral behavior, and election administration. On demand.

335 Congress (3)
The contemporary Congress. The roles of congressmen and women, the distribution of power within Congress, relations with other branches of government, and prospects of reform. On demand.

336 Women in Politics (3)
An examination of the role and status of women in the American political system. Special emphasis given to the impact of selected public policies upon women. On demand.

343r Comparative Government and Politics (3)
The study of the governmental structures, processes, and ideologies of different regions of the world, comparing their political, economic, and social policies. May be repeated to focus on different regions of the world. On demand.

345 American Foreign Policy (3)
The basic foreign policy problems confronting the United States. Spring semester.

346 Comparative Politics: China (3)
A study in comparative culture, history and politics as applied to the current government in the People's Republic of China with an emphasis on the factors which have shaped the government and politics of China since World War II. On demand.

350 Technology, Politics and Society (3)
An examination of the impact of technology on politics and society, with special focus on public policy shifts resulting from changes in technology. On demand.

401r Advanced Topics in Political Behavior (3)
Selected topics in political behavior. May be repeated once. On demand.

41r Advanced Topics in Political Theory (3)
Selected topics in political theory. May be repeated once. On demand.

421r Advanced Topics in Public Law and Administration (3)
Selected topics in public law and administration. May be repeated once. On demand.

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. On demand.

432 Southern Politics (3)
A study of the South's role in national politics with an emphasis on the demographic, economic, social and political forces which give shape to the political values and partisan preferences of the region's 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. On demand.

442r Advanced Topics in Comparative Government (3)
Selected topics in comparative government. May be repeated once. On demand.

461r, 462r, 463, 464 State Government Internship Program (3)
Internship conducted during the legislative session in governor's and legislative offices in Nashville. Spring semester. No more than 6 credit hours may apply toward the major degree requirements in the department. Prior approval of instructor.

471r, 472 Metropolitan Government Internship Program (1-3)
Internship conducted in various governmental offices in Chattanooga. Fall semester. No more than 6 credit hours may apply toward the major degree requirements in the department. Prior approval of instructor.

480 Senior Tutorial (3)
Independent research. Primarily for political science majors. On demand.

481 Judicial Honors Internship (3)
Internship conducted in the office of a local judge. Student applicants (any major) must have earned at least a 3.0 grade point average, completed 60 hours of coursework and taken and passed either Political Science 221 or Political Science 321. Selection by a Political Science Department committee.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
Every semester. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.
On demand.

General Education (see pages 22-23 for list of approved courses)

Requirements for the B.A. and B.S. degrees follow.

Psychology

Professor R. Metzger, Head

The Department of Psychology has developed a curriculum which meets the needs of a wide spectrum of interests. It is designed moreover to provide a broad but intensive educational experience for students in other fields who have an interest in particular areas of psychology which may bear upon other career plans or goals. The department offers both undergraduate and graduate degrees. Requirements for the B.A. and B.S. degrees follow.

Psychology (B.A.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)

Category C: 2 approved behavioral or social science courses other than psychology (6 hours)

Category D: 1 approved physical or natural science course with laboratory (4 hours)

Category F: 1 approved mathematics course (3 hours)

Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Foreign language through second college year

Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major and related courses

27 hours psychology including 101 and either Psychology 460, 461, or 412

One course from two of the following lines:

1. Philosophy 211, 348
2. History 301, 401
3. English 350, 400

No more than 6 hours of one psychology course labeled “r” and no more than 9 hours of all psychology courses labeled “r” will count towards the 27 hours required for the major.

2.0 average in psychology courses

Either Option A or Option B below:

Courses fulfilling the options may not be used to fulfill other requirements, including general education requirements, with the exception that courses used to fulfill either of the options may be used to fulfill the foreign language requirement.

Option A

An established minor from another department.

Option B

18 hours from one of the lines below.

At least three courses must be from the 200 level or above.

1. Biology, chemistry, physics
2. History, political science, sociology/anthropology, economics
3. Business administration, human services, military science, communication
4. Education, health and physical education (not to include service program courses)

5. Computer science, mathematics, engineering
6. English, fine arts, philosophy, history, communication, foreign language

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

Typical course of study in psychology (B.A.)

Representative Programs

It is recognized that the particular needs and interests of individual students vary widely. The accompanying typical courses of study are not intended to indicate, with the exception of the statistics and research methods course for the B.S. program, required courses of study. They are intended to serve as a model around which a student may construct his or her own program. Indicated are the general requirements for hours, limitations upon major hours for the B.A., and general education requirements.

First Semester

FRESHMAN

Psychology 101 3
Foreign Language 4
General Education Category A 3
General Education Category B 3
Physical Education 021 1
University Studies 101 3
Total 17

SOPHOMORE

Research Course 3
Psychology 3
General Education Category F 3
General Education Category B 3
Foreign Language 3
Total 15

JUNIOR

Psychology 3
Psychology 3
General Education Category C 3
Electives 6
Total 15

SENIOR

Psychology 4
Elective 4
Psychology 3
Major-related course 3
Major-related course 3
Electives 6
Elective 3
Total 16

TOTAL HOUR 128

Psychology (B.S.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)

Category C: 2 approved behavioral or social science courses other than psychology (6 hours)

Category D: 1 approved physical or natural science course other than psychology (4 hours)

Category F: 1 approved mathematics course (3 hours)

Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity
**Major and related courses**

33 hours of psychology including:

- 101, 201 or equivalent, 202, either 460 or 461 or 412
- Two courses from each of the following lines:
  1. Psychology 311, 312, 313, 314, 345
  2. Psychology 241, 308, 331, 421, 448

No more than 6 hours of one psychology course labeled "r" and no more than 9 hours of all psychology courses labeled "r" will count toward the 33 hours required for the major.

2.0 average in psychology courses

**Either Option A or Option B below:**

Courses fulfilling the options may not be used to fulfill other requirements, including general education requirements.

**Option A**

- An established minor in another department

**Option B**

18 hours from one line below. At least three of these courses must be from the 200 level or above.

1. Biology, chemistry, physics
2. History, political science, sociology/anthropology, economics
3. Business administration, human services, military science, communication
4. Education, health and physical education (not to include service program courses)
5. Computer science, mathematics, engineering
6. English, fine arts, philosophy, history, communication, foreign language

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

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**Typical course of study in psychology (B.S.)**

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<th>First Semester</th>
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<tr>
<td>Psychology 101</td>
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</table>

**TOTAL HOURS 128**

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**PSYCHOLOGY COURSES**

**100 Psychology Study Skills Laboratory (1 hour institutional credit)**

Intensive study of introductory psychology with demonstrations, computer simulations, and audio-visual study aids. Focus on study skills and behaviors, derived from psychological research, and applied to Psychology 101 lecture and textbook material to enhance learning. Fall and spring semesters. Credit not applicable toward any degree. Corequisite: 101.

**101 Introduction to Psychology (3)**

Development of the human from infancy to adulthood; selected topics in learning, motivation, emotion, and perception integrated in an exploration of the dimensions and processes of human adjustment from the standpoint of basic psychological theory and research. Every semester. May not be taken for credit if Psychology 103 has been taken previously.

**199r Special Projects (1-4)**

Individual or group projects. Every semester. Maximum credit 4 hours.

**201 Research Methodology: Introductory Statistics in Psychology (3)**

Descriptive and inferential statistics, research design, and computer analysis of psychological data. Unique applications of quantitative analysis to problems in research techniques in psychology, consideration of requirements for rigorous analysis of special problems in research in behavioral processes. Every semester. Prerequisite: 2 years of high school algebra or Mathematics 106.

**202 Research Methodology: Laboratory and Field Research Techniques (3)**

General introduction to research methods in psychology with an emphasis on basic strategies for empirically identifying causal and correlational relationships. Laboratory and field research techniques will be examined. Every semester. Prerequisites: Psychology 101 and 201 (or equivalent).

**221 The Psychology of Child Development (3)**

Infancy through childhood. Concepts of development and functioning derived from both research and clinical observation. Emphasis on cognitive, social, and emotional development. Child-rearing applications. Every semester. Prerequisite: 101 or equivalent. Credit not allowed in both Education 203 and Psychology 221.

**222 The Psychology of Adolescence and Adulthood (3)**

Psychodynamic principles of adolescent functioning. Evaluation of various theories of adolescence. Consideration of life-span development concepts and the adjustment problems related to aging. Emphasis on age-related changes. Every semester. Prerequisite: 101 or equivalent. Credit not allowed in both Education 204 and Psychology 222.

**223 Psychology of Aging (3)**

Theoretical and empirical introduction to the psychological development of older adults. Discussion of cognition, personality, social behavior, and sensori-motor changes as they evolve at the adult end of the life span. Examination of psychological issues in adult coping, death and dying, and work and family roles. Every semester. Prerequisite: 101 or equivalent.

**241 Psychology of Individual Differences (3)**

Consideration of individual differences in the dimensions of intelligence, personality, interests, and values. Discussion of group differences related to sex, age, race, social class, and intelligence. Examination of genetic and environmental factors influencing these differences. Fall semester.

**242 Psychology of Black Experience (3)**

Impact of cultural differences from a psychological perspective. Principles, theories and research in psychology applied to black experience. Differences in socialization, personality, and social processes. Topics include intelligence, racial identity, and psycholinguistics. Spring semester.

**251 The Psychology of Personal Adjustment (3)**

An overview of the major theories of adjustment and maladjustment, including classical psychoanalysis, neo-Freudian analysis, humanistic psychology, and social learning and behavior theory. Other topics will include the role of religion, economic status, and cultural context in adjustment. Every semester. Prerequisite: 101.
90— Psychology

308 Principles of Abnormal Psychology (3)
A bio-social approach to theories of causation, development, and symptomatic behavior in emotional disorder; theoretical bases of the various therapies and of positive means of prevention. Every semester. Prerequisite: 6 hours of psychology.

311 Learning and Motivation (3)
Study of the effective conditions for various learning phenomena; roles of motivation, reinforcement, and punishment in learning. Fall semester. Prerequisite: 101, 201 or equivalent, or by permission of instructor.

312 Sensation and Perception (3)
Study of sensory and perceptual processes; examination of the sense organs and related neurophysiological mechanisms, and the necessary stimulus conditions for particular perceptual phenomena. Laboratory. Spring semester. Prerequisite: 101, 201 or equivalent, or by permission of instructor.

313 Cognitive Processes (3)
Examination of the ways in which people process information; topics from perception, thinking, problem solving, and language behavior. Spring semester. Prerequisite: 101, 201 or equivalent, or by permission of instructor.

314 Physiological Psychology (3)
The study of the physiological bases of behavior with emphasis on the functional neural systems of the brain which mediate behavior. Laboratory designed to familiarize students with basic neuroanatomy and neurophysiological techniques used in the investigation of brain functions and behavior. Spring semester. Prerequisite: 101 or 6 hours of college biology courses, or permission of instructor.

316 Psychology of Communication (3)
An examination of complex behavioral processes within and between systems. The role of communications in thinking and problem-solving both by individuals and groups. Practical applications and problems of communication in such areas as management, market research, industry, and intelligence. Laboratory. Fall semester. Prerequisite: 101 or equivalent.

331 Social Psychology (3)
Survey of the general concepts and research areas in social psychology. Emphasis upon the interactions between the individual and society with consideration of such topics as attitudes, prejudices, conformity, deviance, socialization, and interpersonal attraction. May be registered for as Sociology 331. Every semester. Prerequisite: 6 hours of psychology or sociology. Credit not allowed in both Psychology 331 and Sociology 331.

345 Psychological Tests and Measurements (3)
Principles of psychological measurements including reliability, validity, errors of measurement, techniques of test construction, and problems in assessment and prediction. Laboratory use of selected tests. Fall semester. Prerequisites: 101, 201 or equivalent, or by permission of instructor.

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 and inferential techniques including the analysis of variance and multiple regression analysis. On demand. Prerequisite: 201 or equivalent 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 in behavior. Fall semester. 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. On demand. Prerequisite: 9 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. On demand. Prerequisite: 101 or equivalent; 6 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. Spring semester. Prerequisites: 6 hours of 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. On demand. Prerequisite: 18 hours of psychology or by permission of instructor.

421 Advanced Developmental Psychology (3)
An in-depth investigation of particular topics in human development, childhood through high school years. Focus on research methodology and findings in relation to social or cognitive development. Spring semester. Prerequisites: 101 or equivalent, 221 or 222, or equivalent.

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. Spring semester. 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. Every semester. Prerequisites: 6 hours of psychology.

451 Psychology of Women (3)
Analysis of empirical data and theoretical viewpoints concerning the psychological development of women. Psychological effects of sex roles, achievement motivation, and abilities of women; models of socialization practices, personality development, and stages of adjustment. Fall semester. Prerequisite: 6 hours of psychology and junior standing.

45 6r 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. On demand. Prerequisites: 6 hours of upper division psychology and approval of instructor. Maximum credit 6 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. Spring semester. Prerequisites: 9 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. Fall semester.

470 Psychology of Religion (3)
Analysis of empirical data and psychological theories involving religious beliefs, practices, and experiences. May be registered for as Religion 470. Every semester. Prerequisites: 6 units psychology or philosophy-religion.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See “Departmental Honors,” page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.
Social Work
See College of Health and Human Services.

Sociology and Anthropology
Professor Robinson, Head

Any student in good standing with the University may be admitted to the major program. Various concentrations within the major field have been designed to meet the special needs of students majoring in sociology, anthropology, or urban studies.

To enhance opportunities for the anthropology major and to provide services to the community, the University established the Institute of Archaeology in 1976. The institute is an instructional and research museum located in Brock Hall that specializes in archaeological investigations of 19th century industrial, domestic, and military sites. Students may use the collections and archives of the institute for academic projects. By enrolling in specified courses, students may also engage in archaeological survey and excavation, the analysis of archaeological data, the conservation of artifacts, and the organization of museum collections.

Sociology and Anthropology: General, Anthropology, Sociology, Urban Studies Concentrations (B.A.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses other than anthropology or sociology (6 hours)
Category D: 1 approved physical or natural science course other than anthropology with laboratory (4 hours)
Category F: 1 approved mathematics course (3 hours)
Category G: 1 approved perspectives course other than anthropology and sociology (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity

Foreign language through second college year

Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major
Completion of one of following concentrations

1. General:
33 hours sociology and anthropology including Sociology 151, 314, 394; Anthropology 152 or 208; Anthropology 302 or Sociology 312; plus 18 hours of sociology/anthropology electives of which 9 hours are at the 300-400 level.

2. Anthropology:
33 hours sociology and anthropology including Anthropology 152, 208, 210, 211, and 302; Sociology 314 and 394 or 9 hours of approved anthropology field and laboratory courses; 3 additional hours of sociology; additional hours of anthropology electives to complete concentration.

3. Sociology:
Mathematics F210
33 hours sociology and anthropology including Sociology 151, 312, 314, 394; Anthropology 152 or 208 plus 18 hours of sociology/anthropology electives of which 9 hours are in sociology at the 300-400 level.

4. Urban studies:
33 hours sociology and anthropology including Sociology 151, 314, 394; Anthropology 152 or 208; Anthropology 302 or Sociology 312; plus 18 hours of electives which 9 hours are at the 300-400 level (6 of the 18 hours must be selected from Sociology 209, 300, 317, 318, 345, 415)
18 hours additional from Economics 306, 455; Geography 415; Human Services 301; Political Science 101, 233, 323, 331, 401r and 421r (when appropriate to urban studies), 461r, 462r, 463,464, or 471r; Psychology 316,331,421,431, 456r

Recommended: courses in statistics and research methodology
2.0 average in all anthropology and sociology courses

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical courses of study for sociology and anthropology (B.A.)

Sociology and anthropology (B.A.): anthropology concentration

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TOTAL HOURS 128

* Sociology 314 and 394 may be taken in lieu of 9 hours of anthropology field and laboratory courses. Anthropology 335 offered in summer school (6 hours).
Sociology and Anthropology (B.A.): sociology concentration

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TOTAL HOURS 128

Sociology and Anthropology: Anthropology, Sociology, Urban Studies Concentrations (B.S.)

**General Education** (see pages 22-23 for list of approved courses)
- Category A: 2 approved courses in written communication in the English language (6 hours)
- Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
- Category C: 2 approved behavioral or social science courses other than anthropology and sociology (6 hours)
- Category D: 1 approved physical or natural science course other than anthropology with laboratory (4 hours)
- Category F: 1 approved mathematics course (3 hours; approved related courses below will apply)
- Category G: 1 approved perspectives course other than anthropology and sociology (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity.

Major and related courses
- Computer Science 110
- One course in written communication above the 100 level

Completion of one of the following concentrations:

1. **Anthropology:**
   - 33 hours of sociology and anthropology including Anthropology 152, 208, 210, 211, and 302; Sociology 314 and 394 or 9 hours of approved anthropology field and laboratory courses; 3 additional hours of sociology; additional hours of anthropology electives to complete concentration.

2. **Sociology:**
   - 33 hours sociology and anthropology including 151, 312, 314, 394; Anthropology 152 or 208; plus 18 hours of sociology/anthropology electives (at least 9 hours at 300-400 level) with 12 of the 18 hours in sociology.

3. **Urban studies:**
   - 33 hours sociology and anthropology including Sociology 151, 314, 394; Anthropology 152 or 208; Anthropology 302 or Sociology 312; plus 18 hours of sociology/anthropology electives of which 12 hours must be at 300-400 level (6 of the 18 hours of electives in the major to be selected from Sociology 209, 219, 300, 317, 318, 345, 415).
   - 18 hours additional from Economics 306, 455; Geography 415; Human Services 301; Political Science C101, 233, 323, 331, 401r or 421r (when appropriate to urban studies), 461r, 462r, 463, 464, 471r; Psychology 316, 331, 421, 431, 456r.
   - 2.0 average in all anthropology and sociology courses

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical courses of study in sociology and anthropology (B.S.):

**Sociology and anthropology (B.S.): anthropology concentration**

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TOTAL HOURS 128

*Sociology 314 and 394 may be taken in lieu of 9 hours of anthropology field and laboratory courses. Anthropology 335 offered in summer school (6 hours).
Sociology and anthropology (B.S.): sociology concentration

First Semester
FRESHMAN
Sociology 151 3
General Education Category B
Humanities 3
Mathematics 135 3
General Education Category A 3
University Studies 101 3
Physical Education 021 1
Total 16

Second Semester
Anthropology 152 or 208 3
General Education Category B
Fine Arts 3
Mathematics F136 3
General Education Category A 3
General Education Category C 3
Physical Education Activity 1
Total 16

SOPHOMORE
Sociology Elective 3
Mathematics F210 (Statistics) 3
General Education Category G 3
Computer Science 110 3
General Education Category C 3
Total 15

JUNIOR
Sociology 312 3
Sociology 314 3
General Electives 6
Other Social Science Elective 3
Total 15

SENIOR
Sociology or Anthropology Elective 3
Other Social Science Electives 6
General Electives 8
Total 17

TOTAL HOURS 128

SOCIOLOGY & ANTHROPOLOGY MINORS

Anthropology: A student may obtain a minor in anthropology by successfully completing Anthropology 152; 6 hours from Anthropology 208, 209, 210 and 211; and 9 hours of anthropology at the 300 or 400 level.
Total: 18 hours.
Minimum 2.0 average in the minor.

Sociology: A student may obtain a minor in sociology by successfully completing Sociology 151 plus 15 other hours in sociology, at least 9 of which are at the 300 or 400 level.
Total: 18 hours.
Minimum 2.0 average in the minor.

ANTHROPOLOGY COURSES

152 Introduction to Anthropology (3)
Cultural and biological development of human society as interpreted by the anthropologist from the remains of prehistoric life and the culture of contemporary humans. Every semester.

199r Special Projects (1-4)
On demand.

208 Cultural Anthropology (3)
The comparative study of culture, social organization, economics, government, education, religion, language, and arts in various primitive and present societies; cultural integration and change. Every semester.

209 Physical Anthropology (4)
The origins and relationships of extinct and present forms of humankind from the perspective of the modern synthetic theory of evolution. Mechanisms of heredity and fossil evidence of early primate and hominid populations. The nature of human variation and the development of culture in human evolution. Every semester. Prerequisite: 3 hours, laboratory 2 hours.

210 Anthropological Linguistics (3)
A first course in the nature of language and the analysis of linguistic structures with special reference to non-Western languages. On demand.

211 Introduction to Archaeology (3)
The study of human prehistoric and historic past through the archaeological record. Basic techniques, methods, theoretical approaches, and major conclusions of archaeological investigation. Every semester.

302 Anthropological Theory (3)
A systematic survey of the development of major theories in anthropology with particular attention to theories of culture. Spring semester alternate years. Prerequisite: 3 hours of anthropology.

306 World Prehistory (3)
Topics of world archaeology, covering the paleolithic in the old and new worlds and the search for the prerequisites of civilization. On demand.

310 Sex Roles and Culture (3)
Evolutionary and cross-cultural analysis of sex roles in human societies with special focus on the relative status of women. On demand. Formerly Anthropology 411: Prerequisite: Sociology 208 or approval of the instructor.

330 Ethnography Through Film (3)
The study of ethnographic film in the recording and analysis of material culture and communal life. Special attention is given to the documentation of vanishing cultures, influence of the film maker on informants, non-verbal communication systems, and the film as a scientific and humanistic resource. This course will be taught every third semester. Prerequisites: Anthropology 208 or approval of the instructor.

333 Peoples and Cultures of India (3)
Social and ethnological study of the peoples and cultures of India. Traditions and modernization analyzed in the light of the contact with the Western cultures. Uniformity and diversity of society in India compared and contrasted with the West. Fall semester alternate years.

334r American Indians (3)
Prehistory, ethnography, and contact history of indigenous peoples of the New World. May be repeated for credit when different topics have been specified as topics for different semesters. On demand. Prerequisite: any general education Category C course or approval of instructor.

335 Archaeological Field Methods (3 or 6)
Theory, method, and techniques of field research in archaeology, training and practice in surveying, photography, field recording, and other basic skills. On demand. Prerequisite: approval of the instructor.

340 Southeastern Indians (3)
Native Americans of the Southeast, their subsistence patterns, social organization, political structures, and belief systems, as derived from archaeological, documentary, and ethnographic sources. Emphasis is given to the late prehistoric and early historic periods. Prerequisites: Anthropology 208 or 211, or approval of the instructor.

351 Language and Communication (3)
The nature and evolution of communication, language, and speech. The relationship between language, culture, and society. Topics include nonverbal communication, animal communication, edinolinguistics, and sociolinguistics. On demand.

356 Archaeological Collections (3)
Principles of organization, analysis, and interpretation of prehistoric and historic archaeological materials. Techniques of preservation and presentation. On demand. Lecture 2 hours, laboratory 2 hours. Prerequisite: any general education Category C course or approval of instructor.
366r Communications Laboratory (3)
Laboratory methods and field techniques of research in human and animal communication. Individual or group projects. On demand. Prerequisite: any general education Category C course or approval of instructor.

410 Culture and Personality (3)
The influence of cultural patterns upon the development of personality; materials from simple and complex societies; national and tribal character, and relevant theoretical viewpoints. On demand. Prerequisites: 3 hours of sociology, anthropology, or psychology or approval of instructor.

425r Comparative Social Institutions (3)
The application of the comparative method in the analysis of sociocultural systems. Topics specified each semester. On demand. Prerequisite: any general education Category C course or approval of instructor.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
every semester. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
Every semester.

499r Group Studies (1-4)
On demand.

Sociology Courses

125 Sociology of Social Problems (3)
Sociological perspectives on selected contemporary social problems such as crime, poverty, hunger, racial and sexual discrimination, alcohol and drug abuse, the threat of war; examination of theories and research on social problems; analysis of possible solutions. Every semester.

151 Principles of Sociological Analysis (3)
Scientific study of human society, of how individuals and groups adjust to each other and to their social environment; examination of varying research approaches; consideration of basic concepts, theories, and principles of explanation used by sociologists. Every semester.

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit 4 hours.

209 Population and Society (3)
The study of population growth and decline, composition and distribution, and the interrelated effects of economics, social structures, and environment resources. Special emphasis is placed on problems of urbanization and population policies. Fall semester alternate years.

215 The Sociology of the Family (3)
The study of modern marriage and family institutions from sociological and social psychological perspectives; the social factors of mate selection, kinship relationships and sexual behavior; evaluations of research findings and emerging trends. Every semester.

219 Deviance and Conformity (3)
A social and psychological introduction to the nature and consequences of "normal" and "deviant" behavior. Theories of deviance with particular attention to role theory and labeling theory in the areas of crime and mental illness. On demand.

220 Small Group Behavior (3)
Social relationships and interaction within small groups in various contexts; review of major field and laboratory studies on leadership, communication, problem-solving, and personal satisfactions; experience in techniques of observation, role playing, and sociometric research. Spring semester alternate years.

225 History of Social Thought (3)
Trends in beliefs and values regarding human society, in their interrelationships in ancient cultures, and in Western thought to the 19th century. On demand.

250 Social Statistics (3)
Basic statistical techniques such as frequency distributions and graphs, the normal curve, tests of significance, correlation, simple analysis of variance, and applications to socio-cultural data and their interpretation. On demand. Prerequisite: approved computer science course or approval of instructor.

300 Urban Sociology (3)
Analysis of how urban areas grow and are spatially organized. Examination of the cultures, social stratification systems, and modes of governance in contemporary American cities. Emphasis on urban problems. On demand. Prerequisite: any general education Category C course or approval of instructor.

305 Minorities in American Life (3)
Character and role of racial, religious, and ethnic minorities in the U.S.; the interplay of historical and current sociocultural processes on attitudes and behavior for both dominant and minority groups; minority-related social problems and their possibilities of solution. Spring semester. Prerequisite: any general education Category C course or approval of instructor.

310 Sociology of Religion (3)
Social and cultural interpretations of religious institutions and the relation of religion to the social order; major emphasis upon theory and research in the context of Western Christian civilization. On demand. Prerequisite: 3 hours of Category C, philosophy or religion, or approval of instructor.

312 History of Social and Cultural Theory (3)
Scientific theories of social relations and culture from the 19th century to the present; the role of theory in an empirical science. Fall semester. Prerequisites: 151, or Anthropology 208, or approval of instructor.

314 Research Methods (Sociology or Anthropology Emphasis) (3)
The nature of the scientific method and research as applied to the collection, analysis, and interpretation of social and cultural data. An introduction to selected basic techniques in research and the preparation of research proposals. Fall semester. Prerequisite: 151, or Anthropology 152 or 208, or approval of instructor.

317 Organizational Behavior (3)
Structure of social relationships in organizational life; common patterns in development and operation of bureaucratic systems and their effect upon personal values and individual behavior applications in modern education, industry, government, and institutional life. On demand. Prerequisite: any general education Category C course or approval of instructor.

318 Industrial Sociology (3)
Social organization and process within the formal and informal structure of the industrial unit, evolution of stratification systems, the Industrial Revolution, bureaucratization and the individual, the implications of industrialization and urbanization for human relations in the work process. On demand. Prerequisite: any general education Category C course or approval of instructor.

320 Sociology of Law (3)
Law as a social phenomenon and as a social process. Historical and cross-cultural comparison of law, legal institutions, and enforcement of law. Special attention given to American law enforcement. On demand. Prerequisite: any general education Category C course or approval of instructor.

321 Criminology (3)
The nature of crime, criminal statistics, causal factors, theories and procedures in prevention and treatment. Fall semester. Prerequisite: any general education Category C course or approval of instructor.

322 Juvenile Delinquency (3)
The nature of juvenile delinquency; factors contributing to delinquency; methods of diagnosis and treatment of delinquent behavior; prevention of delinquency. Spring semester. Prerequisite: any general education Category C course or approval of instructor.

323 Sociology of Corrections (3)
Historical and cross-cultural study of adult detention, punishment, and rehabilitation systems. Examination of political and social values as they relate to corrections. On demand. Prerequisite: any general education Category C course or approval of instructor.
331 Social Psychology (3)
Every semester. See Psychology 331.

340 Collective Behavior (3)
Analysis of the varieties of collective phenomena such as crowds, social movements, public opinion, fads and fashion; examination of theories and research on the social context of this behavior and the social and psychological processes within such groups; case studies and examples from contemporary life. On demand. Prerequisite: any general education Category C course or approval of instructor.

345 Social Classes in America (3)
Theories and forms of social stratification; differentials in prestige, power, and wealth; social opportunities and mobility; values and behavior at various levels of American society. Fall semester. Prerequisite: any general education Category C course or approval of instructor.

360 Sociology of Aging (3)
A basic course in social gerontology. The process of aging and the problems of the aged. Changing values and institutional responses to the aged. Fall semester. Prerequisite: any general education Category C course or approval of instructor.

365 Sociology of Medicine and Health Care (3)
Social and cultural perspectives on health, illness, and the health professions and institutions. Topics will include social epidemiology, health attitudes and behavior, medical folklore, mental health, the socialization of health professionals, the organization of health care, patient-professional relationships, health and medical care in other cultures. Fall semester. Prerequisite: any general education Category C course or approval of instructor.

370 Social and Cultural Change (3)
How cultures develop, mature, and face disruption or decline, stability, and change; special attention to technological change, "cultural lag," and problems of developing nations and peasant societies. On demand. Formerly 440. Prerequisite: 3 hours of sociology or anthropology or approval of instructor.

394 Research Seminar (Sociology or Anthropology Emphasis) (3)
The use of social research techniques to report on social and cultural phenomena; data collection and analysis, writing of a research report. Research project required of all students. Spring semester. Prerequisites: 314, Mathematics 210 or Sociology 250 is required for all majors in the sociology concentration under the B.A. degree and for all taking the B.S. degree.

415 Urban Geography: Urban Land Development and Redevelopment (3)
On demand. See Geography 415

425 Advanced Sociology of the Family (3)
Examination of selected topics in the sociology of the family. Emphasis on the interaction between the family and the society. Special attention given to power relationships and gender roles in marriage and the family. Spring semester. Prerequisite: 215, or Human Ecology 205 or 340, or Social Work 210, or approval of the instructor.

430 Intergroup Dynamics (3)
Social and psychological aspects of prejudice, discrimination, and minority relations; effects of shifting social, economic, and power relationships; and examinations of varying strategies aimed at change, and their consequences. On demand. Prerequisite: 305 or approval of instructor.

431 Advanced Social Psychology (3)
On demand. See Psychology 431.

470r Special Studies and Problems (1-3)
Investigation and reporting on specialized topics in research or theory under faculty direction. Primarily for seniors. On demand. Prerequisite: permission of instructor. Maximum credit 6 hours.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
Every semester. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
Every semester.

499r Group Studies (1-4)

Spanish
See Foreign Languages and Literatures.

Theatre and Speech

Associate Professor Lewis, Head

Theatre and Speech (B.A.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses other than theatre and speech: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category E: 1 approved mathematics course (3 hours)
Category F: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Foreign language through second college year

Completion of a minor within the College of Arts and Sciences with a minimum 2.0 grade point average

Major and related courses
6 hours design and technical theatre: 141, 143
6 hours acting: 221, 223
6 hours directing: 331, 431
9 hours dramatic literature and theatre history: 151, 251, 253
9 hours of approved theatre and speech electives selected from 343, 421, 457, 461r, and 463r
6 hours (6 semesters) of performance and production: 2 hours each of 200r, 300r, and 400r
2 courses outside the department may count toward major with approval of department head
2.0 average in all theatre and speech courses

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical course of study in theatre and speech (B.A.)

First Semester
FRESHMAN
Theatre and Speech 141 3
Theatre and Speech 151 3
General Education Category A 3
University Studies 101 3
Foreign Language 4
Physical Education 021 1
Total 17

SOPHOMORE
Theatre and Speech 221 3
Theatre and Speech 200r 1
Foreign Language 3
General Education Category F 3
General Education Category C 3
Non-THSP Elective 3
Total 16

Second Semester
Theatre and Speech 143 3
Theatre and Speech 223 3
Theatre and Speech 200r 1
Foreign Language 3
General Education Category D 4
General Education Category B 3
Physical Education Activity 1
Total 15
96 — Theatre & Speech

JUNIOR
- Theatre and Speech 251 3
- Theatre and Speech Elective 3
- Theatre and Speech 300r 1
- General Education Category B 3
- Non-THSP Electives 6
- Total 16

SENIOR
- Theatre and Speech 331 3
- Theatre and Speech 400r 1
- Theatre and Speech Elective 3
- General Education Category G 3
- Non-THSP Electives 6
- Total 16

TOTAL HOURS 128

THEATRE MINOR
- Theatre: 19 hours including Theatre and Speech 143, 151, 251 or 253, and 343; 3 hours from Theatre and Speech 457, Classics 395,397, English 420,421, or 442r; 2 semesters of 200r and 2 semesters of 300r. Minimum 2.0 average in the minor.

THEATRE AND SPEECH COURSES

107 Voice and Diction (3)
- Systematic training of the speaking voice for controlled articulation, volume, and tone in interpersonal communication. Every semester.

108 Oral Interpretation (3)
- Systematic teaching of the principles and skills of effective oral reading with a continuing study of voice and diction. On demand.

109 Public Speech Communication (3)
- Practical application of the principles of public speaking and group discussion. Every semester.

111 Introduction to the Theatre (3)
- A study of the theatre and its drama; examination of selected plays as representative types of drama, as products of a cultural milieu, and as works intended for performance. Designed to heighten the student's perception, appreciation, and enjoyment of a variety of forms of theatre in performance. Every semester.

115 Theatre: Introduction to Performance (3)
- Introduction to acting and use of total instrument of the theatre. Emphasis upon dramatic theory and literature and their relationship to performance. Every semester.

141 Theatre Practice and Theory (3)
- A basic study of production organization; traditional and modern conventions and techniques involved in the use of the theatrical instrument; and application of these principles in the execution of scenery, costumes, properties and lighting for University Theatre productions. Formerly 101. Fall semester.

143 Basic Design in Theatre (3)
- Introduction to the principles and practices of designing theatrical environments and costumes for plays. Study and practice in analysis of various styles and types of plays; basic visual and spacial principles; developing theatrical imagery; and communicating design ideas. Spring semester.

151 Play Analysis (3)
- Nature of drama and theatre in its historical context with emphasis upon analysis of playscripts as the basis for creation of theatrical images. Formerly 105. Fall semester. Prerequisite: 199 Special Projects (1-4) Individual or group projects. Every semester. Maximum credit 4 hours.

200r Performance and Production (1)
- Lower division laboratory course in all aspects of theatre performance and production. Project assignments in departmental productions and workshops. Every semester. Prerequisite: permission of department head. Graded by faculty jury. May be repeated for credit.

209 Business and Professional Speech Communication (3)
- Study of the modes and processes of speech communication in organizations. Development of individual skills in group interaction and decision-making as well as informative and persuasive speech. On demand.

221 Acting I (3)
- Fundamentals of acting and of speech for the theatre. Formerly 227, Fall semester. Prerequisite: 151 and/or permission of instructor. Corequisite: 200r.

223 Acting II (3)
- Continuing development of basic acting and speech for theatre. Spring semester. Prerequisite: 221 and/or permission of instructor. Corequisite: 200r.

251 The Development of Drama in the Theatre (3)
- Forms and styles of theatrical literature from its beginnings in the classical age to the present. Fall semester.

253 Theatre in Western Civilization (3)
- An examination of the artistic and institutional development of the theatre from its beginnings to the contemporary period. Theatre architecture, scenic investiture, theatre organizations and modes and theories of performance. Spring semester.

280 Introduction to Film (3)
- The history and language of motion pictures studied by viewing and analyzing selected film masterpieces and the ideas they explore. Every semester.

300r Performance and Production (1)
- Upper division laboratory course in all aspects of theatre performance and production. Project assignments in departmental productions and workshops. Every semester. Prerequisite: 2 semesters of 200r and permission of department head. Graded by faculty jury. May be repeated only once for credit.

307 Advocacy and Debate (3)
- A study of contemporary procedures in deliberation, persuasion, and debate utilizing current topics of public interest. Emphasis on the development of individual skills in rational decision-making and advocacy through actual experiences in intercollegiate and parliamentary forms of debate. Formerly 320. On demand.

308 Readers' Theatre (3)
- The study of literature through group performance and the development of skilled verbal and nonverbal expression based on the critical examination of written texts. On demand.

309 Contemporary Public Speech Communication: Concepts and Cases (3)
- Study of rhetorical principles employed in addresses by contemporary leaders concerning significant current questions: practice in the application of rhetorical principles in speeches and oral reports. On demand.

331 Directing I (3)
- Basic elements of play directing: play analysis, director-actor communication, and the uses of improvisation. Each student will direct a short scene and participate in diagnostic criticism. Formerly 317. Fall semester. Prerequisites: 143, 223, 251, 253, and permission of instructor. Corequisite: 300r or 400r.

335 Costume Design (3)
- Basic procedures and principles of costume design for representative types and styles of drama. On demand. Prerequisites: 102, 105; Art 101; and permission of instructor.

343 History of Costume (3)
- Study of wearing apparel, principally in the western world from ancient Egypt to the present with a particular emphasis on clothing as a reflection of the cultural milieu. Formerly 313. Spring semester alternate years.

400r Performance and Production (1)
- Upper division laboratory course in all aspects of theatre performance and production. Projects assigned in departmental productions and workshops. Every semester. Prerequisite: 2 semesters of 300r and permission of department head. Graded by faculty jury. May be repeated only once for credit.

412 Theatre for Youth (3)
- All phases of producing plays for or by junior audiences examined, including the techniques of creative dramatics. On demand.
421 Acting III (3)
Scene study, interpretation, characterization, and introduction to period style. Emphasis upon individual needs of each actor. Formerly 327. Fall semester alternate years. Prerequisites: 223 and permission of instructor. Corequisite: 300r or 400r.

431 Directing II (3)
Directing of short scenes for laboratory presentation and participation in diagnostic criticism. Spring semester. Prerequisite: 331 and/or permission of instructor. Corequisite: 300r or 400r.

457 Conceptual Foundations of the Modern Theatre (3)
Studies in the concepts of selected playwrights, directors, and designers who helped to shape the directions of the twentieth-century theatre and its drama. Spring semester alternate years. Prerequisite: permission of instructor.

461r Directed Studies in Advanced Production (3)
Advanced problems in design and technical theatre. On demand. Permission of department head. May be repeated for credit.

463r Directed Studies in Advanced Performance (3)
Advanced problems in acting, directing, and musical theatre. On demand. Permission of department head. May be repeated for credit.

485 Film Topics (3)
Directors, genres, styles, or theories of film studied by viewing and analyzing representative films. On demand.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.

University Studies
See Interdisciplinary Studies.

University Honors Program
Professor Fulton, Director

Enrollment in courses taught in the curriculum of the University Honors Program is restricted to full members of the University Honors Program. The following courses make up the required curriculum for all full members, including Brock Scholars.

FRESHMAN
Fall Semester
University Honors 101 .......................................................... 3
Laboratory Science ................................................................. 4
Mathematics 155 ................................................................. 4
(if placement, test scores, and preparation indicate; otherwise, appropriate mathematics course)

Spring Semester
University Honors 102 .......................................................... 3
University Honors 114 .......................................................... 3
University Honors 120 .......................................................... 3

SOPHOMORE
Fall Semester
University Honors 115 .......................................................... 3

Spring Semester
University Honors 116 .......................................................... 3
IN FIRST TWO YEARS
One (1) course from:
University Honors 117 .......................................................... 3
University Honors 118 .......................................................... 3

Two (2) courses from:
University Honors 103 .......................................................... 3
Art 111H (Honors Introduction to Art) .................................... 3
Theatre and Speech 111H (Honors Introduction to Theatre) ........ 3

SENIOR
Departmental Honors 495 ....................................................... 4

NOTE: Requirements for the selected degree and major program must be met. Students in certain degree programs may have to obtain permission to alter the UHON curriculum schedule and/or extend their study beyond the fourth year in order to complete both UHON and degree program requirements.

For further information, contact the University Honors Program office, 202 Guerry.

101, 102 Humanities I & II (6,6)
Selected authors from the traditional corpus of Western literature with emphasis on historical and intellectual contexts; analysis of specific texts through seminar discussion and written work. 101 fall/102 spring semester. Limited to University Honors Program students; others by permission of instructor.

103 Fine Arts: Music History and Aesthetics (3)
A general review of the aesthetics and history of Western concert music. Spring semester. Limited to University Honors Program students; others by permission of instructor.

114 Classical and Medieval Historical and Political Thought (3)
Critical analysis of the origin and development of Western historical, political, and social theory from antiquity to the early Renaissance. Readings from the works of the central figures of the Greek city-state, Roman Empire, Medieval Church, and Renaissance Europe, including Herodotus, Thucydides, Plato, Aristotle, Livy, Tacitus, Plutarch, Augustine, Aquinas, and Machiavelli. Consideration of Gibbon as representative of historical interpretation. Spring semester. Limited to University Honors Program students; others by permission of instructor.

115 Origins of the Social Sciences (3)
Analysis of the origins, development and nature of the social sciences using contemporary theories and methodologies. Core texts from seminal thinkers such as Luther, Locke, Rousseau, Marx, and Durkheim, will be used as case studies of the developing modern social and human sciences. Limited to University Honors Program students; others by permission of instructor. Prerequisite: 114.

116 Contemporary Social Science (3)
The theory, methods and findings of contemporary empirical social science with an emphasis on social scientific understandings of individuals in the context of cultures and societies. Core texts from such authors as Marx, Freud, Weber and Levi-Strauss. Spring semester. Limited to University Honors Program students; others by permission of instructor. Prerequisites: 114, 115.

117 The Chinese and Japanese Traditions (3)
Readings of central texts in East Asian civilization, including Confucianism, Legalism, Taoism, Buddhism, Zen, as well as great works of literature. Discussion of texts and written analysis to facilitate comparisons with western thought. An appreciation of different intellectual traditions is a major goal. Fall semester. Limited to University Honors Program students; others by permission of instructor.
118 The Tradition of India (3)
A study of Indian culture through a reading of texts selected from classical and modern Indian literature, supplemented by lecture, audio-visual materials, and library materials. Spring semester. Limited to University Honors Program students; others by permission of instructor.

120 Development of Scientific Thought (3)
Selected topics in history of science designed to illustrate the methods by which science progresses. Creativity, characteristics of scientists, and their struggle with society will form the background for study of the advancement of science. Spring semester. Limited to University Honors Program students; others by permission of instructor.

199r Special Projects (1-4)
Individual or group project. On demand. Maximum credit 4 hours.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.
The College of Health and Human Services offers five distinct programs leading to baccalaureate degrees. These programs are criminal justice, human services, nursing, physical therapy, and social work. In addition to the undergraduate degrees, Master of Science degrees in Criminal Justice and Nursing are offered.

Each program is designed to prepare professional personnel to work in a variety of settings related to meeting human needs. The faculty and philosophy of the college emphasize the interdisciplinary relationships of the various fields of knowledge and practice.

The Center for Community Career Education, Tennessee's Early Intervention System and the Military Science Department are also administered through the College of Health and Human Services.

Military Science

Reserve Officers Training Corps (ROTC)

The primary objective of the Army Officer Education Program at UTC is to develop and commission men and women who have the qualification and potential for service as officers in the United States Army, the Army National Guard, or the Army Reserve.

Intermediate objectives are to provide students with an understanding of the fundamentals of responsibility, integrity, and self-discipline, as well as an appreciation of the citizen's role in national defense. The application of the decision-making process to a variety of situations is given major emphasis. Through study and application of the principles of leadership and management, the military science student develops self-confidence, self-discipline, and other desirable qualities that will contribute to success in any career. The advanced course offers the opportunity for a commission as a second lieutenant in the U.S. Army, the Army National Guard, or the Army Reserve. Advanced course students receive a $100/month subsistence allowance up to 20 months (total $2,000). Students attending Camp Challenge or Advanced Camp receive approximately $740 at the end of each month.

Scholarships
See under the financial aid section of the Bulletin.

Books and Uniforms
All books, uniforms, and materials needed for participation in the military science program are furnished at no cost to the student.

Education Delays
Newly commissioned officers may delay their entry on active duty in order to pursue graduate studies in a recognized field of study.

Four-Year Program
The four-year program consists of a basic course and an advanced course. Each course normally requires four academic semesters to complete.

Basic Course (no obligation incurred)
The basic course consists of Military Science 101 and Military Science 102 during the freshman year and Military Science 201 and Military Science 202 the sophomore year. During the courses the student is taught basic survival skills, mountaineering and rappelling techniques, map reading and land navigation, weapons familiarization, marksmanship, Army organization, leadership fundamentals, first aid, and physical fitness. All of these skills prepare and develop the student should he/she desire to continue into the advance course.

Advanced Course
The advanced course consists of Military Science III (junior year) and Military Science IV (senior year). Three hours in class, three hours of physical training (PT), and a two (2) hour leadership laboratory on Thursday are required each week. In leadership laboratory, the student develops, through practical application, the basic military skills necessary for the completion of advanced camp and commissioning.
The two-year program consists of the last two years (the advanced course) of the regular four-year program. The program is open to selected students who have four (4) full semesters of academic study remaining at UTC or any other accredited institution in the Chattanooga area. Selectees must have either completed three years of junior ROTC, have the required amount of prior military service, or completed six week ROTC basic camp. Additionally students must have attained 54 college credit hours and junior level status. Applicants must meet the same enrollment criteria as those students who enter the advanced course after completing the regular basic course.

**Camp Challenge - (4 Credit Hours)**

*No service obligation is incurred for attendance.* Camp Challenge is a six-week training course conducted at Fort Knox, Kentucky, usually during the summer vacation period between the student’s sophomore and junior years. This is an exciting and challenging camp which introduces the student to military life. Students are allowed to fire military weapons systems, are introduced to map reading and land navigation, first aid and CPR techniques, military tactics and physical training. Students earn over $740.00 plus room and board. Successful completion of the camp qualifies the student for entry into the advanced program.

### Requirements for Enrollment

The general requirements for enrollment in the basic course program are:

1. Be a citizen of the United States and of good moral character.
2. Be not less than 17 years of age or have parental consent.
3. Be physically and medically qualified.
4. Be enrolled as a full-time student at UTC or accredited, cross-enrolled institution in the Chattanooga area.
5. Execute a loyalty oath and not be a conscientious objector.

All students enrolled in the advanced course program must meet the following admission requirements:

1. Have either completed the ROTC basic course program; have three years of junior ROTC; have the required amount of prior military service; or, have completed the six-week ROTC basic summer camp.
2. Possess qualifications for becoming an effective Army officer.
3. Have, at the time of enrollment, a minimum of four (4) full semesters of academic work remaining, either graduate or undergraduate.
4. Meet scholastic screening requirements and have attained 54 college credit hours and junior level status.
5. Meet all general requirements as outlined above for enrollment in the basic course program.
6. Be selected for enrollment by the department head.

*Note: Graduate students are also eligible to participate in the Advanced Program pending the same enrollment requirements.

### Removal from candidacy for commission

1. A student once formally enrolled in the advanced course may be discharged from the ROTC program in the event he/she is placed on academic probation by institutional authorities as the result of substandard academic performance.
2. Students may be disenrolled from the Advanced ROTC Program for failure to meet physical or academic standards for disciplinary reasons, or for lack of officer-like aptitudes.
3. Once disenrolled a student is no longer eligible for a commission but may continue to take the course for academic credit only.

### Obligations

A student incurs no obligation to the military by participating in freshman or sophomore military science courses. The courses offer a cadet the opportunity to evaluate the prospect of military science and also to qualify for the advanced program beginning the junior year. When a cadet enters the advanced program, he or she is obligated to accept a commission as a second lieutenant in the United States Army Reserve (USAR) upon graduation.

### Military Science Curriculum

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS 101 Basic Survival and Military Skills</td>
<td>2</td>
</tr>
<tr>
<td>BS 102 Military Weapons and Fire Power</td>
<td>2</td>
</tr>
<tr>
<td>BS 201 Advanced Survival Techniques</td>
<td>3</td>
</tr>
<tr>
<td>BS 202 Military Management and Leadership Skills</td>
<td>3</td>
</tr>
<tr>
<td>BS 300 Camp Challenge</td>
<td>4</td>
</tr>
</tbody>
</table>

Total credit possible not to exceed 26

Students in MS 301, 302, 401 and 402 participate in the equivalent of two hours of leadership laboratory per week. Students in MS 101, 102, 201 and 202 will participate in the equivalent of one hour of leadership laboratory per week.

1. On the basis of previous honorable active military service in any branch of the armed services, or attendance at the basic summer camp, participation in the junior ROTC program in secondary schools, a student may be exempt from all or portions of the basic course.

2. With permission of the professor of military science (PMS).

### MILITARY SCIENCE COURSES

101 Basic Survival and Military Skills (2)

Organization, missions, and functions of the Army; Army Reserve and National Guard; ROTC orientation; historical development of the Army; practical experience in drill and ceremonies, rappelling, and basic map reading. Fall semester. Prerequisite: academic juniors and seniors require prior approval of department head.

102 Military Weapons and Firepower (2)

An introduction to the study of tactics; practical experience in riflery, drownproofing techniques, and basic first aid. Spring semester. Prerequisite: academic juniors and seniors require prior approval of department head.

201 Advanced Survival Techniques (3)

A comprehensive look at today’s Army and the role of the Army officer as developed through a study of the American military institutions, policies, activities, and traditions. Fall semester. Prerequisites: Military Science 101 and 102 or approval of department head. Academic juniors and seniors require prior approval of department head.
202 Military Management and Leadership Skills (3)
Analytical leadership skills and management techniques. Emphasizing problem solving, directional bearing oriented toward the development of proficiency in advanced map reading, and fundamentals of survival. Spring semester. Prerequisites: Military Science 101 and 102 or approval of department head. Academic juniors and seniors require prior approval of department head.

300 Camp Challenge (4)
Six weeks of training at Ft. Knox, Kentucky. Travel pay and salary stipend provided through the Military Science Department. The student is not obligated to any military service. Camp graduates are eligible to attend advanced military science courses. Fall semester. Credit not allowed with Military Science 101, 102, 201, 202, and with 300. Graded Satisfactory/No credit.

301, 302 Advanced Leadership and Management (3,3)
Roles of the various branches of the army; development of student's ability to prepare and present instruction; study of leadership and management; and study of the leader's role in directing and coordinating efforts of individuals and small units in the execution of offensive and defensive tactical missions. Fall semester 301; spring semester 302. Prerequisite: acceptance into die advanced course.

400 Army ROTC (4)
A six week statutory prerequisite to commissioning; conducted during the summer months following Military Science 302 at an army installation. Presentations made during subsequent semesters. Fall semester.

401, 402 Seminar in Leadership and Management (3,3)
Application of leadership principles stressing responsibilities of the leader through practical exercises in small unit tactics, leadership, and management problems involved in unit administration, materiel readiness, and military justice. Fall semester 401; spring semester 402. Prerequisites: 400 and History 350 or permission of department head.

Physical Therapy

Associate Professor Walker, Head

The Department offers a curriculum leading to a Bachelor of Science in Physical Therapy (B.S.P.T.) with a major in physical therapy. Students who have been accepted into the program are enrolled in the fall semester of their junior year and must be enrolled on a full-time basis for each of the six semesters of the program. The curriculum combines classroom and laboratory experiences with independent study and clinical experiences in a variety of health care settings.

Pre-physical Therapy
Students must meet the same admission requirements as all other applicants to the University. The prerequisites for the professional program are consistent with the general education requirements of the University, which are outlined elsewhere in this catalog. All students interested in pursuing physical therapy should seek advisement from the physical therapy faculty by calling the departmental office to schedule an appointment.

Admission to the Professional Physical Therapy Program
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 evaluated from appropriate information: overall grade point average, science grade point average, grade trend, the ability to handle a full academic load, general knowledge of physical therapy, demonstrated interpersonal abilities, interview, extracurricular and leadership activities, and maturity. The applicants with the best combination of these factors will be selected for the class. On the basis of this competition, students who are accepted will have an overall and science grade point average greater than 3.0 on a 4.0 grading scale. Residents of the state of Tennessee are given preference for admission.

Application forms will be available October 1 of the year preceding anticipated admission into the program. The completed application packet, including transcripts from all previously attended institutions of higher education and recommendation forms, must be submitted to the departmental office by 5:00 p.m. on February 1. It is the applicant's responsibility to assure that the packet of information is complete. Early submission of the application packet is encouraged. The decision of the admissions committee will be mailed to each applicant.

Prerequisite Courses
Sixty-two semester hours of coursework must be completed prior to initiating study within the professional program. A minimum of 45 hours of the prerequisites must be completed by the fall semester before the February 1 deadline for receiving applications. The 45 hours of prerequisites must include one course in English composition, one course in chemistry, one course in physics, one course in mathematics, and one course in psychology.

The courses listed are offered at UTC. Transfer students should enroll in comparable courses. Refer to the specific course descriptions.

<table>
<thead>
<tr>
<th>General Education</th>
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<tbody>
<tr>
<td>Freshman Seminar</td>
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Total 36 Total 26

Expenses and Transportation
Each student 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 junior and senior years of college. Physical therapy clinical experiences are scheduled throughout the academic year which require students to provide their own transportation to the clinical sites. Full time four-week and 12-week clinical experiences are scheduled during the summer semesters of both the junior and senior years. Students must be financially prepared for travel to and living expenses in other cities throughout the United States.
Continuation and Graduation Standards

In view of the nature of physical therapy and the fact that the quality of human life may be adversely affected by individuals providing physical therapy, the following standards will be applied by the physical therapy faculty.

1. To progress in physical therapy, students are required to:
   a) make a minimum grade of C in all physical therapy required courses (exclusive of electives);
   b) maintain a physical therapy cumulative grade point average of 2.5;
   c) maintain an active liability insurance policy for clinical courses;
   d) maintain current CPR certification.
2. Students who fail any portion of a clinical course series (PHYT 330, 331, 430, 431, and 490) may repeat the failed course(s) one time. However, the total number of repeated courses both at UTC and elsewhere must not exceed five courses. Additional failure (any grade less than C) in any portion of a clinical course series will result in dismissal from the physical therapy program. No courses other than clinical courses may be repeated.
3. If in the judgement 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.
4. Students who fail non-clinical courses may be denied progression in the program.
5. Exceptions to the above policies may be made at the discretion of the retention and progression committee or the head of the Department of Physical Therapy.

Graduation Requirements

The student will be considered a candidate for graduation upon the successful completion of all required clinical and didactic physical therapy courses, completion of a minimum of 149 semester hours, a minimum of 2.0 cumulative grade point average, 2.5 UTC average and a 2.5 average in physical therapy courses.

Physical Therapy (B.S. RT.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses, one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses (6 hours; related courses below will apply)
Category D: 1 approved physical or natural science course with laboratory (4 hours; approved related course below will apply)
Category E: 1 approved mathematics course (3 hours; approved related course below will apply)
Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

6 hours behavioral or social sciences including Psychology C101 and Psychology C241

30 hours mathematics, natural or applied science courses including Biology D121, 122; Chemistry D121, 122; Mathematics F145, F210; Physics D103, 104

Physical Therapy 301, 310, 312, 314, 316, 320, 330, 331, 350, 360, 380, 430, 431, 440, 442, 444, 446, 450, 452, 453, 454, 456, 462, 490, 493, 495r, or 497

Minimum grade of C in all physical therapy required courses (exclusive of electives)

Minimum of 30 hours of 300 and 400 level courses

2.0 average overall, 2.5 UTC average, and 2.5 average in physical therapy courses

Total hours: 149.

Typical course of study in Physical Therapy (B.S.P.T.)

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<thead>
<tr>
<th>First Semester</th>
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<td>SUMMER SESSION</td>
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TOTAL HOURS 149

PHYSICAL THERAPY COURSES

Enrollment in courses offered by the Department of Physical Therapy is only allowed by special permission of the faculty and department head.

301 Physical Therapy Skills (1)

To provide the student with basic patient care skills. Topics to be included are critical observation, universal precautions, medical chart review and medical terminology, methods of measuring and recording vital signs, basic wheelchair features, basic crutch gaits and transfer techniques, and emergency care, including CPR. Lecture 1 hour, laboratory 2 hours.
310 Gross Anatomy (6)
Details the study of the structure and function of the extremities, the head, neck and trunk. The study of embryology and histology of the organ systems are included. Lecture 3 hours, laboratory 6 hours.

312 Human Physiology (6)
Details the function of the organ system emphasizing mechanisms of control and regulation. Topics include function of the central nervous system, musculoskeletal system, cardiovascular system, respiration, and exercise physiology. Lecture 3 hours, laboratory 6 hours.

314 Kinesiology (3)
An introduction to kinesiology by the study of biomechanics, including statics and dynamics, osteoarthrokinematics, 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. Lecture 2 hours, laboratory 2 hours.

316 Anatomy and Physiology of the Nervous System (5)
Details structure and function of the central nervous system, correlation of the anatomical lesion, and the resultant clinical signs and symptoms. Lecture 3 hours, laboratory 4 hours.

320 Education and Communication (2)
Major consideration given to planning and implementing the educational aspects of learning. An additional purpose of this course is to help the student learn to establish effective interpersonal relations and communication skills. Emphasis will be placed on assertiveness, learning, and active listening behaviors.

330 Clinical Education 1 (1)
An introductory clinical experience following successful completion of all first semester didactic work. The student will work under the direct supervision of a physical therapist to observe the therapist's role in evaluating and treating physical therapy problems. The student will also have the opportunity to apply basic skills and communication and education techniques within the clinical setting. 40 clinical hours Graded Satisfactory/No credit

331 Clinical Education II (1)
This clinical experience will follow successful completion of all didactic work of the second semester. The student will work under the direct supervision of a physical therapist to apply principles and skills of second semester coursework. In addition, the student will begin to perform integrated findings of evaluation and initiate therapeutic intervention, with emphasis on the extremities, under guidance of a clinical supervisor. 40 clinical hours. Graded Satisfactory/No credit.

350 Musculoskeletal Assessment (1)
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. Laboratory 2 hours.

360 Psychosocial Reaction to Disability (2)
Includes the study of basic concepts and principles essential to the understanding of therapist/patient/family reactions to disabling disorders, Concepts of behavior management, death and dying, life style adaptations, and attitudes toward disability will be presented with respect to their influence on physical, psycho-social, and cultural aspects of an individual's quality of life. The course content will also include discussion of the roles of service professions and agencies and self-help groups in facilitating adjustment to disability.

380 Scientific Inquiry (2)
Teaches the importance of the scientific method in physical therapy. (A scientific approach is needed both to understand disease processes and to evaluate the efficacy of different methods of treatment.) The student should be able to examine the evidence for accepted methods of treatment, and to evaluate published research studies, with reference to hypothesis, methodology, conclusions and relevance to physical therapy practice. Prerequisite: Math 210 or PSY 201.

430 Clinical Education III (4)
This clinical course follows successful completion of third semester didactic work. The student will evaluate signs and symptoms, interpret findings, determine goals and establish and perform appropriate therapeutic interventions. This course will focus on the patient/client with musculoskeletal dysfunction of all age groups. The student will work under the direct supervision of a physical therapist. 160 clinical hours. Prerequisites: 330, 331. Graded Satisfactory/No credit.

431 Clinical Education IV (1)
This course will follow successful completion of all didactic work of the fifth semester. The student will work under the direct supervision of a physical therapist to evaluate signs and symptoms, interpret findings, determine goals and establish and perform therapeutic interventions of patient/clients of all age groups with neurological dysfunction. 40 clinical hours. Prerequisites: 330, 331, 430. Graded Satisfactory/No credit.

440 Pathophysiology of the Musculoskeletal System I (2)
Using case studies, this course will survey the clinical correlations of signs and symptoms of dysfunction of the musculoskeletal system, with emphasis on the extremities. Components of disease will be studied at the cellular, tissue, and organ levels.

442 Pathophysiology of the Musculoskeletal System II (1)
Using case studies, this course will survey the clinical correlations of signs and symptoms of dysfunction of the musculoskeletal system, with emphasis on the neck and trunk. Components of disease will be studied at the cellular, tissue, and organ levels.

444 Pathophysiology of the Nervous System (3)
Using case studies, this course will survey the clinical correlations of signs and symptoms of the cardiac, vascular, metabolic, pulmonary, and integumentary systems. Components of disease will be studied at the cellular, tissue, and organ levels.

450 Evaluation & Treatment of Patients with Musculoskeletal Dysfunction I (6)
Provides the student with the didactic and clinical applications of evaluative measures, therapeutic interventions, and treatment rationale for select musculoskeletal dysfunctions, with emphasis on the extremities. Lecture 3 hours, laboratory 6 hours.

452 Evaluation & Treatment of Patients with Musculoskeletal Dysfunction II (6)
Provides the student with the didactic and clinical applications of evaluative measures, therapeutic interventions, and treatment rationale for select musculoskeletal dysfunctions, with emphasis on the neck and trunk. Lecture 3 hours, laboratory 6 hours.

453 Human Growth and Development (2)
Investigation of human development across the life span. An emphasis will be placed on changes in cognitive, physical, and physiological processes.

454 Evaluation and Treatment of Patients with Neurological Dysfunction (6)
Provides the student with the didactic and clinical applications of evaluative measures, therapeutic interventions, and treatment rationale for select neurological conditions. Lecture 3 hours, laboratory 6 hours.

456 Evaluation and Treatment of Patients with Acute Care Disorders (5)
Provides the student with the didactic and clinical applications of evaluative measures, therapeutic interventions, and treatment rationale for select cardiac, vascular, metabolic, pulmonary, and integumentary conditions. Lecture 3 hours, laboratory 4 hours.

462 Physical Therapy Management (4)
Examination of the financial restrictions and cost containment in health care, efficient and effective use of available time, personnel, and equipment and financial resources. This course also provides a comparison and analysis of policies and procedures from various health care settings, departmental planning, and quality assurance activities.

490 Clinical Education V (12)
This clinical experience will follow the successful completion of all professional didactic courses and clinical courses. The student will evaluate signs and symptoms, integrate findings and initiate appropriate therapeutic intervention of any given patient/client in a variety of settings. The student will work under direct supervision of a physical therapist. 480 clinical hours, full time during the summer. Prerequisites: 330, 331, 430, 431.
493 Senior Seminar (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 between student, faculty, and clinical instructors.

495r Departmental Honors (1-4 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors", page 27.

497 Independent Study (1-3)
Opportunity to investigate some aspect of physical therapy or health care in greater depth than offered in other courses. This experience which is required of all senior physical therapy students, unless accepted into departmental honors, will be designed by the student with guidance from the appropriate faculty.

Major and related courses
Criminal Justice 410 or Psychology 308 or Sociology 321
Human Services 405
24 hours criminal justice including 1070, 1010, through Cleveland State Community College, plus UTC courses 301, 303, 450, 470 and 471

One of the following concentrations

1. Corrections:
   21 hours from CSCC Criminal Justice Program 1210; UTC Criminal Justice 312, 313, 314, 315, 320, 322, 330, 400, 403, 430, 465; Computer Science 110; Sociology 322, 323

2. Crime control:
   21 hours from CSCC Criminal Justice Program 1050; UTC Criminal Justice 322, 400, 402, 440, 465; Sociology 320; Human Services 301; Social Work 305; Political Science 323

3. Juvenile justice:
   21 hours from CSCC Criminal Justice Program 2210; UTC Criminal Justice 312, 313, 314, 315, 320, 322, 330, 350, 403, 406, 430, 465; Psychology 221, 222; Sociology 322; Social Work 305; Computer Science 110; Human Ecology 301

4. Law and the courts:
   21 hours from CSCC Criminal Justice Program 1020; UTC Criminal Justice 320, 400, 403, 405, 406, 408, 430; English 360, 370; Sociology 320, Political Science 322, 323; Business Accounting 330; Environmental Studies 410; Philosophy 211, 230; CSCC Law* 1010, 1020, 1040, 1050.

5. Law enforcement:
   21 hours from CSCC Criminal Justice Program 1020, 1050, 2110, 2310; UTC Criminal Justice 300, 310, 320, 322, 400, 402, 403, 405, 408, 430, 465, 470, 471; Political Science 323; Sociology 320

2.0 average in all Criminal Justice and Criminal Justice Program (CSCC) courses

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

*CSCC paralegal courses may not be taken during the last 60 hours.

Typical course of study in criminal justice (B.S.)

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<tr>
<th>First Semester</th>
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| **SOPHOMORE**   |                 |
| Sociology CI51  |                 |
| General Education Category B (American History) | Criminal Justice 301 |
| General Education Category B (Fine Arts) | General Education Category B (Literature) |
| General Education Category F | Sociology 321 or Psychology 308 |
| Mathematics F210 Statistics | Electives |
| Electives       | **8**           |
| **Total**       | **15**          |
| **TOTAL**       | **17**          |

| **JUNIOR**      |                 |
| Criminal Justice |                 |
| Concentration   | Criminal Justice |
| Criminal Justice 303 | Human Services 405 |
| General Education Category G | Electives |
| Sociology 314    | **3**           |
| Electives*      | **3**           |
| **Total**       | **15**          |
| **TOTAL**       | **18**          |
CRIMINAL JUSTICE COURSES

190r Institute in Criminal or Juvenile Justice (1-4)
Current topics in criminal and juvenile justice. Special programs, workshops, demonstration, and in-service courses. On demand.

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit 4 hours.

200 The Criminal and Society (3)
Historical and contemporary perspectives on the interaction between the criminal and society. Focus on the citizen's role as crime preventor, victim, and supporter of criminal activities. Every semester.

201 Violence in America (3)
An historical investigation into violence in America and the evolutionary response of criminal justice agencies. Every semester.

275 Drugs: The Law and the Community (3)

300 Psychology of Law Enforcement (3)
Psychology as applied to processes of communication among police and those individuals and groups with which they come in contact. On demand.

301 Information Systems in Criminal and Juvenile Justice (3)
An introduction to information management tools and processes of accountability as they relate to the two systems of justice. Every semester.

303 Comparative Criminal and Juvenile Justice Systems (3)
An examination of these two systems of justice as they function in other countries. Every semester.

310 Law Enforcement in Criminal and Juvenile Justice (3)
An examination of specific law enforcement problems as they relate to criminal justice and juvenile justice. Every semester.

312 Correctional Perspectives in Criminal and Juvenile Justice (3)
The development of priorities, goals, and standards for the correctional field. Fall semester.

313 The Volunteer in Criminal and Juvenile Justice (3)
An examination of the role of the citizen volunteer in the two systems of justice. Spring semester.

314 Correctional Casework (3)
The application of counseling and interviewing techniques and theory to the correctional client. Spring semester.

315 Prisoner's Rights (3)
Examination of the regulation of individual and collective behavior and the rationale for such restrictions during a period of confinement in a penal or mental institution. On demand.

316 Blacks and Criminal Justice (3)
Discussion of the black offender and the black criminal justice professional from the black perspective. On demand.

320 Advanced Administration in Criminal and Juvenile Justice (3)
Theory and practice of the administration of criminal justice system components. Every semester. Prerequisite: CJP* 1050 or approval of instructor.

322 Criminal Justice Planning (3)
An examination of the role of a criminal justice planning agency in a local, state, or federal system; and contemporary sources of funds for program planning, implementing, and evaluating. On demand. Prerequisite: 301 or approval of instructor.

325 Street Law (3)
An examination of criminal and civil law to emphasize the full range of the legal system and its application to everyday life. Elective credit; not applicable toward major. Every semester.

330 Probation and Parole (3)
An examination of the theory and practice of probation and parole with juvenile and adult offenders. Fall semester.

350 Juvenile Institutional Services (3)
An historical perspective of the evolution of juvenile institutions and their present day applicability and use. Spring semester.

400 Constitutional Law (3)
An examination of the leading constitutional principles pertaining to modern criminal procedure. Fall semester.

402 Organized Crime (3)
The effect of organized crime on the community, the government, legal systems, and the individual; and methods of combating organized crime. Every semester.

403 Management Concepts in Criminal Justice (3)
Theories of criminal justice management, motivation, communication, planning, and decision making. On demand. Prerequisites: CJP* 1050 and CRMJ 320, or approval of instructor.

405 Advanced Criminal Law (3)
Common and statutory law of crimes including national developments and trends, inchoate offenses, and defenses to crime. Fall semester. Prerequisite: CJP* 1070 or 112 or approval of instructor.

406 Advanced Juvenile Law (3)
Statutory and case analysis of judicial decisions, substantive juvenile law and procedures significant to practices of various agencies in juvenile justice. On demand. Prerequisite: CJP* 2210 (or 212) or approval of instructor.

408 Advanced Criminal Procedure (3)
Examination of the major legal and constitutional protections of the accused from initiation of investigation through post-conviction relief. Spring semester. Prerequisite: CJP* 1110 (or 113) or approval of instructor.

410 Theories of Criminal and Delinquent Behavior (3)
An analysis of theory and research on epidemiology and etiology of crime. Fall semester.

411 Criminal Justice Research Methodology (3)
Examination of the contemporary philosophy and techniques of research as applied in the criminal justice field. Every semester.

420 Administrative Advocacy (3)
Examination of a case for presentation to an administrative law court; review of record, legal research, preparation of a brief, and presentation of oral argument. Spring semester. Prerequisite: 301.

422 Advanced Planning and Evaluation in Criminal and Juvenile Justice (3)
Application of scientific methodology and analysis to problem solving. A research project will be designed and evaluated. On demand. Prerequisite: 322 or approval of instructor.
340 Science and Technology in Criminal Justice (3)
An exploration of the ways in which science and technology have influenced (and failed to influence) the practices, procedures, and problems of the criminal justice system. On demand. Prerequisite: completion of Category D requirements or approval of instructor.

450 Integrative Criminal Justice Systems Seminar (3)
Discussion of selected system-wide problems and topics in criminal justice. Research and oral presentation by the student. Every semester. Prerequisites: senior standing, criminal justice major, methodology course.

460 Dispute Resolution (3)
Alternatives to the courts for conflict resolution, including negotiation, mediation and arbitration. Discussion of legal issues, advantages and limitations of the alternatives. Laboratory exercises in applying these methods. Prerequisite: Completion of Category C.

465 Crisis Intervention (3)
Study of the theoretical bases for accurately assessing crisis situations and a guided practicum in techniques of crisis intervention. Every semester.

470, 471 Internship in Criminal or Juvenile Justice (3,6)
Supervised internship in a criminal justice agency. Admission to 470 or 471 requires written application filed with the internship coordinator no later than three months prior to the semester in which the student plans to enroll in Criminal Justice 470 or 471; personal interview with the internship coordinator; and a 2.00 grade point average, both overall and in criminal justice. Every semester. Prerequisite: criminal justice major, junior standing, and approval of instructor. Courses may be taken concurrently or consecutively.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.

CONSORTIUM COURSES
L/TC has entered into a criminal justice consortium agreement with Cleveland State Community College. Under this agreement, all required criminal justice courses at the freshman and sophomore levels—CJP 1070 and 1110—are taught by Cleveland State, and all courses at the junior and senior levels are taught by UTC. For the convenience of VTC students, Cleveland State Community College offers on the UTC campus these required courses listed below, and they are accepted as transfer credit. Questions concerning advisement and registration for Cleveland State courses should be directed to Dr. Roger D. Thompson, Coordinator, UTC Criminal Justice Program.

CJP 1010 Overview in Criminal Justice Systems (3)
Criminal justice administration emphasizing roles of police, courts, corrections and juveniles. 3 hours per week. Formerly CJP 101.

CJP 1070 Criminal Law (3)
Substantive aspects of criminal law, including general principles applicable to criminal conduct; specific analysis of particular crimes and substantive defenses to crimes. 3 hours per week. Formerly CJP 112.

*CJP—Cleveland State criminal justice consortium courses.
SOPHOMORE

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<th>Course</th>
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JUNIOR

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SENIOR

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**HUMAN SERVICES COURSES**

**Human Services: Allied Health Management (B.S.)**

**General Education** (see pages 22-23 for list of approved courses)

<table>
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<th>Category</th>
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<td>3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)</td>
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<tr>
<td>C</td>
<td>2 approved behavioral or social science courses other than human services (6 hours; approved related course below will apply)</td>
</tr>
<tr>
<td>D</td>
<td>1 approved physical or natural science course with laboratory (4 hours)</td>
</tr>
<tr>
<td>F</td>
<td>1 approved mathematics course (3 hours; approved related course below will apply)</td>
</tr>
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</table>

| Category G | Approved Perspectives course other than human services (3 hours) |

**The Freshman Seminar**

Health and Physical Education 021 plus one additional semester physical education activity

**Major and related courses**

License or registry in an American Medical Association approved allied health specialty required for admission to this concentration

Philosophy 425 or Sociology 365

12 hours including Business Management 315, Mathematics F210 or Sociology 314, Psychology C101, Psychology 221 or 222

23 hours including Human Services 101, 301, 330, 405, 410, 440, 450, 471

12 hours in approved allied health clinical courses from a community college

7 additional hours in approved allied health clinical courses in lieu of Human Services 470 for students licensed or certified in the field with a minimum of two years of experience as a practitioner

Completion of successful writing portfolio (see adviser)

2.0 average in all human services courses and Business Management 315

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours (the last 60 hours must be completed at four-year institutions with the last 30 hours at UTC)

**HUMAN SERVICES COURSES**

**100 Human Perspectives Study Laboratory (1 hour institutional credit)**

A study skills laboratory course designed to improve reading, writing, and thinking skills in the behavioral sciences. Although the general improvement of college level study skills is fostered, particular attention is paid to those skills as they relate to HSRV 101. Credit not applicable toward any degree. Corequisite: HSRV 101.

**101 Human Perspectives (3)**

A multidisciplinary introduction to behavioral science findings which examines the interaction between social systems and human development. Assumptions concerning Americans, the systems in which they live, and the resulting impact on social policy decisions are explored. Every semester.

**199r Special Projects (1-4)**

Individual or group projects. Every semester. Prerequisite: approval of the department head. Maximum credit 4 hours.

**202 Human Services Organizations in Urban Society (3)**

A study of aspects of the human services system that have evolved as a response to the characteristics of urban society, and the organizations which function as components of the system. (Formerly 102.) Spring semester.

**204 Women, Work and Society (3)**

The impact of women in the workforce upon women, families, and societal institutions. A close study of the cultural factors (historical, economic, social, and psychological) as they pertain to modern attitudes, beliefs, and practices concerning working women. Prerequisite: English 122 or equivalent.

**300 Perspectives on Work and Professions (3)**

A multidisciplinary examination of the social, ethical, political, and psychological environment of work and the professions. Emphasis on the historical development of the meaning and effect of work on the organization and development of various work structures and processes. Every semester. Prerequisite: English 122.

**301 Social Policy and Social Change (3)**

A cross-disciplinary examination of basic theories of social change. Analysis of social indicators as determinants of social policy for effecting social reform in the United States. Fall semester.

**330 Program Planning and Evaluation (3)**

Models of program planning and evaluation; emphasis on knowledge leading to basic competence in design and monitoring of human services programs. Spring semester.

**405 Interpersonal Skills Laboratory (3)**

A supervised laboratory experience designed to enhance the student's development of communication skills, interpersonal functioning, and the understanding of group processes. Every semester. Prerequisites: 6 hours of behavioral sciences and junior standing.

**410 Fund Raising and Fiscal Management in Human Services Settings (3)**

Fiscal administration in nonprofit and governmental settings. Financial structures of nonprofit agencies; techniques of fundraising, budgeting and budget control as tools for accomplishing program objectives. Prerequisites: Business Management 315, junior standing.

**440 Human Services Supervision (3)**

Concepts and techniques appropriate to supervision in human services and governmental agencies and organizations. Fall semester. Prerequisite: Management 315 plus one of the following: Management 330, 332; Sociology 317; Political Science 223; or approval of instructor.

**450 Seminar in Human Services Administration (3)**

Administrative procedure, processes, planning, and decision-making in human services and governmental settings. Spring semester. Prerequisite: 440 or approval of instructor.

**470 Full-time Field Instruction (7)**

Supervised internship in a human services setting related to a student's academic and career goals. Admission must be obtained from the director of field placement at least 90 days prior to enrollment in the course. In addition, Human Services: Management majors must present evidence of a minimum 2.0 overall grade point average, fulfillment of writing requirement, and completion of Human Services 440 before enrolling in Human Services 470. Spring semester. Prerequisites: 440, approval of the coordinator of field placement, and senior standing; pass writing requirement. Corequisite: 47lr (2 hours). Graded on a satisfactory/no credit basis. Maximum 7 hours total in field placement.

**47lr Field Seminar (1-2)**

Concurrent integrative seminar emphasizing issues common to field experience setting. Spring semester. Two hours maximum. Prerequisite: Pass writing requirement. Corequisite: Human Services 470, 472, or 474.
472, 474 Part-time Field Instruction (4) (3)
Spring semester. See Human Services 470 description. Corequisite: Human Services 471r (1 hour). Maximum 7 hours total in field placement.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 00.

497r Research (1-4)
Every semester.

498r Individual Studies (1-4)
Every semester.

499r Group Studies (1-4)
On demand.

Social Work
Associate Professor D. Williams, Coordinator

Accreditation
As of the printing of this catalog the Social Work program is conditionally accredited by the Council on Social Work Education. The program coordinator should be contacted regarding the current accreditation status.

Admission Policies
Enrollment in the social work program is limited to one hundred majors; application alone will not insure admission. Students pursue the Bachelor of Social Work degree. Students wishing to enter the social work program should designate presocial work as their major. Once this declaration has been made the student will be assigned to social work faculty for advisement. Presocial work majors are required to fulfill the following for admission to the social work program:

1. Earn a 2.0 cumulative grade point average in 45 semester hours which include the following prerequisite courses:
   - Biology 208, 209
   - Sociology 151 or Human Services 101
   - Psychology 101
   - Political Science 101
   - Economics 101
   - Anthropology 208
   - Social Work 150
   - Social Work 204
   - Social Work 205
2. Earn a minimum 2.6 grade point average in Social Work 150, 204, and 205.
3. Make candidacy known 60 days prior to the semester for which admission is sought by filing formal application.
   a. Obtain and complete application form from the office of the Coordinator of the Social Work Program.
   b. Submit written self-assessment.
   c. Write autobiography.
   d. Indicate subscription to the Social Work Code of Ethics.
4. Complete personal interview with a social work faculty member.
5. The Social Work Admissions and Continuation Committee (SWACC) reviews application and makes recommendations. The decision of the SWACC will be given to the applicants in writing. Those applicants granted admission will be assigned an academic adviser.
6. Upon acceptance in the program and completion of Social Work 300 students will file for field placement. All field placement assignments are made by the director of field instruction.

In the event that more qualified students submit applications than there are vacancies, the Social Work Admissions and Continuation Committee reserves the right to apply additional screening procedures.

Continuation Standards
The committee will review cases involving the academic, emotional, ethical, and professional fitness of social work students and will make recommendations regarding continuation in the program.

When majors complete the necessary prerequisites and present a grade point average of 2.5 in the major, they should submit written application to the SWACC for admission to the Advanced Social Work Methods course (Social Work 404) and Field Instruction II (Social Work 470). The application for both courses should be filed at least 90 days prior to the beginning of the semester in which these courses will be taken.

The student will be notified in writing of the SWACC's recommendations. All recommendations of the SWACC are subject to review by the coordinator of the Social Work Program, who may grant exceptions when deemed desirable or necessary. A grade point average of 2.5 in the complete major will be required for graduation.

Social Work (B.S.W.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each; approved related course below will apply)
Category C: 2 approved behavioral or social science courses other than social work (6 hours; approved related courses below will apply)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category F: 1 approved mathematics course (3 hours; approved related course below will apply)
Category G: 1 approved perspectives course other than social work (3 hours; approved related course below will apply)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses
46 hours social work core including 150, 204, 205, 300, 301, 304, 305, 370, 371, 400, 404, 406, 470, 471
43 hours cognate courses including Psychology C101 and one additional 3 hour course in psychology, Sociology C151 or Human Services C101, Anthropology G208, English 277 or 279 or 300, Human Ecology 328, Biology 208 and 209, Sociology 305, Psychology 308, Theatre and Speech 309, Philosophy B221 or 322 or B425, Mathematics F210, Political Science C101, and Economics C101
2.5 average in major and cognate courses combined

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours.
Typical course of study in social work (B.S.W.)
Any required cognate course that meets general education requirements may be used to fulfill both the major requirements and general education requirements.

First Semester
FRESHMAN
General Education Category A 3
General Education Category B 3
Humanities 3
Social Work 150 4
Human Services C101 3
Sociology C151 3
University Studies 101 3
Total 16

SOPHOMORE
Mathematics F210 3
Social Work 205 3
General Education Category G 3
Anthropology G208 3
General Education Category C 3
Psychology C101 3
Physical Education Activity 1
Biology 208 3
Biology 209 1
Total 17

JUNIOR
Social Work 301 3
Sociology 305 3
Human Ecology 328 3
Social Work 300 4
Theatre and Speech 309 3
Total 16

SENIOR
Social Work 400 3
Social Work 404 3
Social Work 470 6
Social Work 471 2
Total 14

TOTAL HOURS 128

1 Apply for admission to Social Work major.
2 File for Advanced Field and Methods.

SOCIAL WORK COURSES

SOCIAL WORK MINOR
Social Work Services for the Aged:
19 hours of Social Work courses including 150,160, 205, 431,432, 434.

100 Volunteerism and Civic Responsibility (2)

102 Volunteer Community Experience (1-2)

150 Introduction to the Field of Social Welfare (4)
An introduction and orientation to selected social welfare professions. An examination of the history and recent trends in social work and related fields. A minimum of 45 hours of observation and supervised volunteer service in appropriate settings required. Every semester.

160 Sign Language with the Deaf (3)
A beginning analysis of the effect of deafness on communication and introduction of sign language for communication with the deaf. Every semester.

199r Special Topics (1-4)
Individual or group projects. On demand. Prerequisite: approval of department head. Maximum credit 4 hours.

204 Explorations in Human Relations (3)
A systematic examination and analysis of social and psychological phenomena occurring in human transactions. Development of essential knowledge of affective behaviors, relations with others, and the dynamics of communication processes. Every semester.

205 Social Welfare Policy and Delivery System (3)
Survey of social welfare delivery systems with emphasis on policy description, formation, and analysis. Attention given to historical development and present structure. Every semester. Prerequisite: 150. Credit not allowed in both Human Services 303 and Social Work 205.

206 Referral Services (3)
A study of the referral process with emphasis on the development, analysis, and utilization of informational and resource systems. On demand.

210 Comparative Studies in Minority Family Life (3)
A systematic examination of variations in the family through a comparative analysis of select racial and ethnic minority families. Every semester.

211 Social Functioning of the Black Family (3)
An examination of the black family as a social system and the impact of the larger society upon that system. Prevailing myths, distortions, and generalizations about the black family will be explored. On demand.

250 Charity in Western Civilization (3)
An historical examination of the structure and philosophy of man's response to the needy in Western civilization. Every semester.

300 Basic Skills for Social Work Practice (4)
Fundamental skills and theory for practice in the field of social work. Emphasis upon communication skills, informational systems, organizational structure, policy, and their impact upon role execution. Every semester. Not open to pre-social work students.

301 Human Behavior Environmental Systems (3)
Examination of the various levels of human growth, development, and behavior with a focus on environmental systems. Every semester. Prerequisites: Anthropology 208, Psychology 101, Biology 208 and 209. Not open to pre-social work students.

304 Introduction to Social Work Methods (3)
An introduction to the methods, procedures, value orientations, and functions common to social work practice. Consideration of the relationship of such methods and procedures to crises in social functioning and human development. Fall semester. Prerequisites: 204, 205, 300. Corequisites: 370, 371 •
305 Legal Issues in Social Work (3)
Identification and analysis of common legal issues and problems encountered by the professional social worker. Fall semester. Prerequisite: English 277 or 279 (or former 200) or 300.

315 Child Welfare Services and Policies (3)
An examination of contemporary issues and questions in the field of child welfare with emphasis upon child abuse and neglect (both institutional and parental), child care, health, adoptions, and services to the unwed parent and the out-of-wedlock child. On demand.

320 Introduction to Social Group Work Practice (3)
An introduction to theoretical frameworks for using social groups as mediums to bring about individual and group social treatment; identification and examination of group development and processes with specific reference to principles for social group work practice. On demand.

370 Field Instruction I (4-6)
An opportunity for application and integration of method theory through supervised experiential learning in a social agency or setting. A minimum of 12 hours per week in such setting and a 1-hour integrative seminar required. Fall semester. Prerequisites: 204, 205, 300. Corequisites: 304, 371.

371 Field Seminar I (2)
An integrative seminar emphasizing issues common to social work theory, methods, and field experience. Fall semester. Prerequisites: 204, 205, 300. Corequisites: 304, 370.

400 Social Welfare Policy Research (3)
An examination of the role of research in social policy; its functions in identifying needs, describing and evaluating programs, analyzing processes, and predicting results. A major project integrating course concepts and content with field experience required. Spring semester. Prerequisites: 205, Mathematics 210. Corequisites: 404, 470, 471.

401 Introduction to Social Work Practice in the Health Field (3)
Designed to introduce the student to the health care system. Focus will be upon the effect this system has for social work. On demand. Prerequisite: 301; other students admitted by written permission of instructor.

404 Advanced Social Work Methods (3)
Additional opportunities for students to refine and extend their skill in social work intervention. Examination of theories of intervention and implications for practice. Attention given to practice in selected specialized settings. Spring semester. Prerequisites: 300, 301, 304, 370, 371; Mathematics 210. Corequisites: 400, 470, 471.

406 Social Values and Ethics in Social Work Practice (3)
An in-depth study of the consequences of prejudice for social work practice with the disadvantaged, minorities, and culturally different. Not open to pre-social work students. Fall semester.

411 Social Work and Family Dysfunction (3)
An examination of problems experienced by dysfunctioning families in contemporary American society and the role of social work in relation to these problems. Specific areas of concentration will include emotional and physical abuse (both child and adult), child neglect, divorce, changing values relating to sex roles and patterns of heterosexual and homosexual relationships. On demand.

415 Child Abuse (3)
An examination of dynamics in abusing families with emphasis on causal models. Analysis of the child welfare system, public agencies, the courts, and role of law enforcement. Developmental delays and deviations in personality resulting from abuse will be evaluated from a psychiatric perspective. Discussion of model systems for emergency intervention and treatment. On demand.

420 The Social Welfare System: Its Impact Upon Women (3)
A critical analysis of the social welfare system's impact upon women; analysis of their roles as consumers and providers of social welfare services. On demand.

421 Crisis Counseling: Women (3)
Designed to introduce the student to crisis counseling. Focus will be on the special crises that occur in women's lives. On demand.

430 Social Work Practice with the Dying (3)

431 Social Work Practice for the Aged (3)
A multi-disciplinary approach to the development of an understanding of the roles, treatment modalities, and practice settings in which the professional social worker may become involved working with older adults. On demand.

432 Geriatric Social Services (3)
Consideration will be given to the various strategies of social intervention designed to meet the specific needs of the aged population. Attention will also be given to social policy development in the area of aging. On demand.

434 Adaptation to Loss in Later Life (3)
Focus on the many losses associated with everyday living for the elderly, including such events as nursing home placement, death, separation, and aging with emphasis on intervention skills for the service provider. On demand.

440 Social Work Supervision (3)
An examination of the objectives and methods of social work supervision. On demand.

450 Community Organization: Theories and Methods (3)
Identification and analysis of theories and methods of community organizing. Emphasis upon organizing and planning strategies and tactics for group mobilization and social change. On demand.

470 Field Instruction II (6)
Advanced field instruction in a supervised social work setting. A minimum of 20 hours per week required in such setting. Students must demonstrate necessary knowledge and skills required for beginning practice. Concurrent 2-hour integrative seminar emphasizing issues common to field experience. Spring semester. Prerequisites: 300, 301, 304, 370, 371; Mathematics 210. Corequisites: 400, 404, 471.

471 Field Seminar II (2)
An advanced integrative seminar emphasizing issues common to social work theory, methods, and field experience. Spring semester. Prerequisites: 300, 301, 304, 370, 371; Mathematics 210. Corequisites: 404, 470.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand. Prerequisite: approval of department head.

498r Individual Studies (1-4)
On demand. Prerequisite: approval of department head.

499r Group Studies (1-4)
On demand. Prerequisite: approval of department head.
School of Nursing

Associate Professor Chitty, Director

Accreditation
The School of Nursing is approved by the Tennessee Board of Nursing and is accredited by the National League for Nursing.

Prenursing
Students must meet the same admission requirements as all other applicants to the University. Academic advising for all students declaring prenursing or nursing majors must be done by a member of the nursing faculty.

Enrollment in the nursing major is limited. Admission to the University does not insure acceptance into the nursing major.

Admission to the Nursing Major
Students desiring admission or readmission to the nursing major must submit written application on forms available from the faculty in the School of Nursing. Candidates for Nursing 205 must make formal application during the spring semester of the year preceding the January enrollment. Readmission or transfer students should submit written application three months prior to the desired enrollment date.

1. Completion of 45 semester hours including the following prerequisite courses with no grade lower than a C and a minimum grade point average of 2.5 on a 4-0 point scale at UTC.
   - Chemistry 121, 122
   - Biology 191, 208, 209, 210
   - Sociology 151 or 215
   - English 121, 122
   - Psychology 101, 221
   - Nursing 100

   Students who have credit for chemistry, microbiology, or physiology which was received 10 years prior to admission to the nursing major must either repeat or test out of these courses.

2. Personal interview with a member of the nursing faculty.

3. Physical and emotional characteristics appropriate for nursing practice.

4. Science competency - the nursing major includes a strong biophysical science component; therefore, individuals who have repeated any science course will be considered on a selected basis.

The faculty in the School of Nursing reserve the right to make exceptions to the admission requirements. Written requests for exceptions to admission requirements, supported by evidence of extenuating circumstances, will be considered by the committee for admissions after an official application for admission has been filed.

Preference will be given to applicants with a composite ACT score of 20 or higher who have completed their prerequisite courses at UTC. Students with a lower ACT score may be required to take certain additional courses and/or diagnostic testing as prescribed by the director of the School of Nursing.

Candidates will receive written notice of their admission status. Acceptance of transfer and substitute credits in nursing to meet requirements of the curriculum will be determined by the school faculty. Transfer students must meet the same standards as other students in the program.

Expenses and Transportation
In addition to regular education costs, nursing students must meet the following expenses: uniforms, standardized test fees, and yearly liability insurance. Some nursing courses require lab fees. Since clinical experiences in nursing are obtained in a variety of health care settings in local and remote areas, students are individually responsible for transportation to these sites.

Licensure
Upon successful completion of the baccalaureate program in nursing, including attaining a score of 75 percent or higher on standardized nursing achievement test, and upon certification by the faculty and director that the student possesses the necessary attributes for entering the nursing profession, graduates will be eligible to write the National Council of State Boards of Nursing Licensure Examination. Persons previously convicted of a felony may not be permitted to write the NCLEX exam.

Continuation Standards
In view of the nature of nursing and the fact that maintenance and quality of human life may be adversely affected by individuals providing nursing care, the following standards have been adopted and are applied by the nursing faculty.

1. To progress in nursing, students are required to: a) make a minimum grade of C in all nursing and required courses (exclusive of electives); b) maintain a cumulative grade point average of 2.0; and c) maintain an active liability insurance policy for clinical courses; and d) maintain current CPR certification.

2. A student who transfers into the nursing program at UTC will be required to repeat any nursing or other required courses which are not considered comparable to the UTC curriculum or in which the grade earned is lower than a C.

3. Students who fail any portion of a clinical course series* may repeat the failed course(s) one time. Additional failure in any portion of a clinical course series will result in dismissal from the nursing program.

4. If in the judgement of the professor there is reason to question the emotional or physical condition of a student or the safety or quality of nursing care provided, the professor has the right and obligation to exclude the student from the clinical area. The incident or reason underlying such an action shall be brought to the attention of the course faculty on or before the next clinical day. The student will receive written notification of the recommendation of the course faculty. Should the decision be unacceptable to the student, he/she may appeal to the director, and thereafter in accordance with University policy.

*Includes nursing and required courses.
5. Students who fail non-clinical courses may be denied progression in the program.

6. Exceptions to the above policies may be made at the discretion of the committee for admissions and progression or the director of the School of Nursing.

*Clinical courses series includes Nursing (314, 315), (318, 319, 320), (414, 415, 416), (418, 419, 420).

**Gateway Program for Registered Nurses**
The Gateway Program is a flexible curriculum which enables registered nurses to obtain baccalaureate degrees in nursing while maintaining their roles in careers and families. Planned with the mid-career RN in mind, the Gateway Program is individualized and allows maximum college credit for previous educational experiences. The prospective RN student is encouraged to seek advisement from the RN Coordinator and transcript evaluation from the Records Office prior to embarking upon this program of study.

### Nursing (B.S.N.)

**General Education** (see pages 22-23 for list of approved courses)

**Category A:** 2 approved courses in written-communication in the English language (6 hours)

Category B: 3 approved courses, one from humanities, one from fine arts, and one from either (3 hours each)

Category C: 2 approved behavioral or social science courses (6 hours; related courses below will apply)

Category D: 1 approved physical or natural science course with laboratory (4 hours; approved related course below will apply)

Category F: 1 approved mathematics course (3 hours; approved related course below will apply)

Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

**Major and related courses**

2.5 average required for admission to the nursing major with no grade lower than C in any required prerequisite course.

12 hours behavioral sciences including: Psychology C101, 221, 223; Sociology C151 or C215

23 hours mathematics, natural, or applied science courses including: Biology 191, 208, 209, 210; Chemistry D121, D122; Mathematics F210; Human Ecology 105

Nursing 100, 205, 314, 315, 316, 317, 318, 319, 320, 414, 415, 416, 417, 418, 419, 420, 421, and 430

Minimum grade of C in all nursing and required courses (exclusive of electives)

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

**Typical course of study in nursing (B.S.N.)**

**First Semester**

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<td>Introduction to Nursing 100</td>
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<td>English A121</td>
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<td>Psychology C101</td>
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**Second Semester**

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<td>Chemistry 122</td>
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<td>Biology 191</td>
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**Total** 178

**SOPHOMORE**

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<tr>
<td>Human Ecology 105</td>
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<td>Sociology C151/215</td>
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**JUNIOR**

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<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Psychosocial Nursing Concepts</td>
<td>3</td>
</tr>
<tr>
<td>Adult Nursing Concepts I</td>
<td>3</td>
</tr>
<tr>
<td>Nursing 315</td>
<td>4</td>
</tr>
<tr>
<td>Psychosocial Nursing Care</td>
<td>4</td>
</tr>
<tr>
<td>Physical Assessment 317</td>
<td>3</td>
</tr>
<tr>
<td>Nursing Research 321</td>
<td>3</td>
</tr>
<tr>
<td>Category B Elective</td>
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<tr>
<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>

**SUMMER SESSION**

Nursing 430, Clinical Nursing Preceptorship

**SENIOR**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing 414</td>
<td>3</td>
</tr>
<tr>
<td>Concepts of Primary Care</td>
<td>4</td>
</tr>
<tr>
<td>Nursing 415</td>
<td>3</td>
</tr>
<tr>
<td>Community Health Concepts</td>
<td>4</td>
</tr>
<tr>
<td>Nursing 416</td>
<td>3</td>
</tr>
<tr>
<td>Care in the Community</td>
<td>4</td>
</tr>
<tr>
<td>Leadership in Nursing 421</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
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<tr>
<td><strong>Total</strong></td>
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</tbody>
</table>

**TOTAL HOUR 128**

*Cumulative GPA of 2.5 is required for admission to Nursing 205.

**Credit hours will be 3 until 1992 when hours decrease to 2
Curriculum revision is in process. Some change in sequence, hours, and GPA may occur. Revised and approved December 1990.

**NURSING COURSES**

**100 Introduction to Nursing (3)** Theoretical introduction to concepts used in nursing practice. Required for pre-missing students. Open to non-majors. Every semester.

**199r Special Projects (1-4)** Individual or group projects. On demand. Maximum credit 4 hours.

**204 Concepts of Health Awareness (3)** A bio-social approach to health awareness and a positive life-style. Open to non-majors. On demand.

**205 Nursing Process (5)** Theory and application of basic nursing knowledge and skills necessary to provide a basis for baccalaureate nursing practice. Spring semester. Prerequisite: admission to nursing major. Math 106 with minimum grade of Cor Level 20 on math placement exam. Corequisite: Psychology 223.

**222 Women’s Health Issues (3)** A review of current literature and discussion of issues affecting contemporary women’s health. The course will introduce the biological, psychological, social, economic, and cultural factors which affect the health of women in Western society. Students will be challenged to examine their attitudes on controversial issues such as birth control, childbirth alternatives, abortion, women’s self image, and aspects of aging. On demand. Prerequisite: English 122 or its equivalent. Open to non-majors.
300 Pharmacology (3)
An overview of pharmacology including drug classifications, action, use, and nursing implications and drug interactions. Legislation pertinent to drug control included. On demand.

314 Psychosocial Nursing Concepts (3)
Interpersonal, behavioral, and communication theories related to clients experiencing psychosocial difficulties. Every semester. Prerequisite: 205. Corequisite: 315.

315 Psychosocial Nursing Care (4)
Application of interpersonal, behavioral, and communication theories and concepts to clients experiencing psychosocial difficulties. Every semester. Laboratory: 12 clock hours. Prerequisite: 205. Corequisite: 314.

316 Pathophysiology (3)
Study of the causes of disease and the structural and functional alterations that occur in the illness process. Every semester. Prerequisite: 205 or permission of director.

317 Physical Assessment (3)
Physical examination and health history presented in the context of nursing practice. Every semester. Prerequisite: 205 or permission of director.

318 Adult Nursing Concepts I (3)
Concepts necessary to provide acute secondary care interventions for individual adult clients with problems relating to fluids, food, elimination, and safety and security. Every semester. Prerequisite: 205. Corequisites: 319, 320. Pre- or Corequisites: 316, 317.

319 Adult Nursing Concepts II (3)
Concepts necessary to provide acute secondary care interventions for individual adults with problems related to basic needs for oxygen, sensory-motor, and reproductive functions. Every semester. Prerequisite: 205. Corequisites: 318, 320. Pre- or Corequisites: 316, 317.

320 Adult Nursing Care (4)

321 Nursing Research (3)
Beginning knowledge and techniques in nursing research. Every semester. Prerequisites: 205 or permission of director; Mathematics 210.

322 The Physical Process of Aging (3)
A study of normal and pathological physical changes that are linked with the aging process. This course will include the implications of the physiological changes as well as strategies designed to ameliorate or limit health problems that may develop as individuals age. On demand. Open to non-majors.

414 Concepts of Primary Care Nursing (3)
Study of the nursing process relating to the care of family systems and groups in the home or ambulatory care setting. Prerequisites: completion of 300-level nursing courses or permission of director. Corequisites: 415, 416. Every semester. (Credit hours to decrease to 2 in the Fall 1992).

415 Community Health Nursing Concepts (3)
Assessment of the community and the methods to plan, implement and evaluate nursing interventions. Every semester. Prerequisites: completion of 300-level nursing courses or permission of director. Corequisites: 414, 416.

416 Nursing Care in the Community (4)
Application of principles of primary care nursing. Every semester. Laboratory: 12 hours. Prerequisites: completion of 300-level nursing courses or permission of director. Corequisites: 414, 415.

417 Issues in Nursing (3)
A review of current literature and discussion of issues affecting contemporary nursing practice. Once yearly. Prerequisites: completion of 300-level nursing courses or permission of director. (Credit hours to decrease to 2 in fall 1992).
School of Business Administration

Professor A. Richard Casavant, Jr., Dean

The principal objective of the School of Business Administration is to foster an appreciation and understanding of the function of the organization in today's environment, to develop effectively the student's analytical abilities, and to prepare the student to obtain employment in the private, public, and not-for-profit sectors. The school emphasizes breadth in management education necessary for lifelong professional career development. The curricula also provide essential skills for employment opportunities in related career fields. Career preparation is offered in the following areas:

- Accounting
- Economics
- Finance
- General Management
- Industrial Management
- Personnel Management
- Marketing
- Office Management

The school is organized into four departments, Accounting and Finance, Economics, Management, and Marketing.

It offers four degree programs: Bachelor of Arts with a major in economics; Bachelor of Science with a major in business administration and concentrations in accounting, finance, general management, industrial management, personnel management, marketing, and office management; Bachelor of Science with a major in economics; and Master of Business Administration.

These degree programs are accredited by the American Assembly of Collegiate Schools of Business (AACSB).

The letter B used before a course name is an abbreviation for "Business." Example: B(usiness) Accounting.

Accounting and Finance

Professor Fulmer, Head

The Department of Accounting and Finance offers concentrations designed to prepare students for professional positions in the profit and nonprofit sectors. The Bachelor of Science degree in business administration may be obtained with concentrations in accounting or finance.

Business Administration (B.S.): Accounting concentration

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (9 hours)

Category C: 2 approved behavioral or social science courses other than economics (6 hours; approved related courses below will apply)

Category D: 1 approved physical or natural science course with laboratory (4 hours)

Category F: 1 approved mathematics course (3 hours; approved related course below will apply)

Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity.
Major and related courses
6 hours selected from Political Science C101, Psychology C101, or Sociology C151
Mathematics 135, F136
Computer Science 110
One course from English 277,300,410, or Office Administration 310 (minimum of 8 hours in written communication including required courses in Category A)
40 hours common body of knowledge in the School of Business Administration including: Accounting 201, 202, 335; Economics 101, 102; Finance 302; Management 211, 212, 311, 315, 360, 440, 441; Marketing 313

Accounting concentration:
Computer Science 111
21 hours from the School of Business Administration including: Accounting 300, 301,302, 305,307,405,408
12 hours: 6-9 hours chosen from Accounting 306, 401, 406, 407, 411, 412, 481; 3-6 hours chosen from Finance 321, 322, 403; Accounting 336; Economics 301,302, Management 356
2.0 average in all accounting courses
A minimum of 54 hours of the 128 total must be taken at the 300-400 level
Electives to complete 128 hours
Maximum of 73 hours total accepted in School of Business Administration courses; i.e., at least 55 hours other than School of Business Administration courses must be completed

Typical course of study in business administration (B.S.)—accounting concentration
The program for the first two years in business administration is the same for all concentrations and is designed to do two things: (1) Give the student background in the basic disciplines and areas required to fulfill the general education requirements of the University and (2) prepare a foundation for the advanced courses in business administration to be taken during the junior and senior years.

First Semester
Economics 101 3
Mathematics 135 3
General Education Category A 3
Physical Education 021 1
General Education Categories 3
University Studies 101 3
Total 16

Second Semester
Economics 102 3
Mathematics F136 3
General Education Category A 3
Computer Science 110 3
Physical Education Activity 1
Computer Science 111 3
General Education and Electives 3-6
Total 16-19

Sophomore
B Accounting 201 3
B Management 211 3
General Education Category B 3
General Education Categories 3-9
Total 13-19

Junior
B Accounting 300 3
B Accounting 307 3
B Finance 302 3
B Management 311 3
B Marketing 313 3
Total 15

Senior
B Accounting 335 3
B Accounting 302 3
B Accounting Elective 3
Finance, Management or Economics Elective 3
Elective 3
Total 15

Total 15

Total 16

Accounting Electives
(6-9 Hours):
B Accounting 306
B Accounting 401
B Accounting 406
B Accounting 407
B Accounting 411
B Accounting 412
B Accounting 481
B Accounting 492

Total 16

Total 128

Accounting & Finance — 115

Business Administration (B.S.): Finance concentration

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (9 hours)
Category C: 2 approved behavioral or social science courses other than economics (6 hours: approved related courses below will apply)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category F: 1 approved mathematics course (3 hours; approved related course below will apply)
Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar
Heath and Physical Education 021 plus one additional semester physical education activity

Major and related courses
6 hours selected from Political Science C101, Psychology C101, or Sociology C151
Mathematics 135*, F136
Computer Science 110
One course from English 277,300, 410, or Office Administration 310 (minimum of 8 hours in written communication including required courses in Category A)
40 hours common body of knowledge from the School of Business Administration including: Accounting 201, 202, 335; Economics 101, 102; Finance 302; Management 211, 212, 311, 315, 360, 440, 441; Marketing 313

Finance concentration:
15 hours including Finance 321, 322, 421, 422, 423
6 hours including Economics 325, 429
9 additional hours chosen from Accounting 300,301, 302,305,307,336; Finance 284, 337, 403, 424, 482; Management 356; Economics 301, 306, 404
2.0 average in all finance courses
ACCOUNTING COURSES

201, 202 Principles of Accounting (3,3)
Basic financial and managerial accounting principles as applied to manufacturing, service and retail enterprises. Includes the study of generally accepted accounting. Prerequisite: 201 with a grade of C or higher is prerequisite to 202.

300 Intermediate Accounting I (3)
The theoretical foundations and structure of accounting as they relate to the presentation of financial statements. Emphasis will be on the framework underlying financial accounting and analysis of current assets. Every semester. Formerly BACC 303. Prerequisite: 202; junior standing.

301 Intermediate Accounting II (3)
The theoretical foundations and structure of accounting as they relate to the presentation of financial statements. Emphasis will be placed on analysis of fixed assets, liabilities and equity. Every semester. Formerly BACC 304. Prerequisites: 300.

302 Intermediate Accounting III (3)
The theoretical foundations and structure of accounting as they relate to the presentation of financial statements. Emphasis will be placed on analysis of the statement of cash flows, deferred taxes, leases, pensions, earnings per share, and other financial reporting considerations. Every semester. Prerequisites: 301.

305 Managerial Cost Accounting (3)
Introduction to the managerial-cost accounting models available for planning, controlling, and evaluating operations. Including: the development and utilization of unit standard costs, job order and process costing, variance analysis, direct and absorption costing models, and their data requirements. Every semester. Prerequisite: 202; junior standing.

306 Budgeting (3)
Cost accounting by standard costs. Cost analysis and cost distribution reports emphasized. Methods and procedures in the preparation and execution of master and special budgets for industrial and commercial enterprises. On demand. Prerequisite: 202; junior standing.

307 Federal Tax Accounting (3)
Fundamentals of federal income tax with major emphasis upon tax law and regulations applicable to individuals. Every semester. Prerequisite: 202; junior standing.

335 Legal Environment of Business (3)
American legal institutions and sources of law; ethical considerations of business; an introduction to social and political influences as reflected in government regulation. Every semester.

336 Business Law (3)
Fundamental principles concerning contracts, personal property, and bailments, sales, commercial paper, secured transactions, agency and employment, partnerships and corporations, real property. Every semester.

401 Advanced Accounting (3)

405 Auditing (3)
Kinds of audits, systems of accounts, and methods of conducting audits. Preparation of working papers and reports. Every semester. Prerequisite: 302.

406 Advanced Managerial Accounting (3)
An investigation of alternative managerial accounting models available for planning, controlling, and evaluating operating and capital expenditures. Including investigations of the assumptions, behavioral implications, quantitative methodologies, and controversial issues in current and proposed managerial accounting models. Fall semester. Prerequisites: 305; Finance 302; Computer Science 111.

407 Governmental Accounting (3)
Accounting systems of institutions and various governmental units. Fund transactions, revenues and expenditures, appropriations, and form and content reports. Every semester. Prerequisite: 202.
408 Accounting Information Systems (3)
Review of the strategies, goals, and methodologies available for designing, installing, and evaluating accounting information systems. Spring semester. Prerequisites: 300, 305; Computer Science III.

411 Taxation of Corporations and Partnerships (3)
Fundamentals of federal income tax laws covering the formation, liquidation and reorganization of corporations and partnerships. Emphasis is placed on the federal income tax laws as they relate to both the entity and the owner. Every semester. Formerly BACC 309. Prerequisite: 307.

412 Taxation of Estates, Gifts and Trusts (3)
A study of the federal taxation of wealth transfers, including federal estate and gift taxes, and the income taxation of estates and trusts. On demand. Prerequisites: 307.

481 Study Abroad: International Accounting (3)
The purpose of this course is to explore a broad range of topics dealing with international accounting. An examination of international accounting concepts will be supplemented by an intensive travel abroad experience. Through a combination of textbook concepts, outside readings, plant tours, guest speakers, written assignments and classroom discussions students will be able to compare the financial regulation and reporting process in different countries. Additionally, the students will be exposed to the problems of harmonization of international standards and multinational enterprise control. Prerequisite: 202 and senior standing or permission of instructor.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
Every semester. See "Departmental Honors," page 27.

497r Research (1-3)
Every semester.

498r Individual Studies (1-3)
Every semester.

499r Group Studies (1-3)
Every semester.

FINANCE COURSES

281 Real Estate Fundamentals (3)
On demand.

282 Real Estate Law (3)
Acquisition and transfer of property; rights of adjoining owners; mortgages and liens; abstracts of title; recording; drafting of deeds; leases, options, and other legal aspects of property. On demand.

283 Real Estate Appraisal (3)
The fundamentals of appraising various types of real estate; the concept of value; the influence of architecture and construction; depreciation; analysis of city and neighborhood; different approaches to real estate property valuation. On demand.

284 Real Estate Finance (3)
Elements of mortgage finance; source of mortgage funds; construction loans; interest rates; servicing mortgages; V.A., F.H.A., conventional, and other loans. On demand.

301 Personal Finance (3)
Designed to help the individual and family make intelligent, informed decisions on personal financial management. On demand.

302 Essentials of Managerial Finance (3)
Management of funds in business, including procurement, utilization, and disposition of money. Financial aids such as budgeting and break even analysis, financial statement analysis, and capital management. Every semester. Prerequisites: Accounting 202; Economics 101, 102; Management 212; junior standing.

321 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. Fall semester and summer. Prerequisites: 302; Accounting 202; Economics 101, 102; junior standing.

322 Commercial Banking (3)
A course designed to introduce the student to the decisions facing a commercial banker. Topics covered include banking history, role of money in the economy, the commercial banking system, Federal reserve rules, regulations and monetary management, and special topics such as credit analysis, installment lending, management of a bank's cash balances, loan policy, and money management services. Spring semester and summer. Prerequisites: 302.

337 Principles of Insurance (3)
Types of insurance, insurance coverage, policy protection, and company organization and regulation. On demand. Prerequisites: Economics 101, 102.

403 Financial Statement Analysis (3)
Techniques of financial statement analysis with special attention paid to the balance sheet and the income statement. Emphasis on current position, profitability, and financial structure of the firm. On demand. Prerequisites: 302, Accounting 202, senior standing, and permission of instructor.

421 Security Analysis (3)
A course designed to introduce the undergraduate to advanced investment analysis and theory. Included in the course will be computer applications and analysis of investment vehicles and strategies. Spring semester. Prerequisites: 321; Computer Science 110.

422 Financial Institutions (3)
Capital markets and institutions; sources and uses of capital funds; impact of changes in flow of funds on the economy. Spring semester. Prerequisite: 302.

423 Financial Management (3)
A case course which affords the undergraduate an opportunity to apply financial principles to actual situations. The course is a continuation of the topics in 302 using the case discussion approach. Fall semester and summer. Prerequisite: 302.

424 Theory of Finance (3)
A lecture/discussion course which teaches the theory behind financial decisions. Topics covered include investments and securities, capital budgeting, risk analysis, and application of operations research to finance. On demand. Prerequisites: 302, 321.

482 Study Abroad: International Financial Management (3)
A growing number of companies engage in various types of international financial transactions. Firms that are engaged in international financial transactions face unique problems and risks not encountered by firms that operate in only one country. The increased amount of international trade and the internationalization of money and capital markets make it essential for financial managers to understand the elements of international finance. These elements of international finance are obtained in this course through textbook concepts, outside readings, guest lecturers, field trips and case studies in foreign locations. Prerequisite: 302.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
Every semester. See "Departmental Honors," page 27.

497r Research (1-3)
Every semester.

498r Individual Studies (1-3)
Every semester.

499r Group Studies (1-3)
Every semester.
Economics

Professor Keilany, Head

The economics curriculum is designed to prepare students for a successful career in different sectors of the economy. This is accomplished by offering a B.A. as well as B.S. in economics. The B.A. degree provides flexibility in course offerings and requires study of a foreign language. The B.S. degree, on the other hand, stresses mathematics and analysis.

Economics (B.A.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)

Category C: 2 approved behavioral or social science courses other than economics (6 hours)

Category D: 1 approved physical or natural science course with laboratory (4 hours)

Category E: 1 approved mathematics course (3 hours; approved related courses will apply)

Category F: 1 approved perspectives course (3 hours)

The Freshman Seminar

Economics 101 plus one additional semester physical education activity

Health and Physical Education 021 plus one additional semester physical education activity

Foreign language through second college year

Major

Management 211 and 212 or Mathematics F210

24 hours economics including 101, 102, 324, 325, and electives

2.0 average in all economics courses

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

The maximum credit hours in the School of Business Administration that a student majoring in Economics can take:

36 hours in Economics

15 hours in Business Administration

Typical course of study in economics (B.S.)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
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<tr>
<td>University Studies 101</td>
<td>Economics 101</td>
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<td>Economics 101</td>
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<td>Foreign Language</td>
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<td>General Education Category A</td>
<td>General Education Category B</td>
</tr>
<tr>
<td>Physical Education 021</td>
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<tr>
<td>General Education</td>
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<tr>
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<td>16-17</td>
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</table>

| **SOPHOMORE**   |                 |
| Mathematics F210 or B Management 211 | Foreign Language |
| B Management 211 | 3               |
| Foreign Language | 3               |
| General Education and Electives | 10              |
| Total               | 16              |

| **JUNIOR**      |                 |
| Economics 324   | Economics 325   |
| Electives       | Electives       |
| Total           | 16              |

| **SENIOR**      |                 |
| Economics Electives | Economics Electives |
| General Education and Electives | 6                |
| Total               | 16              |

TOTAL HOURS 128

Economics (B.S.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)

Category C: 2 approved behavioral or social science courses other than economics (6 hours)

Category D: 1 approved physical or natural science course with laboratory (4 hours)

Category E: 1 approved mathematics course (3 hours; approved related courses will apply)

Category F: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

Mathematics 135 and F136 or Mathematics F145 and Mathematics F150

Accounting 201

Management 211 and 212

Computer Science 110

12 hours core courses including Economics 101, 102, 324, 325

15 hours from the following: Economics 301, 306, 317, 404, 417, 425, 426, 429, 444, 450, 453, 455, 460, 465, 470, 498, 499r; Accounting 202; Finance 302 (other courses may be substituted with approval of department)

2.0 average in all economics courses

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

The maximum credit hours in the School of Business Administration that a student majoring in Economics can take:

36 hours in Economics

15 hours in Business Administration

<table>
<thead>
<tr>
<th>First Semester</th>
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</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td></td>
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<tr>
<td>Economics 101</td>
<td>Economics 102</td>
</tr>
<tr>
<td>Mathematics 135* or F145*</td>
<td>Mathematics F136 or F150</td>
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<td>General Education Category A</td>
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<tr>
<td>University Studies 101</td>
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<td>6</td>
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<td>16</td>
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</tbody>
</table>

| **SOPHOMORE**   |                 |
| B Management 211 | B Management 212 |
| 3               |
| 3               |
| 3               |
| 1               |
| 1               |
| 10              |
| 15              |

| **JUNIOR**      |                 |
| Economics 324   | Economics 325   |
| General Education and Electives | 13              |
| Total           | 16              |

TOTAL HOURS 128
### General Education and Economics Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>101</td>
<td>Principles of Economics: Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>102</td>
<td>Principles of Economics: Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>301</td>
<td>Money and Banking</td>
<td>3</td>
</tr>
<tr>
<td>306</td>
<td>Public Finance</td>
<td>3</td>
</tr>
<tr>
<td>317</td>
<td>Labor Economics and the Labor Process</td>
<td>3</td>
</tr>
<tr>
<td>324</td>
<td>Intermediate Microeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>325</td>
<td>Intermediate Macroeconomic Theory</td>
<td>3</td>
</tr>
<tr>
<td>404</td>
<td>International Economics</td>
<td>3</td>
</tr>
<tr>
<td>417</td>
<td>Women in the Economy</td>
<td>3</td>
</tr>
<tr>
<td>425</td>
<td>Industrial Organization</td>
<td>3</td>
</tr>
<tr>
<td>426</td>
<td>Comparative Economic Systems</td>
<td>3</td>
</tr>
<tr>
<td>429</td>
<td>Managerial Economics</td>
<td>3</td>
</tr>
<tr>
<td>444</td>
<td>Economics of Underdeveloped Areas</td>
<td>3</td>
</tr>
<tr>
<td>450</td>
<td>Marxian Political Economy</td>
<td>3</td>
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<tr>
<td>455</td>
<td>Urban Economics</td>
<td>3</td>
</tr>
<tr>
<td>460</td>
<td>Introduction to Econometrics</td>
<td>3</td>
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<tr>
<td>465</td>
<td>Economics of Regulated Industries</td>
<td>3</td>
</tr>
<tr>
<td>470</td>
<td>Seminar in Current Economic Topics</td>
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<tr>
<td>480</td>
<td>Philosophy of Enterprise</td>
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</tr>
<tr>
<td>495r</td>
<td>Departmental Honors</td>
<td>1-3</td>
</tr>
<tr>
<td>497r</td>
<td>Research</td>
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<tr>
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<tr>
<td>499r</td>
<td>Group Studies</td>
<td>1-3</td>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>499r</td>
<td>Special Projects</td>
<td>1-3</td>
</tr>
<tr>
<td>499r</td>
<td>Individual Studies</td>
<td>1-3</td>
</tr>
<tr>
<td>499r</td>
<td>Group Studies</td>
<td>1-3</td>
</tr>
</tbody>
</table>

### Total Hours

- **Economics Elective**: 6
- **General Education and Electives**: 10
- **Total**: 16

**TOTAL HOURS 128**

*If exempted, student may take Mathematics F136. Students not eligible for Mathematics 135 must first take Mathematics 106. Students eligible to waive F145 may start in F150.*

### ECONOMICS MINOR

A student may obtain a minor in economics by taking Economics 101 and 102 plus 12 additional hours of 300 or 400-level economics courses (minimum of 18 hours).

Minimum 2.0 average in the minor.

### ECONOMICS COURSES

**101 Principles of Economics: Macroeconomics (3)**
A study of national income and its determination, money and banking, economic fluctuations, fiscal and monetary policy, economic growth, and international economics. Every semester.

**102 Principles of Economics: Microeconomics (3)**
A study of the market system, the price system, forms of business organization, government and business, labor and distribution. Every semester.

**199r Special Projects (1-3)**
Individual or group projects. On demand. Maximum credit 3 hours.

**301 Money and Banking (3)**
Development and analysis of the American monetary system and commercial and central banking; special attention to analysis and evaluation of monetary policies. Every semester. Prerequisites: 101, 102.

**306 Public Finance (3)**
Public expenditures and revenues, principles of taxation, public debt, and fiscal policy. On demand. Prerequisites: 101, 102.

**317 Labor Economics and the Labor Process (3)**
Wage and employment theories, labor law, and history of the labor movement. On demand. Prerequisites: 101, 102.

**324 Intermediate Microeconomic Theory (3)**
Survey of developments in economic analysis: price determination, including considerable study of demand and cost theory; imperfect competition. On demand. Prerequisites: 101, 102.

**325 Intermediate Macroeconomic Theory (3)**
Introduction to contemporary theory of income and employment; emphasis on the essential principles and concepts used in the determination of the level of income and employment, the rate of economic growth, and the general price level. Every semester. Prerequisites: 101, 102.

**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. On demand. Prerequisites: 101, 102, or equivalent.

**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 consent of instructor.

**425 Industrial Organization (3)**
The structure of industry, business conduct, and economic performance; analysis of antitrust law and government regulation. Every semester. Prerequisites: 101, 102.

**426 Comparative Economic Systems (3)**
Theoretical and empirical examination of various economic systems with emphasis on current capitalist and socialist economies. Objectives and outcomes of market and planned economies are compared. On demand. Prerequisites: 101, 102.

**429 Managerial Economics (3)**
The solution of business problems by use of economic theory, accounting, marketing methods, financial techniques, etc. On demand. Prerequisites: 101, 102; Management 212, and Mathematics 136.

**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. On demand. Prerequisites: 101, 102, or graduate standing.

**450 Marxian Political Economy (3)**

**455 Urban Economics (3)**
A study of the metropolitan economy with a problem orientation in areas of intra- and intermetropolitan industry location, urban residential location and travel behavior, the urban ghetto, housing markets, urban transportation, and environmental quality. On demand. 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. On demand. Prerequisites: 101, 102; Management 212 and Mathematics 136.

**465 Economics of Regulated Industries (3)**

**470 Seminar in Current Economic Topics (3)**
The application of economic techniques and analytical methods to not less than five current topics, which may vary from semester to semester, selected by the instructor. Designed for senior economics majors. On demand. Prerequisites: 6 hours of economics courses at the 300 level or above.

**480 Philosophy of Enterprise (3)**
Course seeks out the philosophical roots and bases of the capitalist order, denotes the derivation of entrepreneurship, private property, limited government and the market system, and weighs economic public policy in terms of cost-benefit criteria. On demand. Prerequisites: 101, 102, or equivalents.

**495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)**
On demand. See "Departmental Honors," page 27.

**497r Research (1-3)**
On demand.

**498r Individual Studies (1-3)**
On demand.

**499r Group Studies (1-3)**
On demand.
Management
Professor Ettkin, Head

The management curriculum is designed to prepare students for careers in both the public and private sectors as well as graduate studies. Students may choose to concentrate in general management, personnel management, industrial management, or office management.

Business Administration (B.S.): General Management concentration

**General Education** (see pages 22-23 for list of approved courses)

- **Category A**: 2 approved courses in written communication in the English language (6 hours)
- **Category B**: 3 approved courses: one from humanities, one from fine arts, and one from either (9 hours)
- **Category C**: 2 approved behavioral or social science courses other than economics (6 hours; approved related courses below will apply)
- **Category D**: 1 approved physical or natural science course with laboratory (4 hours)
- **Category F**: 1 approved mathematics course (3 hours; approved related course below will apply)
- **Category G**: 1 approved perspectives course (3 hours)

**The Freshman Seminar**

Health and Physical Education 021 plus one additional semester physical education activity

**Major and related courses**

6 hours selected from Political Science C101, Psychology C101, or Sociology C151
Mathematics 135*, F136
Computer Science 110

One course from English 277, 300, 410, or Office Administration 310 (minimum of 8 hours in written communication including required courses in Category A)

40 hours common body of knowledge from the School of Business Administration including: Accounting 201, 202, 335; Economics 101, 102; Finance 302; Management 211, 212, 311, 315, 360, 440, 441; Marketing 313

**General management concentration:**

9 hours including: Management 330, 332, 438, 439
9 hours chosen from Management 356, 410, 434, 435, 451, 452, 456; Business Administration 459r
3 hours chosen from Finance 423; Marketing 363; Economics 301, 317; Accounting 306
2.0 average in all management courses

A minimum of 54 hours of the 128 total must be taken at the 300-400 level
Electives to complete 128 hours

Maximum of 73 hours total accepted in School of Business Administration courses; i.e., at least 55 hours other than School of Business Administration courses must be completed

*If exempted, student may take Mathematics F136.

**Typical course of study in business administration (B.S.)'s general management concentration**

The program for the first two years in business administration is the same for all concentrations and is designed to do two things: (1) Give the student background in the basic disciplines and areas required to fulfill the general education requirements of the University and (2) prepare a foundation for the advanced courses in business administration to be taken during the junior and senior years.

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 101</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 135*</td>
<td>3</td>
</tr>
<tr>
<td>General Education Category A</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education 021</td>
<td>1</td>
</tr>
<tr>
<td>General Education Categories</td>
<td>3</td>
</tr>
<tr>
<td>University Studies 101</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Second Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 102</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics F136</td>
<td>3</td>
</tr>
<tr>
<td>General Education Category A</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science 110</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Activity</td>
<td>1</td>
</tr>
<tr>
<td>General Education and Electives</td>
<td>3-6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
</tr>
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</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Accounting 201</td>
<td>3</td>
</tr>
<tr>
<td>B Management 211</td>
<td>3</td>
</tr>
<tr>
<td>General Education Category D</td>
<td>4</td>
</tr>
<tr>
<td>Gen. Education Categories</td>
<td>3-9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13-19</strong></td>
</tr>
</tbody>
</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Management Elective</td>
<td>3</td>
</tr>
<tr>
<td>B Finance 302</td>
<td>3</td>
</tr>
<tr>
<td>B Management 311</td>
<td>3</td>
</tr>
<tr>
<td>B Management 315</td>
<td>3</td>
</tr>
<tr>
<td>B Marketing 313</td>
<td>3</td>
</tr>
<tr>
<td>Office Administration 310</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15-18</strong></td>
</tr>
</tbody>
</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Management 438</td>
<td>3</td>
</tr>
<tr>
<td>Management 440</td>
<td>3</td>
</tr>
<tr>
<td>B Management 441</td>
<td>1</td>
</tr>
<tr>
<td>General Management Electives</td>
<td>6</td>
</tr>
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<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Total Hours: 128**
Business Administration (B.S.): Personnel Management concentration

**General Education** (see pages 22-23 for list of approved courses)

- **Category A**: 2 approved courses in written communication in the English language (6 hours)
- **Category B**: 3 approved courses: one from humanities, one from fine arts, and one from either (9 hours)
- **Category C**: 2 approved behavioral or social science courses other than economics (6 hours, one must be Psychology C101; approved related courses below will apply)
- **Category D**: 1 approved physical or natural science course with laboratory (4 hours)
- **Category F**: 1 approved mathematics course (3 hours; approved related course below will apply)
- **Category G**: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

- 6 hours, one course being Psychology C101 and the other either Political Science C101 or Sociology C151
- Mathematics 135, 315
- Computer Science 110
- One course from English 277, 300, 410, or Office Administration 310 (minimum of 8 hours in written communication including required courses in Category A)
- 40 hours common body of knowledge from the School of Business Administration including: Accounting 201, 202, 335; Economics 101, 102; Finance 302; Management 211, 212, 311, 315, 360, 440, 441; Marketing 313

Personnel management concentration:

- 15 hours consisting of Management 330, 332, 410, 434, 435,
- 9 hours chosen from Management 356, 438, 456; Business Administration 459r (maximum 3 hours); Economics 317 or Business Finance 337
- 9 hours from Psychology chosen from Psychology 202, 241, 242, 331, 345, 406, 411, 448, and 451.
- 2.0 average in all management courses
- A minimum of 54 hours of the 128 total must be taken at the 300-400 level
- Electives to complete 128 hours
- Maximum of 73 hours total accepted in School of Business Administration courses; i.e., at least 55 hours other than School of Business Administration courses must be completed

*If exempted, student may take Mathematics F136.

Typical course of study in business administration (B.S.): personnel management concentration

The program for the first two years in business administration is the same for all concentrations and is designed to do two things: (1) Give the student background in the basic discipline areas required to fulfill the general education requirements of the University and (2) prepare a foundation for the advanced courses in business administration to be taken during the junior and senior years.

**First Semester**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>FRESHMAN</th>
<th></th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td><strong>Sophomore</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Senior</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

**TOTAL HOURS 128**

A minimum of 54 hours of the total 128 must be taken at the 300-400 level.

Personnel Management Electives (any 9 hours):

- **Category A**: 2 approved courses in written communication in the English language (6 hours)
- **Category B**: 3 approved courses: one from humanities, one from fine arts, and one from either (9 hours)
- **Category C**: 2 approved behavioral or social science courses other than economics (6 hours; approved related courses below will apply)
- **Category D**: 1 approved physical or natural science course with laboratory (4 hours)

Psychology Electives (any 9 hours):

- Psychology 202
- Psychology 241
- Psychology 242
- Psychology 331
- Psychology 345
- Psychology 406
- Psychology 411
- Psychology 448
- Psychology 451

*If exempted, student may take Mathematics F136.

Six hours, one course being Psychology C101 and the other Political Science C101 or Sociology C151.

Business Administration (B.S.): Industrial Management concentration

General Education (see pages 22-23 for list of approved courses)

- **Category A**: 2 approved courses in written communication in the English language (6 hours)
- **Category B**: 3 approved courses: one from humanities, one from fine arts, and one from either (9 hours)
- **Category C**: 2 approved behavioral or social science courses other than economics (6 hours; approved related courses below will apply)
- **Category D**: 1 approved physical or natural science course with laboratory (4 hours)
- **Category F**: 1 approved mathematics course (3 hours; approved related course below will apply)

Typical course of study in business administration (B.S.): personnel management concentration
Business Administration (B.S.): Office Management concentration

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral or social science courses other than economics (6 hours; approved related courses below will apply)
Category D: 1 approved physical or natural science course with laboratory (4 hours)
Category F: 1 approved mathematics course (3 hours: approved related course below will apply)
Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity.

Major and related courses
Six hours selected from Political Science C101, Psychology C101, or Sociology C151
Mathematics 135*, F136
Computer Science 110
One course from English 277, 300, 410, or Office Administration 310 (minimum of 8 hours in written communication including required courses in Category A)
40 hours common body of knowledge from the School of Business Administration including: Accounting 201, 202, 355; Economics 101, 102; Finance 302; Management 211, 212, 311, 315, 360, 440, 441; Marketing 313

Industrial management concentration:
18 hours including Accounting 305; Management 356, 451, 452, 456; Engineering 457
9 hours selected from Engineering 354, 458; Management 330, 332, 410, 435, 438; Marketing 319, 355; Economics 429
2.0 average in all management courses
A minimum of 54 hours of the 128 total must be taken at the 300-400 level
Electives to complete 128 hours
Maximum of 73 hours total accepted in School of Business Administration courses; i.e., at least 55 hours other than School of Business Administration courses must be completed

*If exempted, student may take Mathematics F136.

Typical course of study in business administration (B.S.): industrial management concentration

The program for the first two years in business administration is the same for all concentrations and is designed to do two things: (1) Give the student background in the basic disciplines and areas required to fulfill the general education requirements of the University and (2) prepare a foundation for the advanced courses in business administration to be taken during the junior and senior years.

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td></td>
</tr>
<tr>
<td>Economics 101</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 135*</td>
<td>3</td>
</tr>
<tr>
<td>General Education Category A</td>
<td>3</td>
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<tr>
<td>Physical Education 021</td>
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<tr>
<td>General Education Categories</td>
<td>3</td>
</tr>
<tr>
<td>University Studies 101</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
<tr>
<td><strong>SOPHOMORE</strong></td>
<td></td>
</tr>
<tr>
<td>B Accounting 201</td>
<td>3</td>
</tr>
<tr>
<td>B Management 211</td>
<td>3</td>
</tr>
<tr>
<td>General Education Category D</td>
<td>4</td>
</tr>
<tr>
<td>Gen. Education Categories</td>
<td>3-9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>13-19</td>
</tr>
<tr>
<td><strong>JUNIOR</strong></td>
<td></td>
</tr>
<tr>
<td>B Finance 302</td>
<td>3</td>
</tr>
<tr>
<td>B Management 311</td>
<td>3</td>
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<td>B Management 315</td>
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<td>B Marketing 313</td>
<td>3</td>
</tr>
<tr>
<td>Office Administration 310</td>
<td>or equivalent 3</td>
</tr>
<tr>
<td>Electives</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15-18</td>
</tr>
</tbody>
</table>

**SENIOR**

| Engineering 457 | 3 | B Management 440 | 3 |
| B Management 451 | 3 | B Management 441 | 1 |
| Industrial Management | 3 |
| Elective | 3 |
| Electives 6 | Industrial Management |
| Elective | 3-6 |
| **Total** 15 | 15-19 |

**TOTAL HOURS 128**

Industrial Management Electives (any 9 hours):
Economics 429 | B Management 410 |
Engineering 454 | B Management 435 |
Engineering 458 | B Management 438 |
B Management 330 | B Marketing 319 |
B Management 332 | B Marketing 355 |
A minimum of 54 hours of the total 128 must be taken at the 300-400 level
*If exempted, student may take Mathematics F136.

Six hours must be selected from Political Science C101, Psychology C101, or Sociology C151.

Typical course of study in business administration (B.S.): office management concentration

The program for the first two years in business administration is the same for all concentrations and is designed to do two things: (1) Give the student background in the basic disciplines and areas required to fulfill the general education requirements of the University and (2) prepare a foundation for the advanced courses in business administration to be taken during the junior and senior years.
First Semester | Second Semester
---|---
FRESHMAN |  
General Education Category A | 3  
General Education Category A | 3  
Economics 101 | 3  
Mathematics 135\(^1\) | 3  
Office Administration 121\(^2\) | 3  
Economics 102 | 3  
Physical Education 021 | 1  
Computer Science 110 | 3  
General Education Categories\(^3\) | 3  
Physical Education Activity | 1  
University Studies 101 | 3  
General Education | 3  
Total | 16  
| Total | 16  

SOPHOMORE |  
Mathematics F136 | 3  
B Management 211 | 3  
B Accounting 201 | 3  
B Accounting 202 | 3  
General Education and electives | 12  
General Education electives | 6  
Total | 18  
| Total | 16  

JUNIOR |  
B Management 212 | 3  
B Accounting 335 | 3  
B Marketing 313 | 3  
Office Administration 310 | 3  
B Management 311 | 3  
Elective | 3  
B Finance 302 | 3  
Total | 15  
| Total | 15  

SENIOR |  
Office Administration 400 | 3  
Office Administration 460 | 3  
Office Administration 450 | 3  
B Management 440 | 3  
B Management 360 | 3  
B Management 441 | 1  
Electives | 7  
Electives | 9  
Total | 16  
| Total | 16  

TOTAL HOURS 128

If exempted, student may take Mathematics F136.
Placement test required.
\(^1\)Six hours must be selected from Political Science C101, Psychology C101, or Economics 101.
\(^2\)Six hours must be selected from Political Science C101, Psychology C101, or Economics 101.

MANAGEMENT COURSES

103 Introduction to Business (3)
General characteristics of business enterprise and business terminology. Fall semester. Junior and senior majors in business administration will not receive credit for the course.

211 Statistical Methods for Business I (3)
Basic concepts of descriptive and inferential statistics including frequency, probability, sampling distributions, estimation theory, and introduction to hypothesis testing. Emphasis on business applications. Every semester. Prerequisite: Mathematics 135, Computer Science 110 or 102.

212 Statistical Methods for Business II (3)
Probability and statistical inference with emphasis on decision-making in business. Computer application of statistical analysis. Every semester. Prerequisites: 211 with grade of C or better; Mathematics 136.

311 Operations Management (3)
An introduction to the design, operation, and control of a product or service oriented environment. Major emphasis is placed on the following decision tools and models: forecasting, linear programming, simulation, quality control, inventory control, network analysis, job design, and standards. Every semester. Prerequisites: 212; Economics 101 and 102; junior standing.

315 Management Concepts, Theory, and Practice (3)
Inter- and intra-group relations in administration with special emphasis on superior-subordinate relations in a business environment. Comparison of classical concepts of leadership, structure, and development with contemporary research. Every semester. Prerequisite: junior standing.

330 Concepts in Organizational Behavior (3)
An examination of theory and research dealing with the behavior of organizations with primary emphasis on individual and group behavior. Topics covered include motivation, communication, group dynamics, leadership, and change. Every semester. Prerequisite: 315.

332 Personnel Management (3)
Principles and practices involved in the effective administration of personnel. Every semester. Prerequisite: 315.

356 Management Science (3)
Quantitative decision-making techniques under deterministic and stochastic conditions; topics to include decision model building, linear programming, goal programming, assignment problem, transportation problem, network models, queuing, dynamic programming and simulation. Every semester. Prerequisite: 212.

357 Nonparametric Methods for Business (3)
An introduction to nonparametric techniques with applications in such areas as marketing research, management science, production, and finance. Computer applications. On demand. Prerequisite: 212.

360 Information Systems (3)
Systems and information concepts; structure of systems in organizations; systems tools; decision making, data base concepts; information systems analysis and design; implementation decision support systems; integrative business project that includes problem identification, definition, requirements analyses, system design, and implementation; societal issues. Every semester. Formerly 460. Prerequisites: B Management 311, 315; B Finance 302; B Marketing 313, and CPSC 110.

410 Industrial Relations (3)
Union-management relations including the legal framework, the techniques and practices used, and a bargaining simulation. Every semester. Prerequisites: 332, senior standing.

434 Problems in Personnel Management (3)
A case course in human relations dealing with problems drawn from actual business experience. Every semester. Prerequisite: 332.

435 Wage and Salary Administration (3)
Job evaluation using both quantitative and nonquantitative methods. Control of wages and salaries. Wage incentive principles and systems. Actual application of job evaluation techniques. Every semester. Prerequisites: 315, senior standing or permission of instructor.

438 International Management (3)
A case course exploring the differences in managerial techniques involved in operations in foreign cultures. Particular attention given to the constraints imposed as a result of different cultural, educational, legal, and economic systems. Every semester. Prerequisite: 315.

439 Japanese Management Systems (3)
A comprehensive overview of Japanese management and organizational practices, with an attendant focus on the relationships between Japanese cultural and societal institutions and Japanese managerial practices. The problems of U.S.-Japanese joint-ventures, American and Japanese expatriates, and trade disputes will also be covered. Prerequisites: 315 or permission of instructor.

440 Business Policy (3)
An integrating course using cases for management decision-making and management simulation. A culminating educational experience for the senior. Every semester. Prerequisites: 311, 315; Finance 302; Marketing 313; senior standing. May not be used for graduate credit.

441 Senior Seminar (1)
The practices, policies, and administration of business examined by top level executives of a variety of businesses. The course considers a wide variety of topics from the top management viewpoint with a view towards broadening the interest and horizon of the student. Every semester. Course graded on a pass/fail basis. Prerequisite: senior standing.

451 Production Planning and Control (3)
A study of the problems and practices of production planning and control; master production scheduling; material requirements planning; production activity and control; capacity planning and control. Fall semester. Prerequisite: 311 or permission of instructor.
452 Modern Materials Management (3)  
A study of the problems and practices of operations and materials management. Topics will include: materials acquisition; classical inventory systems; demand management; aggregate planning; material logistics systems; and current topics in materials management including just-in-time, zero inventories, and group technology. Spring semester. Prerequisite: 311 or permission of instructor.

454 Comparative Industrial Systems (3)  
Observes, discusses, and describes the problems, techniques, and economics of a variety of different types of production organizations. Combines class work with field trips through factories in the area. On demand. Prerequisite: 311 or permission of instructor.

456 Business Forecasting (3)  
A basic analysis of the forecasting process and an exposure to the fundamental techniques. A series of business cases to illustrate forecasting in such areas as marketing, production, finance, and general management. Emphasis on forecasting at the firm and industry level. Computer applications for the individual forecasting techniques. Spring semester. Prerequisite: 311 or permission of instructor.

483 Study Abroad: Management Concepts (3)  
The purpose of the course is to explore the differences in managerial concepts and techniques in selected cultures through an intensive study and international travel experience. An examination of successful operations techniques and management strategies used by international organizations will supplement the practical and theoretical understanding of international business and global competition. Throughout a combination of textbook concepts, outside readings, plant tours, guest lectures, class discussions, and case studies students will be able to compare various operation processes and management procedures and be able to develop and evaluate plans for adapting organizational processes within the context of an international business environment. Prerequisite: 311, 315 and senior standing or permission of instructor.

495r Department Honors (1-3 hours per terms, 4 hours for the two terms)  
Every semester. See "Departmental Honors," page 27.

497 Research (1-3)  
Every semester.

498r Individual Studies (1-3)  
Every semester.

499r Group Studies (1-3)  
Every semester.

OFFICE ADMINISTRATION/BUSINESS EDUCATION COURSES

109 Business Mathematics (3)  
Fundamental fractions, percentage, interest, bank discount, insurance, graphs, square root, and other aspects of mathematics important in business control and statistical research. On demand.

121 Keyboarding (3)  
Includes learning the keyboard, operating the parts of the machine, writing of different styles of business letters, manuscript copy, and tabulation. On demand.
Class 3 hours, laboratory 2 hours. Terminal speed required is 30 wpm/three minute timing with three errors.

125 Elementary Shorthand (3)  
A study of Gregg shorthand theory with emphasis on reading and dictation from the beginning. On demand. Class 4 hours. Prerequisites: typing speed of 30 net words a minute or corequisite: 121.

199r Special Projects (1-4)  
Individual or group projects. Every semester. Maximum credit 4 hours.

220 Microcomputing Applications in Office Administration (3)  
Designed to familiarize students with office equipment to include word processing equipment and transcribing machines. On demand. Class 3 hours, laboratory 2 hours. Prerequisite: 121 or one year of high school typewriting.

223 Secretarial Office Typewriting (3)  
A thorough review of writing business letters, manuscript copy, tabulation, business reports, legal documents. Emphasis on speed development and production. On demand. Class 3 hours, laboratory 2 hours. Prerequisite: 121 or 1 year of high school typewriting. Terminal speed required is 45 wpm/five minute timing with five errors.

227 Intermediate Shorthand (3)  
Dictation and transcription with a review of theory and with a speed of 90 words a minute on new material with 95 percent accuracy required. On demand. Prerequisites: 121, 125, or 2 years of high school typewriting and shorthand.

228 Transcription (3)  
Dictation and transcription with a further review of theory and vocabulary; speed of 100 words a minute on new material with 95 percent accuracy required. On demand. Prerequisites: 223 and 221.

219 Office Procedures (3)  
The role of the office employee in facilitating managerial operations. Considerations include improving human relations, information retrieval systems, handling correspondence, arranging schedules and itineraries, using communication media effectively, and simplification of office tasks. Spring semester alternate years. Prerequisites: 121, 220.

309 Records and Information Management (3)  
Study of problems related to the selection of equipment and systems used for information storage and retrieval, including automated and nonautomated filing; microfilming systems; tape processing; forms design; retention and disposal of records; and supervision, standards and work measurement. Spring semester alternate years.

310 Business Communication (3)  
An introduction and overview of verbal and nonverbal communication. Principles of writing, grammar, dictation, and rhetoric as applied to business communication. Mechanics and psychology of business letters and short reports. Every semester. Prerequisites: English 121, 122 (Formerly Office Administration 219).

350r Office Administration Internship (1-4)  
A supervised work experience program designed to strengthen the student's technical competencies and fundamental knowledge in Office Administration. Repeatable up to 4 hours. Every semester. Prerequisite: permission of department head.

400 Office Management (3)  
Office management and organization; office controls; forms and layout; management supervision of personnel and service units. Fall semester alternate years. Prerequisite: 310 or permission of instructor.

410 Administrative Communications (3)  
Study of business communications including inter-office memos; minutes of meetings; newspaper articles; oral presentations; and report writing, including tabular and graphic presentation of data essential to writing formal business reports. Spring semester alternate years.

450 Office Information Systems (3)  
Study of the relationships of the various types of office systems and the application of classroom learning to the problems of analyzing and determining appropriate office systems for various kinds of business. Fall semester alternate years. Prerequisite: 309 or permission of instructor.

460 Seminar: Problems in Office Management (3)  
Selected topics from the following: systems analysis, form design, records, mechanization, correspondence, supervision, work simplification, training work measurement. Spring semester alternate years. Prerequisite: 460 or permission of instructor.

495r Department Honors (1-3 hours per term, 4 hours for the two terms)  
Every semester. See "Departmental Honors," page 27.

497r Research (1-4)  
Every semester.

498r Individual Studies (1-4)  
Every semester.

499r Group Studies (1-4)  
Every semester.
Marketing

Professor Etkin, Acting Head

The marketing curriculum is designed to prepare students for careers in both the public and private sectors as well as for graduate studies.

Business Administration (B.S.): Marketing concentration

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (9 hours)

Category C: 2 approved behavioral or social science courses other than economics (6 hours; approved related courses below will apply)

Category D: 1 approved physical or natural science course with laboratory (4 hours)

Category F: 1 approved mathematics course (3 hours; approved related course below will apply)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

6 hours selected from Political Science C101, Psychology C101, or Sociology C151

Mathematics 135', F136

Computer Science 110

One course from English 277, 300, 410, or Office Administration 310 (minimum of 8 hours in written communication including required courses in Category A)

40 hours common body of knowledge from the School of Business Administration including: Accounting 201, 202, 335; Economics 101, 102; Finance 302; Management 211, 212, 311, 315, 360, 440, 441; Marketing 313

Marketing concentration:

15 hours including Marketing 365, either 361 or 362, 450, 461; Economics 425

9 hours chosen from Marketing 318, 319, 361, 362, 363, 364, 415, 417, 430; Economics 429; Management 356

2.0 average in all marketing courses

A minimum of 54 hours of the 128 total must be taken at the 300-400 level

A minimum of 73 hours total accepted in School of Business Administration courses; i.e., at least 55 hours other than School of Business Administration courses must be completed

Either Marketing 361 or 362 is required. The course not chosen to meet this requirement may be taken as an elective.

Typical course of study in business administration (B.S.)s marketing concentration

The program for the first two years in business administration is the same for all concentrations and is designed to do two things: (1) Give the student background in the basic disciplines and areas required to fulfill the general education requirements of the University and (2) prepare a foundation for the advanced courses in business administration to be taken during the junior and senior years.

First Semester

FRESHMAN

Economics 101 3
Mathematics 135' 3
General Education Category A 3
Physical Education 021 1
General Education Categories2 3
University Studies 101 3
Total 16

SOPHOMORE

B Accounting 201 3
B Management 211 3
General Education Category D 4
Gen. Education Categories 3-9
Total 13-19

JUNIOR

B Finance 302 3
B Management 311 3
B Accounting 335 3
B Marketing 313 3
Electives 3-6
Total 15-18

SENIOR

Economics 425 3
B Marketing 450 3
Marketing Electives 3-6
Electives 3-6
Total 12-18

TOTAL HOURS 128

Marketing Electives (any 9 hours):

B Marketing 318
B Marketing 319
B Marketing 361
B Marketing 362
B Marketing 363
B Marketing 364
B Accounting 415
B Accounting 417
B Management 441
B Management 461
Marketing Electives 3-6
Electives 3-6

A minimum of 54 hours of the total 128 must be taken at the 300-400 level.

If exempted, student may take Mathematics F136.

Six hours must be selected from Political Science C101, Psychology C101, or Sociology C151.

Either Marketing 361 or 362 is required. The course not chosen to meet requirement may be taken as elective.

MARKETING COURSES

313 Basic Marketing (3)

Principles and methods involved in the movement of goods and services from producers to consumers; strategies the firm may use to take advantage of market opportunities; how the social, political, and economic environment alters these market opportunities. Every semester. Prerequisite: Economics 101, 102; junior standing.

318 International Marketing (3)

Management of the international marketing activities of the firm. Planning, organizing, and implementing international marketing programs for industrial and consumer goods. Emphasis on the influence of environmental differences on marketing decisions in various countries. Spring semester alternate years. Prerequisite: 313.
319 The Logistics of Physical Distribution (3)
The interaction and interdependence of transportation, warehousing, order processing, inventory control, packaging, and plant location in the effective and efficient movement of products and services from producer to consumer. Spring semester alternate years. Prerequisite: 313.

355 Fundamentals of Purchasing (3)
The role of purchasing and materials management in modern business organizations; planning, policies, procedures, and control of purchasing operations; inventories and their control; buying for institutions and government purchasing. Fall semester. Prerequisites: junior standing or permission of instructor.

361 Principles of Selling (3)
Basic principles of selling and their practical application to sales situations. The economic and psychological motivations underlying customer purchases and product performance as they affect sales of industrial and consumer goods and services. Spring semester. Prerequisite: 313.

362 Advertising (3)
The nature of advertising, its role in society and in demand-stimulation. A conceptual foundation is made upon which specialized knowledge can be built. Research, copy, layout, production, budgeting, advertising organization, and the history and economics of advertising are covered. Every semester. Prerequisite: 313.

363 Sales Management (3)
Sales department organization and its relation to other departments; the sales manager; sales planning and forecasting; territories; selection and training of salespeople; sales policies; analysis and control of distribution costs; the organizing, controlling, motivation, and evaluation of the field sales force to accomplish market objectives. Fall semester. Prerequisite: 313.

364 Retailing (3)
Organizing, financing, staffing, and operating retail institutions. Fall semester alternate years. Prerequisites: 313, junior standing.

365 Consumer Behavior (3)
An analysis of consumer motives, attitudes, expectations, buying behavior, market adjustment, and product innovation, including a survey of related explanatory theories. The decision-making process by consumers is evaluated with reference to economic and socio-psychological factors. Every semester. Prerequisites: 313, junior standing.

415 Industrial Marketing (3)
Determination of market opportunity; planning of marketing effort; industrial product pricing; financing; managing the industrial sales force; legal aspects. Spring semester. Prerequisite: 313.

417 Distribution Channels (3)
Distribution channels, formal and informal business organizations which effect the transfer of possession and title of goods and services from producers to users. The development of channels, functional and behavioral dimensions, environmental forces, power, conflict and communication within the channel. Current and future trends in the development and management of channels. Fall semester alternate years. Prerequisite: 313.

430 Entrepreneurship and Enterprise (3)
An in-depth study of the lifestyle of the entrepreneur. Actual business opportunities identified and evaluated with group feasibility projects. The relationship of the entrepreneur to the formation and growth of the enterprise. Spring semester alternate years. Prerequisites: 313 and Finance 302, or permission of instructor.

442 Services Marketing (3)
An examination of the unique aspects of marketing in the services sector. The nature and characteristics of services, differences between goods and services and consumer evaluation processes of services will be investigated including relevant implications for services marketers. An emphasis will be placed upon identifying commonalities among services so that insight may be generalized across industries within the service sector. Spring semester. Prerequisites: 313 and six additional hours in Marketing or permission of instructor.

450 Marketing Research (3)
Study of the role of research in marketing decision-making: the research process; scientific method; analysis and interpretation of research findings. Every semester. Prerequisites: 313, Management 212 with at least 9 hours of marketing courses or permission of instructor.
The primary goal of the School of Education is to prepare qualified people to be professional educational leaders in various roles within educational institutions and similar agencies, both public and private.

All teacher licensure programs through the master's level are fully accredited by the National Council for Accreditation of Teacher Education and the Tennessee State Department of Education.

Successful completion of all degree and licensure requirements of any undergraduate program administered by the School of Education, excluding the recreation specialist and program concentrations offered in the Department of Human Ecology, qualifies the graduate for initial licensure in Tennessee provided the student scores on the NTE examinations above the minimum required by the Tennessee State Board of Education at the time of official application for initial licensure.

The School of Education is organized into five departmental units for academic programming, communications, and administrative accountability. Each unit has a department head who serves as the official spokesperson and administrative head responsible for all programs, faculty, and activities assigned to that particular department. Since a department may have several programs or activities within its jurisdiction, certain faculty are identified as program leaders of specific program areas. Names of the program leaders may be obtained by contacting the department head responsible for the particular program or the School of Education office.

Curriculum and Instruction
Professor Bartoo, Head

Educational Administration and Supervision
Professor Whitaker, Head

Educational Psychology and Special Education
Associate Professor B. Ray, Acting Head

Health, Physical Education and Recreation
Professor Norred, Head

Human Ecology
Associate Professor Tanner, Head

Courses of Study
Undergraduate — The School of Education offers approved undergraduate programs leading to the Bachelor of Science degree and to eligibility for teacher licensure in Tennessee and in those states which grant reciprocity privileges to graduates of institutions accredited by NCATE. Pre-Fall 1990 courses of study include:

- Early childhood and elementary education
- Elementary education
- Music education
- Special education (noncategorical)
- Secondary education with concentrations in art education (BFA), business, English, foreign languages (French, Latin, Spanish), health and physical education, mathematics, natural sciences, and social sciences.

New Course of Study
Any student graduating after December 1993 must complete the new course of study. Information respective to the new programs may be obtained from the Office of Teacher Certification, Hunter Hall, Room 212 or the Dean of the School of Education Office in 301 Hunter Hall.

The school also offers courses which can satisfy the following licensure endorsement areas prior to December 1993.

- Art education; elementary education; early childhood and elementary education; music education; special education; secondary education: biology, chemistry, earth and space science, economics, English, foreign language (French, Latin, Spanish), general science, health (K-12), physical education (grades 7-12), history, mathematics, physics, political science, psychology,
sociology, social science. Contact the certification officer for details.

In addition to programs leading to teacher licensure or endorsement, the School provides courses of study in Human Ecology (food & nutrition, interior design, fashion & textile merchandising, family & consumer studies) and HPER (Recreation Specialist).

Graduate — The School of Education, through the UTC Graduate Division, offers NCATE accredited and Tennessee approved programs which lead to the Master of Education degree (M.Ed.) and the Master of Science degree with a concentration in School Psychology. For further information refer to the UTC Graduate Bulletin and the Office of Graduate Admissions.

Also, any student desiring to pursue doctoral-level study in education or to gain admission to candidacy for the Doctor of Education (Ed.D.) or the Educational Specialist degree (Ed.S.) granted by The University of Tennessee, Knoxville, may complete all degree requirements at the UTC campus. For further information contact the director of the UTK Graduate Education Center located in 105 Hunter Hall.

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. Selection of qualified students is usually made on the basis of application during the sophomore year, with the exception of a transfer student who is required to complete a semester of study at UTC before the application will be reviewed by the TEP Committee. Application must be filed no later than the student's completion of the first semester of the junior year. Student who has not been officially admitted to the TEP will not be permitted to register for 400-level professional education courses.

Freshman, sophomore, and transfer students, in particular, prior to formal application to the teacher education program, must consult with an adviser in the School of Education to plan their programs. This advisory procedure also applies to every student seeking teacher licensure or endorsement.

A post-baccalaureate or transfer student must meet all of the official admission standards set by UTC, the State Department of Education, and those School of Education requirements for admission to TEP effective at the time of entry to the TEP. 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 or practicum to verify competency in those teaching fields for which initial teacher certification or endorsement is being requested through a UTC recommendation of approval. Any student seeking admission to the TEP is encouraged to confer with a faculty adviser from the School of Education and, preferably, with an adviser from the particular department in which the program of study or certification endorsement being pursued is located to ensure that the appropriate course work and admission criteria have been completed.

After September 1, 1986, a student must have met the following requirements for official admission to TEP:

1. Filed a formal application signed by a School of Education faculty adviser. Application forms may be obtained from the TEP office.
2. Filed a medical certification record signed by a licensed physician. Form may be obtained from the TEP office.
3. Earned a 2.5 cumulative grade point average, 2.5 average on all courses taken at UTC, and a 2.5 in EDO 200, 201, 203 or 204, and 205 or 206 with no grade lower than C. (Must have established a 2.5 minimum overall grade point average on all college-level courses attempted.)
4. Completed the Pre-Professional Skills Test (PPST) (basic skills in writing, reading, and mathematics) and earned at least the minimum score on each section as mandated by the state Board of Education for the particular year in which the test is taken.
5. Filed in the TEP office results of the speech and hearing test, which will be arranged by the TEP office. The student will be notified by mail of the appointment date, time, and location. A fee is assessed the student for this service by the Chattanooga Speech and Hearing Center.
6. Completed an interview and received a collective positive recommendation from the TEP interviewing committee. A portfolio must be submitted to the office of student teaching by the student prior to scheduling the interview.
7. Shown evidences of reasonable physical fitness, emotional maturity, high moral character, and a commitment to professional education. Violations of the honor code or student behavior policies as stated within the current UTC Student Handbook may be reviewed by the TEP Committee.

The final responsibility for satisfying each and all of these requirements for official entry in the TEP rests with the student.

The TEP office will notify by letter each applicant and his or her faculty adviser (and department head of the teacher education initial endorsement area being sought by the applicant) of the action taken by the TEP Committee.

Only two types of action are taken by the TEP Committee on applications submitted: approval or rejection. An applicant who is rejected will be notified of the requirement(s) not fulfilled, and the applicant should take the necessary action as quickly as possible to satisfy the designated requirement(s) for approval.

The teacher education program (TEP) office is located in 212 Hunter Hall.

Tests for Admission to Teacher Education programs
Individuals seeking admission to teacher education programs in Tennessee must pass the Pre-Professional Skills Test (PPST). The Board approved two additional options for admission of teacher candidates. Applicants who have attained an ACT composite test score of 21 or above or a composite test score of 22 or above on the Enhanced ACT, or who have attained a combined verbal and mathematics score on the SAT of 990 or above shall be exempt from the PPST. Applicants with a bachelor's degree from an accredited institution seeking admission to graduate level programs shall be exempt from the PPST provided the admitting institution establishes appropriate test requirements. UTC will administer this specified battery of tests according to dates established by the State Board of Education. This battery of tests can only be administered on these approved statewide PPST dates. Refer to the TEP office in Hunter Hall for test application forms and administration dates for each year.
UTC is committed to strict adherence to these state Board of Education requirements regarding official admission to TEP. An applicant to TEP may take the PPST an unlimited number of times.

And finally, the state Board of Education requires the National Teacher Examinations (NTE) as a prerequisite for granting the teacher's professional certificate. The “Core Battery” section and “Specialty Area” component for licensure endorsements for this examination are required with state approved minimal passing scores for this battery for initial licensure. Consequently, students are advised to take both the "core battery" and "Specialty Area" sections unless there is no Tennessee approved specialty area.

The NTE battery of examinations is given on campus through the UTC Testing Center at least two times a year in accordance with the schedule published by the Educational Testing Service of Princeton, New Jersey, for nationwide administration of the test. Information, bulletins, and applications for the NTE are available from the Testing Supervisor for Undergraduate Programs located in Hunter Hall, Room 209A.

Admission to Student Teaching

The application for admission to the student teaching semester must be filed with the director of student teaching (212 Hunter Hall) approximately six months preceding the actual experience. For example, if a student plans to student teach during the spring semester of an academic year, the application must be completed and on file no later than July 1 of the preceding year. For the fall semester of an academic year, the application should be completed and on file no later than the preceding March 1.

Application for student teaching is not necessarily contingent upon official admission to TEP; therefore, a student should apply for student teaching to comply with the required deadline dates. A student, however, will not be permitted to actually student teach until he or she has satisfactorily fulfilled all requirements for admission to the TEP.

Before gaining official approval for admission to the student teaching semester from the School of Education, the student must have fulfilled the following requirements:

1. Gained official admission to the TEP one semester prior to the actual student teaching semester.
2. Completed student teaching application with signature of assigned faculty adviser (in triplicate).
3. Satisfactorily completed appropriate professional education and endorsement area (content) courses.
4. Satisfactorily completed at least 90 percent of course of study in endorsement area(s). If the percentage of course work completed is questionable, director of student teaching and appropriate department head within School of Education will make the decision.
5. Received positive recommendation of the major department(s) (for a degree candidate in Secondary Education or K-12 initial certification, the recommendation of the department in which the teaching area concentration is based).
6. Maintained a minimum grade point average of 2.5 on courses completed at UTC, a cumulative 2.5 grade point average on all courses, a 2.5 grade point average in professional education courses with no grade lower than C, a 2.5 grade point average in endorsement area courses, and senior standing.
7. Demonstrated competency in manuscript and cursive handwriting. This requirement applies to all Elementary, Early Childhood, and Special Education majors (assessment of these skills will be completed during EDCI 403).
8. Completed a biographical sketch (in triplicate to be returned with completed application for student teaching to the TEP office).

Final responsibility for insuring that all of these requirements are fulfilled prior to being admitted to student teaching rests with the student.

Student Teaching

The professional semester schedule sequence in which student teaching usually occurs includes these courses:

- Elementary Education EDCI 405, 407, 423
- Early Childhood and Elementary Education EDCI 407, 419, 423
- Special Education EDSP 440, 461, 465, 469
- Secondary Education EDCI 436, 437, 438

In the new program all majors seeking teaching licensure will student teach for a full semester (16 weeks). Placement of a student will include an inner-city and a suburban/rural school environment divided equally during the semester. In addition to the opportunity for dual locations, the student teacher will be expected to teach on two distinct grade levels when possible. For example, the elementary student teacher will teach in one of grades 1-3 for half of the semester and in one of grades 4-6 during the other half of the semester. Secondary student teachers will be assigned to a junior high or upper middle school, grades 7-9, for one-half semester and to a high school, grades 10-12, for the other half.

When appropriate and educationally feasible, the secondary student teacher may teach a different subject matter concentration for which he or she has been professionally prepared.

Special Education majors are scheduled for EDSP 440, 461, 465 during the first half of the semester and conclude the semester enrolled in EDSP 469 in the pre-1990 program.

Student teaching is evaluated on a satisfactory/fail basis. A student not satisfactorily completing student teaching will receive a failing grade and will have the opportunity to repeat the course. Department heads have the opportunity to recommend placements for a student teacher and the student may request a particular school(s); however, final authority for the student teaching placement and teaching assignment rests with the director of student teaching and dean. As a general rule a student is not located in the school from which he or she recently graduated or under the supervision of a close family relative.

Student Teaching Orientation

General orientation seminars concerning student teaching and the professional education semester are held for all prospective student teachers during the semester immediately preceding the student teaching experiences semester. Each candidate is expected to attend these scheduled conferences. Non-attendance could delay the student teaching semester. Particular dates and locations for these conferences may be learned from reviewing the student teaching bulletin board at the TEP office, 212 Hunter Hall.

Recommendation for Certification

The School of Education will recommend licensure for only those...
students who have successfully completed one or more of the UTC initial licensure or endorsement programs approved by the Tennessee State Department of Education. Application for a professional teacher's certificate should be completed during the last week prior to graduation. Application forms may be obtained from the Office of Records, 128 Hooper Hall.

Application for a Tennessee Teacher's Professional Certificate must have been completed within the 5-year period preceding the issuance of the certificate; otherwise, the applicant must have earned 8 semester or 12 quarter hours of resident credit within the last year.

Tennessee state regulations stipulate that the applicant for a professional certificate must be recommended by the designated certifying officer or dean of an approved teacher training institution. To receive this recommendation, the applicant should have fulfilled the following criteria:*  

1. A cumulative grade point average of 2.52.  
2. A 2.5 cumulative grade point average on all UTC coursework.  
4. A grade point average of 2.5 in the teaching fields and in professional education courses with no grade less than C in the latter7.  
5. Official admission to the TEP and fulfillment of all special recommendations set forth by the TEP Committee and specific departmental requirements in the area(s) of concentration (refer to particular departmental program or course of study).  
6. Completion of the National Teachers Examinations (NTE) with earned scores no less than the minimum cut-off scores established by the state Board of Education for the particular year in which initial certification is requested (administered by the UTC Testing Center- scores must be sent to UTC and Office of Certification, Tennessee State Department of Education).  

* 7. Current requirements for licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for licensure/endorsement areas approved by the Tennessee Board of Education. (See respective department head for new program information, as the new programs are still under going curriculum revision).

These criteria apply to both undergraduate (B.A. and B.S.) and post-baccalaureate students desiring a certification recommendation from UTC.  

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

A person who does not currently hold or has never held a valid professional teacher's certificate must satisfactorily complete a UTC approved endorsement program to earn the official UTC recommendation for certification. To learn of the particular endorsement requirements, a student should inquire through the appropriate departmental office and certification officer within the School of Education. Written guidelines for earning UTC approval in the various endorsement areas may be obtained from the respective department head responsible for the certification endorsement area being sought.  

Any student who anticipates teaching outside of Tennessee is strongly encouraged to request a checksheet of certification requirements from the state Department of Education, Office of Certification, for the state in which he or she plans to teach. This information should be gained by the student before the end of the sophomore year so that an appropriate course of study might be scheduled. Course and competency requirements to satisfy out-of-state certification standards may be in addition to Tennessee certification requirements and UTC approved degree requirements.

Particular attention should be noted, however, for any student who has never held a valid teacher's certificate to the fact that graduation with a master's degree program from UTC alone does not guarantee certification in that discipline area. All certification requirements of the particular state awarding the license must be fulfilled also. In some instances a student may satisfy all of the Tennessee requirements for the certification endorsement by completion of a state approved master's degree program at UTC.

Application for Teacher Licensure/Certification, Endorsement  

An application for all teacher licensure and certification, adding a teaching area, and professional school service personnel endorsement may be obtained from the Office of Records, 128 Hooper Hall. The Tennessee State Department of Education, Office of Teacher Certification, requires that an application for any type of initial certification finally approved by that office must be initiated through a Tennessee institution with an approved program. This includes in-state and out-of-state applicants for certification.

UTC does not guarantee that satisfactory completion of a program listed in the UTC Bulletin upon initial admission to the University by the student will meet all of the licensure or certification requirements at the time the person applies for initial certification. This means that UTC will recommend only those applicants who have met all of the licensure and certification requirements effective at the time of recommendation.  

Any student who completes a certification program at UTC, regardless of whether he or she does or does not intend to teach in Tennessee, should apply for Tennessee licensure since many states require an applicant to be certified or licensed in the state where he or she graduated and/or completed an initial certification program.

In view of this Tennessee mandate, a student or any other person seeking teacher licensure or endorsement recommendation from UTC is strongly encouraged to confer with the appropriate faculty adviser(s) within the School of Education upon entry into the TEP or 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 applicant's graduation.

A fact sheet to assist an applicant in completing the certification application is available upon request to the Records Office. Applicants are encouraged to follow closely the procedures listed within this fact sheet to insure completion of all information which will be reviewed by the UTC certification officer and then forwarded to the Tennessee State Department of Education, Office of Teacher Certification for issuance of the Probationary License. The Apprentice License after year one is valid for three years. Upon successful completion of four years, the Professional License is issued and is valid for 10 years/renewable.

Clarification of any of these above mentioned requirements
should be referred to the appropriate department head or if necessary, to the certification officer.

Career Education Resource Center
The Career Education Resource Center contains various types of materials for use by students in counseling, practitioners in the field, and teachers who are implementing career education in their curriculum. The center contains career games, sound filmstrips, the complete Information Needed for Occupational Entry system, numerous cassettes, and other pertinent career publications and materials. Materials are geared for grades K-12. The center is located on the third floor of Frist Hall and operated under the direction of the Educational Psychology and Special Education Department.

Center for Environmental/Energy Education
In conjunction with TVA, the Department of Curriculum and Instruction provides instruction and academic support services for preservice and in-service teacher education programs. Instructional resource materials focusing on environmental and energy education along with professional consultants are also available. The center is located on the second floor of Hunter Hall on campus.

Certification Office
The Certification Office is responsible for processing initial applications and approval of additional endorsements for certification to teach in the state of Tennessee. Students should refer questions concerning certification to the certification officer. This office, located in Hunter Hall, Room 212, can also provide some assistance in processing certification applications to states other than Tennessee.

Under special circumstances, policies, procedures, and requirements for admission to the TEP and student teaching may be waived or revised at the discretion of the dean of the School of Education. These grade point average requirements apply only to those students officially admitted to TEP after July 1, 1986.

Art (B.F.A.): Art Education

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses other than art: one from humanities, one from fine arts, and one from either (3 hours each), plus courses in humanities/fine arts to total 12 hours in three fields other than history and art
Category C: 2 approved behavioral or social science courses (6 hours) plus one course to total 9 hours behavioral or social science in two fields other than education, for certification purposes, 3 of the hours may be in history
Category D: 2 natural science courses to total 8 hours in natural science (one course must be approved laboratory science)
Category F: Mathematics F120
Category G: 1 approved perspectives course (3 hours)

Freshman Seminar
1 additional course outside teaching field from communications, humanities, mathematics, natural or behavioral sciences
Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

NOTE: Current requirements for endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for endorsement areas approved by the Tennessee Board of Education. The Art program is still undergoing curriculum revision. Questions about the new program should be directed to the Art Department or School of Education.

54 hours Art including 101, 103, 105, 106, 205 or 206, 207 208, 227, 244, 305r, 323, 324, 333, 400r; 9 hours from 214, 215, 414
Participation in senior art exhibition
33 hours from the School of Education including Curriculum and Instruction 200, 201, 204, 205, 321, 431, 433 434r, 437, 438; Special Education 332 or 333
For graduation: 2.0 average in art and 2.0 average in School of Education courses
For certification: 2.5 average overall, 2.5 average in teaching field, and 2.5 average in education courses with no grade less than C in the latter
Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

First Semester
Second Semester

FRESHMAN
General Education Category A 3
Mathematics F120 3
Physical Education 021 1
Art 103 3
Art 105 3
University Studies 101 3

Total 16

SOPHOMORE
General Education Category B
Humanities 3
ED Curr. & Instr. 204 3
ED Curr. & Instr. 205 1
Art 207 3
Art 227 3
Art 205 or 206 3

Total 16

JUNIOR
Apply for student teaching
General Education Category C
ED Special Education 3
Humanities/Fine Arts Elective 3
Art 305 3
Art 323 3
Art 333 3

Total 18

SENIOR
Art 324 3
Social Science Elective 3
Art History 3
General Education Category B
Fine Arts 3
ED Curr. & Instr. 431 2
ED Curr. & Instr. 433 4

Total 18

TOTAL HOURS 130

Emergency School Learning (B.S.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: History B102, Philosophy B201, and Theatre and Speech Bl 15
Category C: Economics C102 and Political Science C101
Category D: General Science D111
Category F: Mathematics F115
Category G: 1 approved perspectives course (3 hours)
### Major and related courses

**NOTE:** Current requirements for licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it is emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for licensure/endorsement areas approved by the Tennessee Board of Education. The new Multidisciplinary School Learning program is still in a period of transition. Course titles, number, and credit hours maybe adjusted or changed as curriculum decisions are made.

Theatre and Speech 107 or 109

<table>
<thead>
<tr>
<th>University Studies 101</th>
</tr>
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<tbody>
<tr>
<td>Geography 103</td>
</tr>
<tr>
<td>3 hours of literate elective</td>
</tr>
<tr>
<td>Computer Science 102</td>
</tr>
<tr>
<td>Environmental Science 150 or Biology 111*</td>
</tr>
<tr>
<td>University Studies 101</td>
</tr>
</tbody>
</table>

**Total Hours: 128**

### Major Core:


- Profession education: 19 hours required from Curriculum and Instruction 201, 320, 401, 402, 403, 404, 406,* and 423, Special Education 332

### Completion of one of the following concentrations:

**K-4:**
- 27 hours required including Human Ecology 241 or Psychology 221; Human Ecology 445; Psychology 340*; 3 hour elective in teaching discipline, and Curriculum and Instruction 410 and 419.

**5-8:**
- 24 hours including Anthropology 208, Psychology 221 or Human Ecology 241; Psychology 341*; 3 hour elective in teaching discipline; Curriculum and Instruction 405.

### For graduation:

- 2.0 average in School of Education courses
- For certification: 2.5 average overall, 2.5 average in major, and 2.5 average in education courses with no grade less than C. Minimum of 30 hours of 300 and 400 level courses Electives to complete 128 hours

*Courses have not yet been developed so numbers are subject to change

### Pending approval of the UT Board of Trustees and Tennessee Higher Education Commission

#### Typical course of study in multidisciplinary school learning (B.S.)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English A121</td>
<td>English A122</td>
</tr>
<tr>
<td>University Studies 101</td>
<td>Economics C102</td>
</tr>
<tr>
<td>Theatre &amp; Speech B15</td>
<td>History B102</td>
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<tr>
<td>Political Science C101</td>
<td>General Science D11</td>
</tr>
<tr>
<td>Mathematics Fl 15</td>
<td>Mathematics 116</td>
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<tr>
<td>HPER 021</td>
<td>HPER Activity 1</td>
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<td>Total 17</td>
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<table>
<thead>
<tr>
<th>SOPHOMORE</th>
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</thead>
<tbody>
<tr>
<td>Theatre &amp; Speech 107 or 109</td>
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<tr>
<td>Philosophy B201</td>
</tr>
<tr>
<td>Geography 103</td>
</tr>
<tr>
<td>Computer Science 102</td>
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<td>ED CI 201</td>
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<tr>
<td>General Science 101</td>
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<table>
<thead>
<tr>
<th>JUNIOR YEAR</th>
<th>Total Hours 128</th>
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</thead>
<tbody>
<tr>
<td>HEC0 241 orPSY221</td>
<td>Music 340</td>
</tr>
<tr>
<td>**HECO 445 or PSY341</td>
<td>USTU 340</td>
</tr>
<tr>
<td>**Psy340 or Anth208</td>
<td>Humanities 340</td>
</tr>
<tr>
<td>Art 301</td>
<td>HPER 302</td>
</tr>
<tr>
<td>Art 340</td>
<td>HPER 330</td>
</tr>
<tr>
<td>Theatre &amp; Speech 340</td>
<td>ED Curr. &amp; Instr. 320</td>
</tr>
<tr>
<td>Elective teaching</td>
<td>3</td>
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<tr>
<td>SENIOR YEAR</td>
<td>ED SP 332</td>
</tr>
<tr>
<td>ED Curr. &amp; Instr. 401</td>
<td>ED Curr. 6k Instr. 405</td>
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<td>ED Curr. &amp; Instr. 402</td>
<td>12</td>
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<tr>
<td>ED Curr. &amp; Instr. 403</td>
<td>1</td>
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<tr>
<td>ED Curr. &amp; Instr. 404</td>
<td>1</td>
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<tr>
<td>ED Curr. &amp; Instr. 406</td>
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<tr>
<td>ED Curr. &amp; Instr. 410</td>
<td>3</td>
</tr>
<tr>
<td>ED Curr. &amp; Instr. 423</td>
<td>3</td>
</tr>
</tbody>
</table>

### Music Education (B.S.)

#### General Education

(see pages 22-23 for list of approved courses)

- **Category A:** 2 approved courses in written communication in the English language (6 hours)
- **Category B:** 3 approved courses other than music: one from humanities, one from fine arts, and one from either (3 hours each), plus courses in humanities/fine arts to total 12 hours in three fields other than history
- **Category C:** 2 approved behavioral or social science courses plus one course to total 9 hours behavioral or social science in two fields other than education; for certification purposes, 3 of the hours may be in history
- **Category D:** 2 natural science courses to total 8 hours in natural sciences (one course must be approved laboratory science)
- **Category F:** Mathematics F120
- **Category G:** 1 approved perspectives course other than music (3 hours)

### The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

#### Major and related courses

**NOTE:** Current requirements for licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it is emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for licensure/endorsement areas approved by the Tennessee Board of Education. The Music program is still undergoing curriculum revision. Question about the new program should be directed to the Music Department or School of Education.

Music Education (B.S.)

- **Music Proficiency:**
  - 1. Instrumental: Music 221, 3 hours of 223, 3 hours of 224; 2 hours of 225; 226; 307 or 326; 325; 327, 328
  - 2. Vocal: 133, 134, 221, 222; 307, 309, 310, 333; 2 hours applied piano study in addition to piano proficiency study

- **Music Proficiency:**
  - 33 hours from the School of Education including Curriculum and Instruction 200, 201, 204, 205, 321, 432, 436r, 437, 43; Special Education 332 or 333; Music 321

- **For graduation:** 2.0 average in music and 2.0 average in School of Education courses
- **For certification:** 2.5 average overall, 2.5 average in teaching field, and 2.5 average in education courses with no grade less than C in the latter
- **Minimum of 30 hours of 300 and 400 level courses Electives to complete 128 hours**
Typical courses of study in music education (B.S.)

Music Education: Vocal (B.S.)

First Semester | Second Semester
---|---
FRESHMAN | Total 19
Mathematics F120 | ED Curr. & Instr. 201 3
General Education Category A | ED Curr. & Instr. 200 1
General Education Category C | General Education Category A 3
Music 000 | Physical Education 021 1
Music 000 | Music 000 0
Ensemble-Marching Band | Instrumental Ensemble 1
Applied Music (Primary) | Applied Music (Primary) 1
Music 131 | Music 108 3
Music 107 | General Education Category B 3
University Studies 101 | Total 18

SOPHOMORE
General Education Category D | Apply for admission to TEP
Physical Education Activity | ED Curr. & Instr. 204 3
Music 000 | ED Curr. & Instr. 205 1
Ensemble-Marching Band | General Education Category C 3
Applied Music (Primary) | Music 000 0
Music 141 | Applied Music (Primary) 1
Music 203 | Music 25 1
Music 207 | Music 307 2
Music 223r | Music 315 3
Music 226 | Music 333 2
Music 226 | Total 17
Music 226 | General Education Category B 3
Total | Total 18

JUNIOR
Apply for student teaching | ED Curr. & Instr. 321 3
Natural Science | ED Special Education 333 3
ED Curr. & Instr. 321 | General Education Category B 3
General Education Category B | General Education Category B 3
Music 000 | Music 000 0
Choral Ensemble | Choral Ensemble 1
Applied Music (Primary) | Applied Music (Primary) 1
Music 209 | Music 210 1
Music 221 | Music 25 1
Music 307 | Music 309 1
Music 315 | Music 316 3
Music 315 | Music 327 2
Music 315 | Total 18
Music 325 | General Education Category B 3
Music 325 | Total 17
Total | Total 18

SENIOR
ED Curr. & Instr. 432 | ED Curr. & Instr. 439 9
General Education Category G | ED Curr. & Instr. 436 2
Social Science Elective | ED Curr. & Instr. 437 2
Music 000 | Music 000 0
Choral Ensemble | Choral Ensemble 2
Music 310 | Music 310 2
Music 321 | Music 321 3
Applied Music (Primary) | Applied Music (Primary) 2
Music Elective | Music Elective 1
Total | Total 19
Total | Total 13

TOTAL HOURS 138

Secondary Education (B.S.): Business Concentration

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts and one from either (3 hours each) courses to total 12 hours humanities/fine arts in three fields other than history
Category C: 2 approved behavioral or social science courses (6 hours) plus one course to total 9 hours behavioral or social sciences in two fields other than education (approved related courses below may apply); for certification purposes, 3 of the hours may be in history
Category D: 2 natural science courses to total 8 hours in natural sciences (one course must be approved laboratory science)
Category E: Mathematics F120
Category G: 1 approved perspectives course (3 hours)

1 additional course outside teaching field from communications, humanities, mathematics, natural or behavioral sciences

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity
Major and related courses

NOTE: Current requirements for licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for licensure/endorsement areas approved by the Tennessee Board of Education. The business concentration is in the process of being phased out.

Human Ecology 328
Economics C101, C102
Business: Management 103; Accounting 201, 202, 335
Office Administration 109, 121, 223, 310

One of the following areas:
1. Office Administration 125, 220, 227, 228, 229
2. Two additional accounting courses for minimum of 10 hours in accounting, Accounting 336, 3 hours economics elective (hours in economics must total 12 for endorsement in this area)
33 hours from the School of Education including Curriculum and Instruction 200, 201, 204, 205, 321, 431, 433, 436r, 437, 438; Special Education 333

For graduation: 2.0 average in teaching fields and 2.0 average in School of Education courses
For certification: 2.5 average overall, 2.5 average in teaching field, and 2.5 average in education courses with no grade less than C in the latter

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical course of study in secondary education (B.S.): business concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td></td>
</tr>
<tr>
<td>General Education Category A 3</td>
<td>General Education Category A 3</td>
</tr>
<tr>
<td>Mathematics F120 3</td>
<td>Economics C101 3</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective 3</td>
<td>Physical Education Activity 1</td>
</tr>
<tr>
<td>Physical Education 021 1</td>
<td>Office Administration 121 3</td>
</tr>
<tr>
<td>Office Administration 109 3</td>
<td>Fine Arts Elective 3</td>
</tr>
<tr>
<td>University Studies 101 3</td>
<td>Science, Category D 4</td>
</tr>
<tr>
<td><strong>Total</strong> 16</td>
<td><strong>Total</strong> 17</td>
</tr>
<tr>
<td><strong>SOPHOMORE</strong></td>
<td></td>
</tr>
<tr>
<td>Office Administration 223 3</td>
<td>Apply for admission to TEP</td>
</tr>
<tr>
<td>ED Curr. &amp; Instr. 201 3</td>
<td>ED Curr. &amp; Instr. 204 3</td>
</tr>
<tr>
<td>Office Administration 125 3</td>
<td>Economics C102 3</td>
</tr>
<tr>
<td>Office Administration 310 3</td>
<td>Human Ecology 328 3</td>
</tr>
<tr>
<td>ED Curr. &amp; Instr. 200 1</td>
<td>Office Administration 227 3</td>
</tr>
<tr>
<td>Science Elective 4</td>
<td>B Accounting 201 3</td>
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<tr>
<td><strong>Total</strong> 17</td>
<td><strong>Total</strong> 16</td>
</tr>
<tr>
<td><strong>JUNIOR</strong></td>
<td></td>
</tr>
<tr>
<td>Apply for student teaching 3</td>
<td>Business Management 103 3</td>
</tr>
<tr>
<td>Office Administration 228 3</td>
<td>Office Administration 220 3</td>
</tr>
<tr>
<td>Business Accounting 335 3</td>
<td>ED Special Education 333 3</td>
</tr>
<tr>
<td>ED Curr. &amp; Instr. 321 3</td>
<td>Humanities/Fine Arts Elective 3</td>
</tr>
<tr>
<td>B Accounting 202 3</td>
<td>Perspectives Elective 3</td>
</tr>
<tr>
<td>Social Science Elective 3</td>
<td>Human Ecology 328 3</td>
</tr>
<tr>
<td><strong>Total</strong> 18</td>
<td><strong>Total</strong> 15</td>
</tr>
<tr>
<td><strong>SENIOR</strong></td>
<td></td>
</tr>
<tr>
<td>Office Administration 229 3</td>
<td>ED Curr. &amp; Instr. 436r 2</td>
</tr>
<tr>
<td>ED Curr. &amp; Instr. 431 2</td>
<td>ED Curr. &amp; Instr. 437 2</td>
</tr>
<tr>
<td>ED Curr. &amp; Instr. 433 4</td>
<td>ED Curr. &amp; Instr. 438 9</td>
</tr>
<tr>
<td>Electives &lt; 9</td>
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<tr>
<td><strong>Total</strong> 18</td>
<td><strong>Total</strong> 13</td>
</tr>
</tbody>
</table>

**TOTAL HOURS 128**

Secondary English (B.S.)

**General Education** (see pages 22-23 for list of approved courses)
- **Category A**: 2 approved courses in written communication in the English language (6 hours)
- **Category B**: Art B111, Music B111, Philosophy B201
- **Category C**: 1 approved behavioral or social science courses (3 hours) plus Psychology C101
- **Category D**: 2 natural science courses to total 8 hours in natural sciences (one course must be approved laboratory science)
- **Category F**: Mathematics F120
- **Category G**: Anthropology G208

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

**NOTE: Current requirements for Licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for licensure/endorsement areas approved by the Tennessee Board of Education. The new English program is still in a period of transition. Course titles, numbers and credit hours maybe adjusted or changed as curriculum decisions are made.**

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical course of study in Secondary English (B.S.)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td></td>
</tr>
<tr>
<td>English 121 3</td>
<td>English 122 3</td>
</tr>
<tr>
<td>University Studies 101 3</td>
<td>ED Curr. &amp; Instr. 204 3</td>
</tr>
<tr>
<td>Psychology C101 3</td>
<td>Art B111 3</td>
</tr>
<tr>
<td>HPER021 1</td>
<td>Foreign Language Elective 4</td>
</tr>
<tr>
<td>Theatre &amp; Speech 107 or 109 3</td>
<td>Computer Science 102 3</td>
</tr>
<tr>
<td>Category D elective 4</td>
<td></td>
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<tr>
<td><strong>Total</strong> 17</td>
<td><strong>Total</strong> 16</td>
</tr>
<tr>
<td><strong>SOPHOMORE</strong></td>
<td></td>
</tr>
<tr>
<td>English 211 3</td>
<td>Apply for admission to TEP</td>
</tr>
<tr>
<td>Mathematics Fl 20 3</td>
<td>History 204 3</td>
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<tr>
<td>History 203 3</td>
<td>English 212 3</td>
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<tr>
<td>Physical Education Activity 1</td>
<td>Philosophy and Religion B201 3</td>
</tr>
<tr>
<td>ED Curr. &amp; Instr. 201 3</td>
<td>English 229 3</td>
</tr>
<tr>
<td>English 203 3</td>
<td>English 207 3</td>
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<tr>
<td>Music B111 3</td>
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<tr>
<td><strong>Total</strong> 16</td>
<td><strong>Total</strong> 18</td>
</tr>
</tbody>
</table>
Typical course of study in secondary education (B.S.)'s foreign language concentration

First Semester

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>General Education Category A</td>
<td>3</td>
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<tr>
<td>University Studies 101</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education 021</td>
<td>1</td>
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<tr>
<td>French 101</td>
<td>4</td>
</tr>
<tr>
<td>Science Elective, Category D</td>
<td>4</td>
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<tr>
<td>Humanities/Fine Arts Elective</td>
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Second Semester

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<tr>
<td>Physical Education Activity</td>
<td>1</td>
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<tr>
<td>French 102</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics F120</td>
<td>3</td>
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<tr>
<td>Science Elective</td>
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<tr>
<td>Social Science Elective</td>
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<tr>
<td>Total</td>
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SOPHOMORE

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>French 211</td>
<td>3</td>
</tr>
<tr>
<td>ED Curr. &amp; Instr. 200</td>
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<td>ED Curr. &amp; Instr. 201</td>
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<tr>
<td>Humanities/Fine Arts Electives</td>
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JUNIOR

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<th>Hours</th>
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<tbody>
<tr>
<td>Apply for student teaching</td>
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</tr>
<tr>
<td>ED Curr. &amp; Instr. 321</td>
<td>3</td>
</tr>
<tr>
<td>English 214</td>
<td>3</td>
</tr>
<tr>
<td>English 361</td>
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</tr>
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<td>English 410</td>
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</tr>
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<td>English 1  *)</td>
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<tr>
<td>Science Elective</td>
<td>4</td>
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<tr>
<td>English 300</td>
<td>3</td>
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SENIOR

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<th>Hours</th>
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<tr>
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<td>English 460</td>
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<td>History 385</td>
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</tr>
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<td>Anthropology G208</td>
<td>3</td>
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<td>ED Curr. &amp; Instr. 438</td>
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<td>Electives</td>
<td>2</td>
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<td>Total</td>
<td>17</td>
</tr>
</tbody>
</table>

TOTAL HOURS 128

Secondary Education (B.S.): Foreign Language (French, Latin, or Spanish) Concentration

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each), plus courses to total 12 hours humanities/fine arts in three fields other than history and foreign languages

Category C: 2 approved behavioral or social science courses (6 hours) plus one course to total 9 hours behavioral or social sciences in two fields other than education; for certification purposes, 3 of the hours may be in history

Category D: 2 natural science courses to total 8 hours in natural sciences (one course must be approved laboratory science)

Category E: Mathematics F120

Category G: 1 approved perspectives course other than foreign languages (3 hours)

The Freshman Seminar

1 additional course outside teaching field from communications, humanities, mathematics, natural or behavioral sciences

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

NOTE: Current requirements for licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for licensure/endorsement areas approved by the Tennessee Board of Education. The foreign language program is still undergoing curriculum revision. Questions about the new program should be directed to the Foreign Language Department or School of Education

French and Spanish:

22 hours in one language above the second college year

Latin:

21 hours beyond Latin 101, 102, plus 9 hours from Classics 310, 395, 396, 397 33 hours from the School of Education including Curricula and Instruction 200, 201, 204, 205, 312, 431, 433, 436, 437, 438; Special Education 333

For graduation: 2.0 average in foreign language and 2.0 average in School of Education courses

For certification: 2.5 average overall, 2.5 average in teaching field, and 2.5 average in education courses with no grade less than C in the latter

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

Secondary Mathematics (B.S.):

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 2 approved courses: one from fine arts, and one from either humanities, or fine arts (3 hours each), plus Philosophy B201, and course to total 12 hours humanities/fine arts other than history

Category C: 1 approved behavioral or social science courses (3 hours) plus one Psychology C101

Category D: Physics D230 plus one laboratory science course to total 8 hours

Category E: Mathematics F130

Category G: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity
Major and related courses

NOTE: Current requirements for licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for licensure/endorsement areas approved by the Tennessee Board of Education. The new mathematics program is still in a period of transition. Course titles, numbers and credit hours maybe adjusted or changed as curriculum decisions are made.

The mathematics sequence may begin with 145 rather than 150 depending on preparation.

Computer Science 102 and 121
Theatre and speech 107 or 109
Physics 231
40 hours of mathematics including Mathematics 160, 212,245, 255,295,321,350, 430,452

AND
Mathematics 307 and 9 hour electives in mathematics
OR
Mathematics 407 and 408 and 6 hours electives in mathematics
31 hours from the School of Education including Curriculum and Instruction 201, 204, 321, 431, 433, 438; Special Education 333

For graduation: 2.0 average in mathematics and 2.0 average in School of Education

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

Pending approval of the UT Board of Trustee and The Tennessee Higher Education Commission.

Typical course of study in secondary mathematics (B.S.):

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<th>First Semester</th>
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<tbody>
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<tr>
<td>English 121</td>
<td>3 English 122</td>
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<tr>
<td>Mathematics F150</td>
<td>Mathematics 160</td>
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<tr>
<td>Physical Education</td>
<td>General Education Category C</td>
</tr>
<tr>
<td>University Studies 101</td>
<td>Theatre &amp; Speech 107 or 109</td>
</tr>
<tr>
<td>Psychology</td>
<td>3 Science Elective</td>
</tr>
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<td>Computer Science</td>
<td>3</td>
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<td><strong>Total</strong></td>
</tr>
<tr>
<td><strong>17</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

| **SOPHOMORE**  |                   |
| Mathematics 212 | 3 Apply for admission to TEP |
| Mathematics 295 | 3 Mathematics 245 |
| Philosophy B201 | 3 General Education Category B |
| ED Curr. & Instr. 201 | 3 ED Curr. & Instr. 204 |
| Physics D230    | 3 Mathematics 307  |
|                 | Physics 231       |
| **Total**       | **Total**         |
| **16**          | **16**            |

| **JUNIOR**     |                   |
| **Apply for student teaching** | Mathematics 321 |
| ED Curr. & Instr. 321 | 3 Mathematics 452 |
| Mathematics 255    | 3 Physical Education Activity |
| Mathematics 430    | 3 General Education Category B |
| Humanities/Fine Arts Elective | 3 ED Special Education 333 |
| Computer Science  | 3 Mathematics Elective |
| General Education Category G | 3 |
| **Total**         | **Total**         |
| **18**            | **16**            |

| **SENIOR**      |                   |
| ED Curr. & Instr. 433 | 4 |
| ED Curr. & Instr. 431 | 3 |
| Mathematics 350    | 3 |
| Mathematics Elective | 6 ED Curr. & Instr. 438 |
| **Total**          | **Total**         |
| **16**             | **12**            |

**TOTAL HOURS 128**

Secondary Natural Sciences (B.S.)

**General Education** (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 2 approved courses: one from fine arts and one from either humanities and fine arts (3 hours each), plus Philosophy B201, plus courses to total 12 hours humanities and fine arts other than history

Category C: 1 approved behavioral or social science courses (3 hours) plus one Psychology C101

Category D: 1 approved natural science course to total 4 hours in natural sciences

Category F: 1 approved mathematics course

Category G: 1 approved perspectives course

The Freshman Seminar

All natural sciences majors are required to complete at least one of the following concentration areas:

**Biology concentration**

Geology D111, or 112
Mathematics 135 and F136, or (F145 and F150)
Biology 401, 208, 209,325, 326

one course from each of the following three areas: ecology (Biology 306 and 307, or 416) evolution (Biology 303, and 307, or 4116) physiology (Biology 304, 423, or 463)

AND

one course from one of the following two areas: botany (Biology 207, or 352) zoology (Biology 312, 313, 352)

**Chemistry concentration:**

Geology D111, or 112
Mathematics 135 and F136, or (F145 and F150)
Chemistry 401, 311, 341, 342, 351, 352 and 466

**Earth and Space Sciences concentration (old program)**

Mathematics 135 and F136, or (F145 and F150)
Geology D111, or 112

16 additional hours in the sciences including at least one course from each of the following areas: Astronomy 101 or 102

Conservation of Natural Resources: Geography 407; Environmental Studies 150, 240, 250
Geology/Geography: Geography 101, 221.; Geography 303, 307, 321, 341
Meteorology: Geography 206
Oceanography: Geography 225

At least 8 of the above hours in the concentration must be at the 300 level or above

**Physics**

Mathematics F150, 160
Geology D111, 112
19 hours of physics including Physics 401, 231, 232, 318
Education— 137

For graduation: 2.0 average in natural sciences and 2.0 average in School of Education
For certification: 2.5 average overall, 2.5 average in natural sciences, and 2.5 average in School of Education with no grade below C

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours
Pending approval of UT Board of Trustees and the Tennessee Higher Education Commission.

Typical course of study in secondary natural sciences: Biology concentration(B.S.)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>FRESHMAN</td>
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<tr>
<td>English A121</td>
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<tr>
<td>University Studies 101</td>
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<tr>
<td>Biology D121</td>
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<tr>
<td>Chemistry D121</td>
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<tr>
<td>Physical Education 021</td>
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<tr>
<td>Physical Education 022</td>
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<table>
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<tr>
<td>Physics D103</td>
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<tr>
<td>ED Curr. &amp; Instr. 201</td>
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<tr>
<td>Philosophy B201</td>
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<td>Geology D11</td>
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<td>General Education Category G</td>
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TOTAL HOURS 128

Typical course of study in secondary natural sciences: Earth and space sciences concentration(B.S.)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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TOTAL HOURS 128

Typical course of study in secondary natural sciences: Chemistry concentration(B.S.)

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TOTAL HOURS 128

Typical course of study in secondary natural sciences: Earth and space sciences concentration(B.S.)

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<th>FIRST SEMESTER</th>
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<table>
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TOTAL HOURS 128
Typical course of study in secondary natural sciences: physics concentration(B.S.)

<table>
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<th>Second Semester</th>
</tr>
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<td>Physics D103</td>
<td>Theatre &amp; Speech 107, or 109</td>
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<td>Psychology C101</td>
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<td>Total</td>
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<td>17</td>
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<tr>
<td><strong>SOPHOMORE</strong></td>
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</tr>
<tr>
<td>Chemistry D121</td>
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<tr>
<td>General Education Category B</td>
<td>Chemistry 122</td>
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<td>ED Curr. &amp; Instr. 201</td>
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<td>Mathematics 160</td>
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<td>ED Curr. &amp; Instr. 431</td>
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<td>Geology D11</td>
<td>ED Curr. &amp; Instr. 433</td>
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<td>Physics C31</td>
<td>ED Special Education 333</td>
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<td>Physics Elective</td>
<td>Mathematics 232</td>
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<td>Physics 401</td>
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<tr>
<td>Physics Elective</td>
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<tr>
<td>Geology D11</td>
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<td>ED Curr. &amp; Instr. 438</td>
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<td>12</td>
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<td><strong>TOTAL HOURS</strong></td>
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Secondary Social Sciences (B.S.):

**General Education** (see pages 22-23 for list of approved courses)
- Category A: 2 approved courses in written communication in the English language (6 hours)
- Category B: 1 approved courses from fine arts (3 hours), plus Philosophy B201 and English B203
- Category C: Psychology C101
- Sociology C125, C151, C215, or Anthropology C152
- Category D: 2 natural science courses to total 8 hours in natural sciences (one course must be approved laboratory science)
- Category F: Mathematics F120
- Category G: Religion G211

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

**Major and related courses**

**NOTE:** Current requirements for licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1993. However, it emphasized that all students entering in the fall of 1990 and after must enter under new programs designed for licensure/endorsement areas approved by the Board. The new social sciences program is still in a period of transition. Course titles, numbers, and credit hours maybe adjusted or changed as curriculum decisions are made.

History B101, B102, B203, B204,343

**Typical course of study in secondary social sciences (B.S.): economics concentration**

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Geography 101, 103
Economics C101, 102
Political Science C101
Theatre and Speech 107, or 109
Computer Science 102
Sociology 250

31 hour from the School of Education including Curriculum and Instruction 201, 204, 321, 431, 433, 438, Special Education 333

All social sciences major are required to complete at least one of the following concentration areas:

**Economics concentration:**
- Political Science 102
- Anthropology G208
- Economics 324, 325
6 hours of economics electives at the 300, or 400 level

**Geography concentration:**
- Geology D11
- Environmental Studies D150, 151
- Geography 104
- one course from each of the following groups:
  - Geography 206, or 250
  - Geography 403, 405, 465, or 466
  - Geography 407, 409, or 415
- Electives to total 20 hours in geography

**History concentration:**
- Anthropology G208
- History 301
- one course from each of the following areas:
  - United States (History 331, 332, 335, 336, 337, or 338)
  - European (History 311, 312, 313, 314, 317, 318, or 319)
  - Non-western (History 364, 365, 368, 370, 370, 371, or 372)
  - Disciplinary (History 411, 412, 415, 416, 419, 463, or 470)

**Political Science concentration:**
- Anthropology G208
- Political Science 102, 316
- one course from each of the following areas:
  - American institution (Political Science 233, 234, 333, or 335)
  - International relations (Political Science 242, 244, 343, or 345)
  - Public Law (Political Science 321, 322, 323)

For graduation: 2.0 average in social sciences and 2.0 average in School of Education
For certification: 2.5 average overall, 2.5 average in social sciences, and 2.5 average in School of Education with no grade below C

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours
Pending approval of UT Board of Trustees and Tennessee Higher Education Commission.
### Typical course of study in secondary social sciences (B.S.) - geography concentration

**First Semester**

**FRESHMAN**

- **English A121**: 3
- **Mathematics Fl (20)**: 3
- **Physical Education 021**: 3
- **Economics C101**: 3
- **University Studies 101**: 3
- **Fine Arts Elective**: 3
- **Total**: 16

**SOPHOMORE**

- **History B101**: 3
- **ED Curr. & Instr. 201**: 3
- **Environmental Studies 151**: 4
- **Philosophy B201**: 3
- **Psychology C101**: 3
- **Total**: 16

**JUNIOR**

- **Apply for student teaching**
- **Religion G211**: 3
- **Geology D111**: 4
- **History B203**: 3
- **Computer Science 102**: 3
- **Geography 103**: 3
- **Total**: 16

**SENIOR**

- **Human Ecology 328**: 3
- **Human Ecology 340**: 3
- **Human Ecology 445**: 3
- **Total**: 18

**Second Semester**

**FRESHMAN**

- **History B102**: 3
- **Theatre & Speech 107, or 109**: 3
- **ED Curr. & Instr. 204**: 3
- **Sociology 250**: 3
- **Political Science C101**: 3
- **Sociology C125, C215, or Anthropology C152**: 3
- **Total**: 18

**SOPHOMORE**

- **Apply for admission to TEP**
- **History B102**: 3
- **Theatre 6k Speech 107, or 109**: 3
- **ED Curr. & Instr. 204**: 3
- **Sociology 250**: 3
- **Political Science C101**: 3
- **Sociology C125, C152, or Anthropology C152**: 3
- **Total**: 18

**JUNIOR**

- **Apply for student teaching**
- **History B204**: 3
- **Geography 104**: 3
- **Geography 403, 405, 465, or 466**: 3
- **Geography Elective**: 3
- **ED Curr. & Instr. 321**: 3
- **ED Special Education 333**: 3
- **Total**: 18

**SENIOR**

- **Human Ecology 328**: 3
- **Human Ecology 340**: 3
- **Human Ecology 445**: 3
- **Total**: 18

**TOTAL HOURS 128**
## Typical course of study in secondary social sciences (B.S.): political science concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>FRESHMAN</td>
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<tr>
<td>English A121</td>
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<td>Mathematics F120</td>
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<td>University Studies 101</td>
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<tr>
<td>History B101</td>
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<td>ED Curr. &amp; Instr. 201</td>
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<tr>
<td>Science Elective</td>
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<td>Philosophy B201</td>
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<td>Psychology C101</td>
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<td>SENIOR</td>
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<td>Public Law</td>
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<td>Geography 103</td>
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<td>History 343</td>
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<tr>
<td>TOTAL HOURS 128</td>
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</table>

## Typical course of study in secondary education (B.S.)'s vocational home economics concentration

### First Semester
- **FRESHMAN**
  - Human Ecology 120: 3
  - General Education Category A: 3
  - General Education Category B: 3
  - Humanities: 3
  - General Education Category C: 3
  - General Education Category D: 3
  - Chemistry D121: 4
  - Physical Education 021: 1
  - Total: 17

### Second Semester
- **FRESHMAN**
  - Human Ecology 104: 3
  - Human Ecology 206: 3
  - Human Ecology 207: 3
  - Biology D121: 4
  - Economics C101: 3
  - Biology 122: 4
  - Human Ecology 200: 1
  - Total: 17

### TOTAL HOURS 128

## Secondary Education (B.S.): Vocational Home Economics Concentration

### General Education (see pages 22-23 for list of approved courses)
- Category A: 2 approved courses in written communication in the English language (6 hours)
- Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each), plus courses to total 12 hours humanities/fine arts in three fields other than history
- Category C: 2 approved behavioral or social science courses other than education (6 hours); Economics C101, 3 hours sociology plus one course to total 9 hours behavioral or social sciences; for certification purposes, 3 of the hours may be in history
- Category D: 1 approved physical or natural science course with laboratory (4 hours; approved related courses below will apply)
- Category F: Mathematics F120
- Category G: 1 approved perspectives course other than human ecology (3 hours)

### Health and Physical Education 021 plus one additional semester physical education activity

### Major and related courses

**NOTE:** Current requirements for Ucensure endorsement areas approved by the Tennessee Board of Education. The Vocational Home economics concentration is in the process of being phased out.

**45 hours in human ecology including 104,105,120,206, 207,211,300,301,302, 304, 306, 328, 340, 445, and human ecology 200, 460, 463**

**28 hours from the School of Education including Curriculum and Instruction 201, 204, 205, 321, 433, 437, 438; Special Education 333**

**For graduation: 2.0 average in human ecology and 2.0 average in School of Education courses**

**For certification: 2.5 average overall, 2.5 average in human ecology, and 2.5 average in School of Education courses with no grade less than C in the latter**

**Minimum of 30 hours of 300 and 400 level courses**

**Electives to complete 128 hours**

### Typical course of study in secondary education (B.S.)'s vocational home economics concentration

<table>
<thead>
<tr>
<th>First Semester</th>
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<td>Sociology 250</td>
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<td>Political Science C101</td>
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<td>Sociology C125, C215, or Anthropology C152</td>
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| JUNIOR   |                          |

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<tbody>
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<td>SENIOR</td>
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<tr>
<td>TOTAL HOURS 128</td>
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</table>

## Special Education (B.S.)

### General Education (see pages 22-23 for list of approved courses)
- Category A: 2 approved courses in written communication in the English language (6 hours), plus English 220 to total 9 hours
- Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each), plus Art 222 to total 12 hours humanities/fine arts in three fields other than history
- Category C: 2 approved behavioral or social science courses (6 hours) plus one


For certification: 2.5 average overall, 2.5 average in teaching field, and 2.5 average requirements for licensure endorsement areas for which the Board has approved new standards.

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

NOTE: Current requirements for license endorsement areas for which the Board has adopted new standards remain in effect until December 1994. However, it is emphasized that all students entering in the fall of 1991 and after must enter under new programs designed for license endorsement areas approved by the Tennessee Board of Education. The special education program is still undergoing curriculum revision. Question about the new program should be directed to the School of Education.

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical course of study in special education (B.S.)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tr>
<td><strong>Freshman</strong></td>
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<tr>
<td>Category A (English 121)</td>
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<td>Category C (Psychology 101)</td>
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<tr>
<td><strong>Sophomore</strong></td>
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<tr>
<td>ED Special Education 100</td>
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<tr>
<td>ED Curr. &amp; Instr. 203</td>
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<tr>
<td>English 228</td>
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<td>Category B (Art 111)</td>
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<td>Category C</td>
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<td><strong>Junior</strong></td>
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<td>ED Special Education 330</td>
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<tr>
<td>ED Curr. &amp; Instr. 320</td>
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<td>ED Special Education 350 or 486</td>
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<td>Category B</td>
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<td>Elective (ED Psychology 401)</td>
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<tr>
<td>ED Special Education 440</td>
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| **Senior**     |                     |
| HPER 436       | 3 | Professional Semester | 3 |
| ED Curr. & Instr. 403 or 404 | 3 | ED Special Education 461 | 3 |
| ED Curr. & Instr. 423 | 3 | ED Special Education 465 | 3 |
| ED Special Education 453 | 3 | ED Special Education 469 | 6 |
| Elective       | 3 |                     | 3 |
| **Total**      | 18 | **Total** | 12 |

**CURRICULUM AND INSTRUCTION COURSES**

NOTE: Program and courses are in a period of transition. Titles, numbers, content and credit hours may be revised to meet new licensure standards.

100 Education, Self, and Society (3)

Selected material from cultural, psychological, and social foundations of education related to contemporary issues and to the student's own educational experiences, goals, aspirations. On demand.

105 Strategies for College Reading (3 hours institutional credit)

The course provides insights into the reading process, language expansion, content area language strategies, and improved study skills. Students will engage in a variety of activities involving reading, writing, speaking, and listening to enhance their ability to comprehend a variety of types of printed materials. Credit not applicable toward any degree.

199r Special Projects (1-4)

Individual projects and field components. On demand. Maximum credit 4 hours. Prerequisite: transfer student and approval of School of Education dean.

200 Investigations of the School in Society (1)

Observations and simulations involving the school as a social institution and the role of the teacher in preparation for instruction. At least 20 hours of teacher aide experience at school site is required. Every semester.

201 Education in the United States (3)

Organization and historical development of education in the United States, philosophical concepts and their influences on contemporary education; current issues. Every semester.

202 Human Growth and Development: Pre-School Primary (3)

Child development focusing on study of child, prenatal through six years, with limited attention to elementary age child. Field component required. On demand. Credit not allowed in Curriculum and Instruction 202 and Psychology 221.

203 Human Growth and Development: Child (3)

Child development factors influencing growth; characteristics, influence of concepts on the educational process. Field component required. Every semester. Credit not allowed in Curriculum and Instruction 203 and Psychology 221.

204 Human Growth and Development: Adolescent (3)

Adolescent development factors influencing growth; characteristics, influence of concepts on the educational process. Field component required. Every semester. Credit not allowed in both Curriculum and Instruction 204 and Psychology 222.

205 Investigations of the Adolescent in the Classroom (1)

Laboratory course designed with structural observation and experience in the secondary school classroom. Case studies and tutoring of adolescents and analysis of classroom practice will be completed by the student. A minimum of 20 hours of field work under the supervision of a teacher in a traditional secondary school classroom is required. Fall and spring semesters only. Prerequisite: 200.

206 Investigations of the Child in the Classroom (1)

Laboratory course designed to provide Early Childhood/Elementary Education majors with case studies and tutoring experiences that will be helpful in subsequent course work in their teacher education programs. Requires 20 hours of tutoring in an elementary (K-6) classroom under the supervision of a teacher. Fall and spring semesters. Prerequisite: 200.

207 Educational Psychology (3)

Theories of learning and instruction applied to the classroom; classroom as psychological environment; cognitive processes and motivation; use of tests and measures; approach to guidance. Field component required. On demand.

215r Workshop and Seminar (2-4)

Current topics in education. Special programs and in-service courses. On demand. Prerequisite: approval of department head.

310 Elementary School Curriculum (3)

The curriculum for grades one through six; the impact of technological and social change on curriculum planning and school organization. On demand.
320 The Teaching of Reading in the Elementary School (3)
Survey of methods, strategies, diagnostic-prescriptive procedures, and materials for teaching reading. Field component required. Every semester.

321 The Teaching of Reading in the Secondary School (3)
Integrating reading skills and teaching strategies with the teaching of content area subjects. Every semester. Required of all secondary education majors.

401 Teaching Social Studies in Elementary and Middle School (3)
Planning, teaching, and evaluation of social studies in the classroom. In-depth instruction in lesson planning strategies. Every semester. Prerequisite: admission to teacher education program. May not be used for graduate credit.

402 Teaching Science in Elementary and Middle School (3)
The application of the structure of science and the concepts, phenomena, and processes of science in the context of the elementary school curricula. Includes instructional use of education media including the microcomputer. Every semester. Prerequisite: admission to teacher education program. May not be used for graduate credit.

403 Teaching Language Arts in the Elementary and Middle School (3)
Designed to help develop an understanding of the basic concepts of language. Special consideration given to how language arts (speaking, listening, writing) are learned, diagnosed, taught, and evaluated. The interrelationships of these skills stressed to better utilize these kinds of activities and materials in teaching children to think clearly, creatively, and to communicate effectively. Every semester. Prerequisite: admission to teacher education program. May not be used for graduate credit.

404 Teaching Mathematics in the Elementary and Middle School (3)
Designed to provide students with effective methods and materials for the teaching of mathematics in grades K-8. Special emphasis will be placed on the use of the microcomputer and calculator for teaching mathematics and in diagnostic and remedial procedures. Every semester. Prerequisite: admission to teacher education program. May not be used for graduate credit.

405 Observation and Student Teaching in Elementary Schools (9)
Supervised teaching in two school environments. Placements will insure experience at two different grade levels, as well as inner city and suburban or rural schools. Every semester. Prerequisites: 320, 401, 402, 403, 404 and admission to teacher education program; notification of intent to engage in student teaching six months prior to registration in 405. May not be used for graduate credit.

407 Classroom Management in Elementary Schools (2)
Techniques and strategies for creating a classroom environment which promotes learning. Behavioral management is emphasized through the development and application of approaches to individual behavioral analysis and peer control. Every semester. Corequisite: 405 or 419.

410 Materials and Methods in Early Childhood Education (3)
Study of the objectives, materials, methods, pupil activities, and evaluation of preschool education. Field component required. Spring semester. Prerequisite: admission to teacher education program. May not be used for graduate credit.

419 Observation and Student Teaching in Kindergarten and Elementary Grades (9)
Field placement in both the kindergarten and elementary grades in the same semester. Schedules must permit full time involvement three days per week and half-day participation two days each week with at least one-third of the time devoted to responsible participation and teaching. Every semester. Prerequisites: 320, 401, 402, 403, 404, 410; admission to teacher education program; notification of intent to student teach six months prior to registration in 419. May not be used for graduate credit.

422 Teaching Reading in the Intermediate Grades and the Middle School (3)
Teaching-learning strategies to deal with content and process of reading; emphasis on vocabulary development, comprehension strategies, basic study skills, reading in content areas. Fall semester. Prerequisite: admission to teacher education program.

423 Diagnostic and Prescriptive Teaching of Reading (3)
Field-based, classroom diagnostic-prescriptive teaching; in-depth study of selected assessment instruments, instructional strategies, materials, and management procedures. Every semester. Prerequisites: 320 or equivalent, or permission of instructor; admission to teacher education program. May not be used for graduate credit.

424 The Nature and Analysis of the Reading Process (3)
A review of current theories, literature, and discussion of issues affecting the reading levels of students in today's classrooms. Introduction of the psychological aspects necessary to read and comprehend printed material. Students will examine these processes and the relationships of these to the reading performance of students in secondary education. Prerequisite: 321 or permission of the instructor.

431 Teaching Strategies and Materials in the Disciplines (2)
Curricular and media developments appropriate for the respective discipline. Must be taken prior to student teaching. Fall semester. Prerequisites: 204, 205, 200, 201; application approved to the teacher education program. Corequisite: 433. May not be used for graduate credit.

432 Teaching Strategies and Evaluation in Secondary School Music (3)
Theories and practices in secondary school music; attention to the exceptional student; curricular developments in music education; evaluation procedures appropriate to music education. Fall semester. Prerequisite: admission to teacher education program. May not be used for graduate credit.

433 Designing Instruction and Evaluation in the Secondary Classroom (4)
Formulating and evaluating appropriate affective and cognitive objectives. Lesson planning and a wide range of teaching strategies will be examined. Each student will be required to demonstrate proficiency in a variety of component teaching skills via the microteaching laboratory and a self-developed teaching unit. Every semester. Prerequisite: admission to teacher education program. Corequisite: 431.

436r Topics in Secondary Curriculum (1-2)
A seminar involving both student teachers and their cooperating teachers. Topics will deal with contemporary curricular problems of participants. Spring semester. Prerequisite: undergraduate students must be admitted to teacher education program. Corequisite: 438. Not required for HPER majors.

437 Classroom Management in Secondary Schools (2)
Techniques and strategies for creating a classroom environment which promotes learning. Behavioral management is emphasized through the development and applications of approaches to individual behavioral analysis and peer control. Spring semester. Prerequisite: admission to teacher education program. Corequisite: 438.

438 Observation and Student Teaching in Secondary School (9)
Supervised teaching in two school environments. Placement will insure experience in inner city and suburban or rural schools and junior and senior high schools where possible. Spring semester. Prerequisites: 204, 205, 201, 200, 321, 431, 433; Special Education 333; admission to teacher education program. Corequisites: 436r, 437. May not be used for graduate credit.

439 Observation and Student Teaching in School Music (9)
Placement will be made in grades 1-6 for one-half the semester and 7-12 for one-half the semester. Spring semester. Prerequisites: 432, Music 321, admission to teacher education program. Corequisites: 436r, 437.

480 Teaching Media (3)
The selection, use, and evaluation of technological innovations in audiovisual media; emphasis on laboratory experiences in communication media. On demand.

481 Educational Tests and Measurements (3)
Measurement of human abilities and instructional outcomes; survey of elementary statistical concepts; construction of valid and reliable tests and evaluative instruments. On demand.

482 Teaching Social Science Through Science Fiction (3)
Explores uses of science fiction in teaching social issues and the future. Emphasis on creativity and integration with traditional content. On demand.

483 Teaching Internship (9)
Undergraduate credit only. For the temporarily certified employed teacher. Provides close supervision in planning, implementation, and evaluation. Tailored to fit specific school setting. On demand. Prerequisite: one year full-time teaching in certifiable area; approval of School of Education dean.

490r Workshop and Seminar (2-4)
Special problems and discussion of current topics in education. On demand. Prerequisite: senior or graduate standing.
EDUCATIONAL PSYCHOLOGY AND SPECIAL EDUCATION COURSES

Special Education Courses

100 Special Education Program Observation and Seminar (2)
This course provides an experiential opportunity to investigate and analyze the various placement options in special education. A structured seminar is required to discuss the planned observations. A minimum of 20 hours of observation is required. Fall semester.

199r Special Projects (1-4)
Individual projects and field components; maximum credit 4 hours. Every semester. Prerequisite: transfer student and approval of School of Education dean.

215r Workshop and Seminar (2-4)
Current topics in education. Special programs and in-service courses. On demand.

250 Introduction to Special Education (3)
A survey of special education with emphasis placed upon consideration of the history of special education; federal involvement and leaderships; and the global characteristics of the target population. Fall semester. Special education majors only.

255 Observation and Seminar Concerning Handicapping Conditions (2)
This course provides an experiential approach to understanding specific handicapping conditions, and will consist of 20 hours of observation and interaction with specific handicapped children. This course requires attendance in a structured seminar. Spring semester.

320 Education Exceptionalities (3)
A study of the psycho-social-educational treatment systems used with educational exceptionalities. Spring semester. Prerequisite: 250.

330 Academic and Behavioral Evaluation (3)
A study of the basic principles and techniques of educational evaluation in special education used by the classroom/resource teacher. Fall semester. Prerequisite: 250 or 332.

332 Exceptional Students in the Elementary School (3)
A survey of exceptional children and the philosophy of mainstreaming, adaptation techniques, curriculum, materials, resources, referrals, evaluation, and the teacher/resource-teacher relationship. Every semester. Prerequisite: admission to teacher education program.

333 Exceptional Student in the Regular Secondary Classroom (3)
An overview of handicapping conditions and educational and therapeutic amelioration for secondary school students. An emphasis upon the techniques by and requirements of the secondary school teacher in meeting the legal, educational, and moral obligations to the exceptional student. Every semester.

350 Characteristics and Techniques for the Moderately Handicapped Student (3)
The in-depth study of the characteristics and needs of moderately handicapped students includes the various academic and behavioral interventions utilized in resource settings and other placements. Fall semester.

415 The Adolescent Exceptional Student (3)
An examination of the unique needs and particular issues which are specific to adolescent exceptional students. The course emphasizes approaches and methodology concerning corrective and compensatory instruction. Spring semester.

440 Classroom Management in Special Education (3)
An examination of the adaptation of classroom management techniques in both classroom as well as individual tutorial situations. Fall semester. Prerequisites: 250 and admission to teacher education program.

453 Speech Disabilities and Language Development (3)
Recognition and understanding of language development and speech disabilities. Basic diagnosis, remediation, and speech improvement activities incorporated. Fall semester. Prerequisite: admission to teacher education program.

460, 461 Clinical Teaching (3,3)
Examination and implementation of the principles of clinical teaching and the individualizing of instruction. Includes the use of formal and informal assessment results in planning educational strategy. 460 fall/461 spring semester. 460 prerequisites: 320, 330; 461 must be preceded by 460. 461 corequisite: 465; admission to teacher education program.

465 Special Education Practicum (3)
This course encompasses a practicum experience for special education students with opportunity for supervised participation in public school, private school, or institutional special education programs. The student will register for this course concurrently with 461. Spring semester. Prerequisite: 460.

469 Observation and Student Teaching in Special Education (6)
Applied competencies that have been developed through preceding experiences to the actual processes of teaching and guiding children and youth. Student schedule must permit contact with the same classroom situation full time for a minimum of five days per week for at least one half of the semester. Spring semester. Prerequisite: 465.

483 Teaching Internship (9)
Undergraduate credit only. For the temporarily certified employed teacher. Provides close supervision in planning, implementation, and evaluation. Tailored to fit specific school setting. On demand. Prerequisite: 1 year full-time teaching in certifiable area; approval of School of Education dean.

486 Gifted Education in the Resource Room (3)
This course examines the social, emotional, and intellectual characteristics of the gifted/talented child, and focuses upon the appropriate teaching/learning requirements in resource and regular classrooms. Special attention will be given to program models, curriculum development, and teaching strategies. Fall semester.

490r Workshop and Seminar (2-4)
Special problems and discussion of current topics in education. On demand. Prerequisite: senior or graduate standing.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
On demand. Prerequisite: approval of department head.

498r Individual Studies (1-4)
On demand. Prerequisite: approval of department head.

499r Group Studies (1-4)
On demand. Prerequisite: approval of department head.

Education — 143
Health, Physical Education & Recreation (HPER)

Professor Norred, Head

Programs and activities within the scope of the Health, Physical Education, and Recreation Department are administered through the School of Education.

A major thrust of HPER is the provision of two distinct academic career program tracks:

1. Secondary Education: Health and Physical Education concentration
2. Secondary Education: Recreation Specialist concentration (nonteaching program)

In addition, HPER offers a diversified service program of physical recreation activities primarily for the undergraduate student. Activity courses from this program may be used to meet the University requirement of 2 semester hours.

Furthermore, HPER provides a well-rounded seasonal intramural activities program and general recreation for the University community.

Secondary Education: Health and Physical Education Concentration

This career program is for any student who desires certification in both health instruction (K-12) and secondary physical education (7-12). The curriculum focuses on professional career development in both health and physical education, yet permits a student to gain cultural breadth through completing general educational components which comprise at least one-third of the total number of hours in the program.

Since graduates of this specialization are often employed in the capacity of teacher-coach, a partial segment of the curriculum is devoted to content and laboratory courses designed to educate the student in becoming an effective coach for athletic and intramural sports.

Graduate concentrations in either health education or physical education are possible while earning the Master of Education degree in secondary education. Refer to the Graduate Bulletin for information concerning this program.

Admission to Teacher Education Program (TEP) for Health and Physical Education

In addition to meeting criteria for admittance to TEP, a student desiring certification in health and physical education will be expected to meet these criteria:

1. Have a minimum grade point average of 2.5 in professional health, physical education and recreation course work. Successfully complete six hours from professional activity courses and nine hours from theory courses within the Health, Physical Education, and Recreation Department.

2. Successfully complete an interview with his or her TEP department committee.

Any student enrolled within the teacher certification curriculum is expected to maintain and demonstrate standards of ethics reasonably attributed to an educator who holds professional teacher certification.

Further, any student who plans to teach outside of Tennessee is strongly urged to check certification requirements with the appropriate state department of education before the end of the sophomore year in order to plan his or her program appropriately.

Secondary Education (B.S.): Health and Physical Education Concentration

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each), plus courses to total 12 hours humanities/fine arts in three fields other than history
Category C: 2 approved behavioral or social science courses including Sociology C215 (6 hours), plus one course to total 9 hours behavioral or social sciences; for certification purposes, 3 of the hours may be in history
Category D: 2 approved natural science courses including Biology D121, 122 to total 8 hours in natural sciences
Category F: Mathematics F120
Category G: 1 approved perspectives course (3 hours)

1 additional course outside teaching field from communications, humanities, mathematics, natural or behavioral sciences (2 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

NOTE: Current requirements for licensure/endorsement areas for which the Board has adopted new standards remain in effect until December 1994. However, it emphasized that all students entering in the fall of 1991 and after must enter under new programs designed for licensure/endorsement areas approved by the Tennessee Board of Education. The Physical Education program is still undergoing curriculum revision. Question about the new program should be directed to the School of Education.

21 hours in Health: Health Education 100, 154, 302, 303, 317, 456, plus approved electives such as Health Education 320, 450, 451, 452, 455; Biology 191; 208 and 209; Human Ecology 105 (completion of these 21 semester hours will grant endorsement in health instruction, kindergarten through grade 12)

34 hours in physical education including Physical Education 201, 318, 332, 340, 401, 436 and a minimum of 12 hours in professional activities as follows:

- 4 hours from Physical Education 203, 204, 205
- 2 hours from Physical Education 206, 207
- 6 hours from Physical Education 208, 209, 210

28 hours education including Curriculum and Instruction 200, 201, 204, 205, 321, 431, 433, 437, 438

For graduation: 2.4 average in health and physical education and 2.0 average in School of Education courses

For certification: 2.5 average overall, 2.5 average in teaching fields, and 2.5 average in education courses with no grade less than C in the latter Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours
Typical course of study in secondary education (B.S.)'s health and physical education concentration

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
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<tbody>
<tr>
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<tr>
<td>General Education Category A</td>
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<tr>
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<td>HPER Health Education 100</td>
<td>HPER Health Education 154</td>
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<td>HPER Physical Education 201</td>
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<tr>
<td>Behavioral Science</td>
<td>HPER Professional Activities</td>
</tr>
<tr>
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<tr>
<td>HPER Physical Education 021</td>
<td>Total</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
</tr>
</tbody>
</table>

**SOPHOMORE**
Mathematics F120 | 3 | Perspectives Category G | 3 |
Humanities, Fine Arts | 3 | Fine Arts Category B | 3 |
Category B | 3 | ED Curr. & Instr. 204 | 3 |
Behavioral Science | 3 | ED Curr. & Instr. 205 | 1 |
(Sociology 215) Category C | 3 | HPER Health Education 303 | 3 |
HPER Health Education 302 | Behavioral Science | 3 |
HPER Professional Activities | 2 | Total | 16 |
ED Curr. & Instr. 201 | Total | 16 |
ED Curr. & Instr. 200 | 1 | Total | 16 |
**Total** | 18 | **Total** | 16 |

**JUNIOR**
HPER Health Education 317 | 3 | HPER Physical Education 318 | 3 |
Humanities Category B | 3 | HPER Physical Education 340 | 3 |
HPER Physical Education 332 | HPER Professional Activities | 4 |
HPER Professional Activities | 4 | HPER Physical Education | 4 |
ED Curr. & Instr. 321 | Elective | 4 |
Total | 16 | Humanities, Fine Arts | 3 |
**Total** | 17 |

**SENIOR**
HPER Physical Education 401 | 3 | ED Curr. & Instr. 437 | 2 |
HPER Physical Education 436 | 3 | ED Curr. & Instr. 438 | 9 |
HPER Health Education | Total | 14 |
Elective | Total | 14 |
ED Curr. & Instr. 433 | 4 |
ED Curr. & Instr. 431 | 2 |
**TOTAL HOURS** | 128 |

Secondary Education: Recreation Specialist Concentration

The recreation specialist program is a uniquely structured track for the student with career ambitions for being employed by or serving voluntarily with an agency, public or private, whose functions include the provision of recreational type services and activities. While there are a few courses common to both the teacher certification and recreation specialist tracks, the focus of the major courses in the recreation component of this program is directed toward the practical applications of theories and strategies learned in professional recreation courses.

To reinforce this intent a student specializing in recreation is expected to engage in several different types of field assignments and experiences.

Completion of this program will not satisfy teacher certification requirements for health and physical education endorsement.

Internship Admittance
The internship practicums in recreation are usually scheduled during the senior year. Normally, a student may not gain official approval for enrollment in either internship HPER 479 or 480 prior to completing at least 12 semester hours of course work within HPER at UTC. Approval of program leader and HPER department head required.

Secondary Education (B.S.): Recreation Specialist Concentration

**General Education** (see pages 22-23 for list of approved courses)

**Category A:** 2 approved courses in written communication in the English language (6 hours)

**Category B:** 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each, total 9 hours)

**Category C:** 2 approved behavioral or social science courses including Sociology C151 (6 hours)

**Category D:** 1 approved physical or natural science course with laboratory (4 hours): Biology D121

**Category F:** 1 approved mathematics course (3 hours)

**Category G:** 1 approved perspectives course (3 hours)

The Freshman Seminar
Health and Physical Education 021 plus one additional semester physical education activity

**Major and related courses**
56 hours of health, physical education, recreation courses
31 hours recreation component to include: HPER 200, 202, 220, 304, 305, 325, 470, 479, 480
9 hours health component to include: HPER 100, 154, 317
16 hours physical education component to include: HPER 405, 436; 10 hours of professional activity courses
8 hours secondary education courses to include:
Curriculum and Instruction 200, 201, 204, 205
6 hours related courses selected from:
Art 323,324; Computer Science 110; Political Science 233; Sociology 305; Theatre and Speech 109
2.0 average in recreation component of major courses

Minimum of 30 hours of 300 and 400 level courses
Electives to be selected by student and assigned academic adviser to complete 128 hours

Typical course of study in secondary education (B.S.)'s recreation specialist concentration

<table>
<thead>
<tr>
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<td>Biology 121 Category D</td>
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<td>HPER 100</td>
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<td>HPER 021</td>
<td>HPER PE Activity</td>
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**SOPHOMORE**
ED Curr. & Instr. 200 | 1 | ED Curr. & Instr. 205 | 1 |
General Education Category C | 3 | General Education Category B | 3 |
ED Curr. & Instr. 201 | 3 | ED Curr. 6k Instr. 204 | 3 |
HPER 200 | HPER 220 | 2 |
HPER 202 | HPER Professional Activity | 2 |
Sociology C151 | HPER 304 | 3 |
HPER Professional Activity | 2 |
**Total** | 15 | **Total** | 16 |
## JUNIOR

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<td>HPER 346</td>
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**Related courses**
- 2 HPER Professional Activity
- 3 Elective*

**Elective**
- 3 Elective*

**Total**
- 17 Total

**Elective**
- 3 Elective*

**Total**
- 16 Total

## SENIOR

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<tr>
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</table>

**Related courses**
- 2 HPER Professional Activity
- 3 Elective*

**Elective**
- 3 Elective*

**Total**
- 15 Total

**Elective**
- 3 Elective*

**Total**
- 16 Total

**TOTAL HOURS 128**

*Confer with assigned academic adviser

Note: required for graduation 2.0 overall; 2.0 average in recreation component of major courses.

### HPER MINORS:

**Athletics Coaching**

21-22 hours including: 3-4 hours from Biology 191 or HPER 201 or 317; HPER 209, 340, 405, 407, 479; two courses from 203, 204, 205 or from 206, 207, 208 or one from 203, 204, 205 and one from 206, 207, 208.

Minimum 2.0 average in the minor

**Recreation**

Total of 24 hours including: 6 hours of health to include HPER 100, 154; 6 hours in three courses from HPER 202, 220, 224, 228, 235, 237; 12 hours in four courses from HPER 200, 304, 305, 325, 470.

Minimum 2.0 average in the minor

### HPER: HEALTH EDUCATION COURSES

**100 Personal Health (3)**
Significant data and facts helpful in making intelligent decisions about personal health; crucial issues of personal, family, and social living. Every semester.

**154 Safety and First Aid (3)**
Nature and causes of accidents; safety measures for prevention and emergency treatment of common accidents; Red Cross certification may be given in advanced first aid and CPR. Every semester.

**199r Special Projects (1-4)**
Individual or group projects. Every semester. Maximum credit 4 hours. Prerequisite: approval of HPER department head.

**302 Health Care of Children (3)**
In-depth consideration of health problems confronting the classroom teacher. Every semester. Prerequisite: HPER 100 or teaching candidate or approval of instructor.

**303 School, Community, and Environmental Health (3)**
Interrelationship studies involving home, school, public health, non-official organizations for improved public health; elements of structuring health education curricula. Spring semester.

**317 Anatomy and Physiology of Exercise (3)**
Intensive study of various physiologic processes related to exercise. Fall semester. Prerequisite: Biology 121 or equivalent.

**320 Environmental Health (3)**
Major ecological problems relative to individuals, schools, and communities with emphasis upon the teaching-learning process. On demand.

**450 Safety and Consumer Health Education (3)**
Investigation into epidemiologic aspects of accidents; procedures for developing preventive programs. Intelligent selection of health products, health services, health insurance plans, and health careers. Fall semester alternate years. Prerequisites: approval of instructor, senior or graduate standing.

**451 Curricular Designs: Human Sexuality, Drug Abuse (3)**
Extended study of problems related to human sexuality and drug abuse education; development of teaching units for schools. Summer. Prerequisites: approval of instructor, senior or graduate standing.

**452 Problems in Health: Aging, Death Education, Human Diseases (3)**
Analysis of concepts and attitudes toward aging, death, bereavement, prevention and control of communicable and degenerative diseases. Spring semester. Prerequisites: equivalent of HPER 100, 302, 303; senior or graduate standing or approval of instructor.

**455 Methods and Strategies in School Health Education (3)**
Investigation of current curricula and teaching strategies employed in health education. Fall semester alternate years. Prerequisites: approval of instructor, senior or graduate standing.

**456 Research and Current Topics in Health Education (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 HPER senior or graduate standing.

**495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)**
On demand. See "Departmental Honors," page 27.

**497r Research (1-4)**
Every semester. Prerequisite: approval of HPER department head.

**498r Individual Studies (1-4)**
Every semester. Prerequisite: approval of HPER department head.

**499r Group Studies (1-4)**
Every semester. Prerequisite: approval of HPER department head.

### HPER: PHYSICAL EDUCATION COURSES

**199r Special Projects (1-4)**
Individual or group projects. Every semester. Maximum credit 4 hours. Prerequisite: approval of HPER department head.

**201 Introduction to Physical Education (3)**
Role of physical activity in American education based upon the historical, social, economic, and political forces affecting physical education in schools; philosophy and principles of profession. Spring semester.

**224 Movement Education (2)**
Skill development and teaching procedures in movement education, fundamental and contemporary movement patterns. Every semester. Prerequisite: HPER major or approval of instructor.

**318 Kinesiology (3)**
Study of human motion; analysis of human motion as affected by gross anatomy and principles of motor learning. Spring semester. Prerequisites: equivalent of Biology 121 and HPER 317.

**330 Physical Education in the Elementary School (3)**
Practical aspects of planning, organizing, administering, and evaluating programs and playgrounds; theories of play; principles of bodily mechanics; activities corresponding to level of growth and development; materials and methods of teaching. Required for elementary education majors. Every semester.

**332 Organization and Administration of Physical Education (3)**
Critical elements in planning, organizing, directing, and evaluating school problems, curriculum structuring, teacher-coach relationships involving students, faculty, administration and community; field assignments. Fall semester. Prerequisite: 201 or approval of instructor.

**340 Care and Prevention of Athletic Injuries (3)**
Analysis of common athletic injuries; emphasis on practical aspects within theoretical framework; laboratory experiences. Spring semester. Prerequisite: 317 or 318; or approval of instructor.

**400 Current Topics and Problems in Physical Education (3)**
Exploration of current topics and problems in physical education significant to teachers, coaches, and administrators in schools and agencies providing services in physical education or related fields. Summer. Prerequisites: senior level and approval of instructor; or graduate standing.

401 Tests and Measurements in Health and Physical Education (3)
Assessment of motor traits, organic development, neuromuscular development, sports knowledge, and attitudes related to health and physical education; basic statistics essential to measurement theory. Fall semester. Prerequisite: equivalent of HPER 201, 332; Mathematics 120; senior level and approval of instructor; or graduate standing.

402 Philosophical Foundations of Physical Education (3)
Identification and implications of several philosophical approaches to play, games, dance, sport, physical education, recreation, and athletics. On demand. Prerequisite: senior level or graduate standing.

404 Dynamics of Motor Learning (3)
Psychological aspects of learning, experimental growth, and development as affected by human movement patterns, perceptual mechanisms, and cognitive processes. On demand. Prerequisite: 317 or senior level; or graduate standing.

405 Administration of Interscholastic Athletics and Intramurals (3)
Conceptual development of sound programs; common problems, responsibilities, and personnel relationships involving school and community relative to athletics and intramurals. Spring semester. Prerequisite: equivalent of 304 or 332; approval of instructor; or graduate standing.

407 Psychologic and Sociologic Concepts Applied to Physical Education and Sport (3)
Emphasis upon physical education and sport as a socio-cultural psycho-cultural force; psychological-sociologic concepts applied to physical education, recreation, sports. Fall semester. Prerequisite: equivalent of 317 or 318; approval of instructor; or graduate standing.

408 Seminar, Current Advances in Bio-Kinetics (3)
Current advances in kinesiologic and physiologic principles of physical education, athletic coaching, and sport. On demand. Prerequisite: equivalent of 317 or 318; approval of instructor; or graduate standing.

436 Physical Education for the Exceptional Student (3)
Lecture, demonstration, and practical experiences in the study of exercise and sport phases for the exceptional student. Every semester. Prerequisite: equivalent of 302 and junior level; or graduate standing.

490r Workshop and Seminar (2-4)
Special problems; in-service education for specific groups; research in professional literature and evaluation measures to topics studied. On demand.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
Every semester. Prerequisite: approval of HPER department head.

498r Individual Studies (1-4)
Every semester. Prerequisite: approval of HPER department head.

499r Group Studies (1-4)
Every semester. Prerequisite: approval of HPER department head.

HPER: PROFESSIONAL ACTIVITIES COURSES

The professional activities component consists of those courses which by nature are physical education/coaching techniques. Courses of this type are designed primarily for that student planning to become a teacher-coach or recreation specialist. A student scheduling a course within this component may expect the final grade to reflect his or her achievement in cognitive acquisitions, affective learnings, and psychomotor skills. Minimal competency levels may be established according to the professional discretion of the respective instructor and each student will be responsible for demonstrating at least these minimal standards before receiving a passing mark.

203 Team Sports I - Football and Wrestling (2)
History, basic skills, game and match strategy, coaching techniques of football and wrestling. Spring semester.

204 Team Sports II - Baseball, Softball, and Volleyball (2)
History; analytical approach to fundamental concepts, basic skills, game strategy, coaching techniques and psychology; investigation of contemporary systems of offensive and defensive theories. Fall semester.

205 Team Sports III - Soccer and Basketball (2)
History; analytical approach to fundamental concepts, basic skills, game strategy, coaching techniques and psychology; investigation of contemporary systems of offensive and defensive theories. Spring semester.

206 Lifetime Sports I - Racquet Sports: Tennis, Badminton and Racquetball (2)
History, basic skills, strategy, contemporary teaching and coaching techniques, skill application for recreational and competitive usage appropriate to each sport of tennis, badminton, and racquetball. Spring semester.

207 Lifetime Sports II - Archery, Cycling, Golf (2)
History, basic skills, strategy, contemporary teaching and coaching techniques, skill application for recreational and competitive usage appropriate to each sport. Fall semester.

208 Stunts, Tumbling, Gymnastics, and Aquatics (2)
Acquisition of fundamental skill development, contemporary teaching and coaching competencies with emphasis on application for elementary, intermediate and advanced neuromuscular development. Fall semester.

209 Physical Fitness: Weight Training/Conditioning, Aerobics, Track and Field (2)
History, basic skills, strategy, psychology, training systems basic to coaching and teaching with emphasis on progressive program from beginning through advanced neuromuscular applications of weight training, conditioning, aerobics, track and field. Fall semester.

210 Movement Exploration and Rhythmic Sequences: Ballroom, Modern, Folk and Square Dance (2)
Fundamental skill acquisition; teaching progressions for artistic execution and expression; elementary forms of productions with emphasis on lesson planning for classroom presentation of movement exploration and rhythmic sequences: Ballroom, Modern, Folk, and Square Dance. Spring semester.

RECREATIONAL SPECIALIST COURSES

199r Special Projects (1-4)
Individual or group projects. Every semester. Maximum credit 4 hours. Prerequisite: approval of HPER department head.

200 Introduction to Recreation (3)
Comprehensive survey of recreational implications for the American way of life; philosophic and historic foundations, career opportunities and responsibilities. Fall semester.
202 Camping and Outdoor Education (2)
Administration and program development; skill development and practical laboratory experience. Field component. Fall semester alternate years.

220 Recreational Skills (2)
Skills relating to a variety of recreational activities and programs. Spring semester alternate years.

227 Skill Concentration (2)
Proficiencies in sports skills essential for the professional physical educator and recreation leader. On demand. Prerequisite: for HPER major only. Class hours to be arranged.

304 Organization and Administration of Recreation (3)
Survey of types of programs, their objectives, content and methods, facilities, budgeting, public relations, personnel management, and policy development. Spring semester.

305 Therapeutic Recreation (3)
Development of programs for physically or mentally ill or convalescent patients: handicapped, retarded, elderly, and other special population groups. Fall semester alternate years.

325 Recreation Leadership and Programming (3)
To develop competencies needed for effective recreation leadership and recreation programming techniques for use in a variety of recreational settings. Spring semester alternate years.

335r Officiating Sports (1)
Rules, interpretations, fundamentals, techniques, and mechanics of officiating seasonal sports. On demand. Prerequisite: HPER major or approval of instructor.

470 Current Topics and Issues in Recreation (3)
Survey of problems and concerns facing recreation leadership, management, facilities development, environmental impact and special population groups. Spring semester alternate years. Prerequisite: above junior level.

479, 480 Internship in Recreation Leadership (6,6)
Supervised internship in leadership and administrative positions; full time contact, minimum eight weeks, concurrent integrative seminars. Every semester. Prerequisite: approval of program leader and HPER department head.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27.

497r Research (1-4)
Every semester. Prerequisite: approval of program leader and HPER department head.

498r Individual Studies (1-4)
Every semester. Prerequisite: approval of program leader and HPER department head.

499r Group Studies (1-4)
Every semester. Prerequisite: approval of program leader and HPER department head.

HPER: Service Program

Physical Recreational Activities

Courses within the service program hold contemporary attractiveness as "lifetime" activities and should appeal to the educated adult for maintaining a healthful and wholesome lifestyle.

Every undergraduate student will be expected to satisfactorily complete a minimum of two physical/recreational activities, one of which must be 021.

Participants enrolled in courses within the service program wear a specific type of uniform or the appropriate clothing and footwear prescribed by the respective instructor. Uniforms may be purchased from the bookstore on campus.

Human Ecology

Associate Professor Tanner, Head

The Department of Human Ecology offers four specializations:
—Fashion and Textile Merchandising
—Interior Design
—Foods and Nutrition
—Family and Consumer Studies

Human Ecology is an integrative field of study which deals with people in their environments and the reciprocal relationship that humans have with their environments. It encompasses professional study in the areas of family and consumer studies, food and nutrition, interior design, and fashion and textile merchandising.

Human Ecology (B.S.)

General Education (see pages 22-23 for list of approved courses)
Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each; approved related courses below will apply)
Concentrations:

Chemistry 111 or D121
Economics C101, C102

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses (All concentrations except Interior Design):

Economics C101, C102
Chemistry 111 or D121
Computer Science 110
Mathematics F210
Psychology C101
Sociology C151
Theatre and Speech 109
Political Science C101 or 244
Human Ecology core: 105, 120, 202, 304, 340, 350, 402

Concentrations:

1. Fashion and Textile Merchandising:
   21 hours from Human Ecology including 210, 211, 312, 313, 316, 412, 413
   12 hours from Business Management 315, 332; Business Marketing 313, 361, 362, 363, 364, 365 (maximum of 32 hours in School of Business courses)

2. Interior Design:
   Human Ecology core: 105, 120, 202, 304, 340, 350, 402
   48 hours from Human Ecology including 121, 211, 220, 223, 225, 306, 320, 321,325,326, 327, 405,412, 420, 422,425
   Computer Science 110
   Art B214, 215,214

3. Foods and Nutrition:
   21 hours from Human Ecology including 206, 207, 270, 305, 332, 401, 430, 431, 432, and 15 hours from one of the following:
   a. Biology 208, 209, 210; Chemistry 122, 351, 352, 466
   or
   b. Accounting 201, 335, 336; Management 315, 332; Marketing 313

4. Family and Consumer Studies:
   21 hours from Human Ecology including 205, 206, 207, 210, 211, 225, 301, 302, 306, 320, 325, 328, 332, 440, 441, and 445, and 15 hours from one of the following:
   a. Psychology 223, 251, 451; Health, Physical Education and Recreation 302, 451, 452; Social Work 210, 315, 411, 415; Sociology 322, 360;
   Anthropology 310; Curriculum and Instruction 204; Educational Psychology 101, 401
   or
   b. Communication 101, 260, 271, 450, 471
   2.0 average in all human ecology courses

Minimum of 30 hours of 300 and 400 level courses
Electives to complete 128 hours

Typical course of study in human ecology (B.S.)*
(All concentrations except Interior Design and Fashion and Textile Merchandising)

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<td></td>
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SOPHOMORE

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JUNIOR

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TOTAL HOURS 128

Typical course of study in Human Ecology: Fashion & Textile Merchandising (B. S.)

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Typical course of study in Human Ecology: Interior Design (B.S.)

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**TOTAL HOURS 128**

HUMAN ECOLOGY COURSES

104 Clothing Construction (3)
Proficiency based techniques and principles of garment construction. On demand. *Lecture 2 hours, laboratory 2 hours.*

105 Nutrition (3)
An introduction to nutrition with an integrated emphasis on the scientific, psychological, sociological, and economic aspects of nutrition. Impact of optimal nutrition on human development. Application of knowledge to the home and school situation. Every semester.

120 Design Fundamentals (3)
A study of design as related to the individual and his or her environment. Review of the basic theories regarding principles and elements of design with emphasis on using design to solve utilitarian as well as aesthetic problems. *Lecture 1 hour, Studio 4 hours.* Formerly Human Ecology 101. Every semester.

121 Interior Design Graphics (3)
A basic interior design graphics course. Includes symbols and techniques necessary to draw and understand interior design plans. Lecture 1 hour, studio 6 hours. Formerly Human Ecology 221. Spring semester. *Prerequisite: 120.*

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit 4 hours.

200 Introduction to Teaching Vocational Human Ecology (1)
Introduction to the various roles of the human ecology teacher in vocational settings. Philosophy, legislation, and regulations governing vocational human ecology. Exploration experiences include observation within educational and vocational settings.

202 Orientation to the Human Ecology Profession (1)
Introduction to human ecology as an area of study focusing on basic concepts that form the foundation of the discipline. History, philosophy, and career options in human ecology. Fall semester.

205 Family Relations: Preparation for Marriage (3)
A functional approach to understanding cultural and social influences on dating, love, mate selection, sex, and early marriage in America. Every semester.

206 Food Science (3)
Basic scientific concepts related to the selection, care, and preparation of foods; emphasis on chemical and physical properties and their interaction with environmental variables. Fall semester. *Lecture 2 hours, laboratory 2 hours.*

207 Food Management and Marketing (3)
Nature of the American food market, marketing procedures, resource management, regulations in the food industry, consumer food technology, cultural and regional influences in food preference, menu development, and styles of service. Spring semester.

210 Introduction to Fashion Marketing (3)
An introduction to the fashion industry from concept to consumer including psychological/sociological influences upon consumer decision making. Course examines trends, cycles, consumer groups, distribution of fashion goods with emphasis on trade issues. Analysis of marketing and merchandising activities of all levels of fashion industry. Fall semester. Formerly Human Ecology 311.

211 Consumer Textiles (3)
Modern fibers, yarns, fabrics, and finishes for apparel and home furnishings. Trade practices and consumer problems. Lecture 2 hours, lab 2 hours. Spring semester and summer. Formerly Human Ecology 201.

220 Interior Space Design (3)
Analysis of space needs for people. Techniques of analyzing floor plans. Drawing skills, symbols, and terminology used in interior design. Fall semester. *Lecture 1 hour, laboratory 4 hours.*

222 Color Systems (3)
Experimentation in color systems and their use in interior design. Analysis of psychological impact of color systems on people. Correlation of color scheme to total room design. Development of skills for various media and tools used in color planning. Fall semester. *Lecture 1 hour, laboratory 4 hours.* Prerequisite: 120.

223 Fundamentals of Visual Presentation (3)
An introduction to basic skills, materials, and techniques employed in the visual and verbal presentation of interior design concepts. Fall semester. *Studio 6 hours.* Prerequisite: 121. Corequisite: 220.

225 Elements of Interior Design(3)
Components of the interior basic to the art of interior design: wall treatments, floor coverings, window treatment, lighting, accessories, fabric selections, furniture arrangements. Design principles in putting the elements together. Patios and outdoor living furnishings. Energy conservation. Formerly Human Ecology 315. *Prerequisites: 120, 220, 222, or equivalent.*
270 Introduction to Restaurant Management (3)
Profile of the food service and hospitality industry. Management theories, trends in tourism, promotions, regulations, human relations, and legal aspects of the industry. Spring semester.

300 Child Development Lab (1)
Supervised observation in community agencies within appropriate age levels. On demand. Corequisite: 301.

301 Child Development (3)
Growth and development of infants and pre-school children within the familial setting. Review of current research relating to child rearing. Emphasis on parenthood and parenting skills. Directed experience in observation and participation in approved nursery and day care centers. On demand. Lecture 2 hours, laboratory 2 hours. Prerequisites: lower level child study course from psychology or the School of Education.

302 Clothing Concepts and Construction (3)
A comprehensive study of clothing concepts and construction for educators and apparel professionals in the use of modern fabrics, technology, and design details. On demand. Lecture 2 hours, laboratory 2 hours. Prerequisites: 104, 120.

304 Management for Effective Living (3)
The management process as applied to the home and personal environment. Use and development of human and material resources in relation to values and goals. Emphasis on time management, money management, and financial security. Every semester.

305 Advanced Nutrition (3)
Food nutrients in physiological and biochemical processes of the body. Emphasis on their relationship to health and human development. Fall semester. Prerequisites: 105 or equivalent; Chemistry 121, 122 or equivalent.

306 Housing and Energy Management (3)
Contemporary trends in housing. Basics of the selection and operation of household equipment. Emphasis on energy conscious life styles and optimum use of space. Fall semester.

312 Fashions in History (3)
History of fashion from Egyptian period to the present. Includes aesthetic, economic, social, and psychological factors influencing fashion. Analysis of fashion fundamentals and trends with implications for fashion merchandising. Fall semester.

313 Principles of Merchandising (3)
Principles and practices of merchandising in relation to the retailing of apparel and textile products. Problem solving approach with the consumer as a major consideration in planning merchandise assortment, presentation, and promotion. Fall semester.

314 Fashion Sketching (3)
A study of sketching techniques used by fashion professionals. Includes proportion, movement, sketching garments, rendering fabrics, analysis of current fashion illustrations, and designing an illustration. Fall semester. Prerequisite: 120 or equivalent.

316 Fashion Advertising and Promotion (3)
Principles of sales promotion and analysis of the activities utilized by retail and wholesale firms to influence the sale of merchandise. Includes advertising, display, special events, publicity, fashion shows, and personal selling. Fall semester. Prerequisite: 210. Formerly Human Ecology 370.

320 Historic Furnishings (3)
Study of design characteristics of historical furniture and interiors including the dominant, socio-economic influences on design development. An overview of the selection and use of interior furnishings. Formerly Human Ecology 303. Fall semester.

321 Contemporary Furnishings (3)
A study of the characteristics of furnishings and interiors of the late nineteenth century and the twentieth century. Includes furniture designers, interior designers, design movements, and the effects of the Industrial Revolution and the consequent use of machinery in the production of furniture. Formerly Human Ecology 403. Spring semester.

325 Images of Western Living (3)
Perspectives of the near environment of Western people using a study of styles of architecture, furniture, and clothing of selected historical periods. Exploration of the combination of economic, geographic, social, and cultural patterns which influenced their development. Focus on evaluating styles and understanding their current impact. Formerly Human Ecology 390. On demand.

326 Residential Interiors (3)
Advanced projects in residential design using creative design techniques in a variety of media as a means of visual communication and precise delineation. Fall semester. Lecture 1 hour, laboratory 4 hours. Prerequisites: 121, 220, 222, and 225.

327 Fundamentals of Kitchen & Bath Planning (3)
A study of the aesthetic and technical elements of kitchen and bath design. Spring semester. Studio 6 hours. Prerequisite: 326.

328 The Consumer and the Market (3)

330 Experimental Food Science (3)
Chemical and physical factors affecting food preparation, including experimental methods and individual experimentation in selected food problems. Spring semester alternate years. Lecture 1 hour, laboratory 4 hours. Prerequisites: 206, Chemistry 122, Biology 210.

332 Life Cycle Nutrition (3)
Application of the principles of nutrition in dietary management for meeting the physiological, psychological, and social needs of individuals and groups throughout the life cycle. Focus on the postulated nutrient requirements in various environments and economic levels. Spring semester. Prerequisite: 105 or knowledge of basic principles of nutrition.

340 Family Relations: Family Interaction (3)
Family relationships and alliances at each stage of the family life cycle. The family as a small group: role, status, and power interactions of spouses, siblings, and generations. Crisis and adjustments. Every semester.

350 Communication in Family and Consumer Services (3)
Responsibilities, ethics, and techniques for the professional in presenting information and materials to the public through radio, newspaper, television, and live performances. General areas of public relations. Every semester.

401 Diet Therapy (3)
Application of diet designed for the prevention and treatment of diseases which are influenced by food intake. Spring semester alternate years. Prerequisite: 305.

402 Seminar (2)
Professional procedures in consumer and family related professions including trends, developments, challenges, opportunities, ethics, and business procedures. Spring semester. Prerequisite: approval of the department.

405 Human Ecology Practicum (3)
Directed field experience in a selected professional area of human ecology, including a weekly seminar and faculty supervision within an approved institution, agency, or business establishment. Written application to department head required three months prior to the semester in which the student plans to register for the course. Every semester. Prerequisite: senior status in human ecology and approval of department.

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 motifs particular to select countries or cultures. Includes conservation and display techniques appropriate for historic textiles. Spring semester. Prerequisite: 211.

413 Fashion and Retail Buying (3)
Principles of merchandise buying, planning and inventory control for retail stores with emphasis on computer applications for merchandise planning. Includes procedures for calculating open-to-buy, stock turn, stock-sales ratio, and pricing formulas. Fall semester. Prerequisite: 343.
**420 Management Procedures for Interior Design (3)**
General characteristics of management terminology and procedures in the interior field with a major emphasis placed on the ability to systematize and control the flow of operations, money, materials and commitments. Spring semester. **Prerequisites:** 326. **Corequisite:** 422.

**422 Contract Interiors (3)**
Development of creative ideas in commercial design projects which integrate interior design elements to achieve predetermined goals. Spring semester. **Lecture 1 hour, laboratory 4 hours. Prerequisites:** 220, 222, 225, 320, and 326.

**425 Interior Textile Design (3)**
A study of the process of the design of textiles for interior use. The course will focus on the designs, construction, and specification of textiles as related to wall, window, and flooring needs. Computer aided techniques will be applied where appropriate.

**430 Food Systems Administration I (3)**
Management, organization, and administration of food service in institutions. Fall semester.

**431 Quantity Food Service (3)**
Principles, methods, and techniques in planning, purchasing, production, and service of food in quantity; selection and use of equipment; and quality standards. Laboratory experiences in approved local institutions. Fall semester. **Prerequisite:** 430.

**432 Food and Hospitality Systems (3)**
A continuation of 430 with emphasis on production, manpower, facility, and financial planning in food service and hospitality systems. Spring semester. **Prerequisites:** 430, 431.

**440 Infant Development (3)**
Explores the developmental needs which characterize the infant period, reviews the research extant on infants in groups, and examines the interrelationships among various aspects of infant development in families and group care settings. **On demand. Prerequisite:** 441.

**441 Infant Day Care Practicum (1)**
Supervised observation and participation in group care settings for children under 2 years. **On demand. Prerequisite:** 440.

**445 Parenting (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 to parenting under "special" circumstances; i.e. divorced and single parents, stepparents, dual career parents, handicapped children, and others. Attention is given to interaction pattern research, the development of skills, and the reciprocal nature of parent/child relationships. **On demand.**

**460 Methods of Teaching Vocational Home Economics (2)**
Use of principles of learning in selecting, developing, utilizing and evaluating instructional strategies and materials. Emphasis on consumer and homemaking programs.

**463 Curriculum Development for Home Economics in Secondary Schools (2)**
Program development, curriculum design and organization in home economics for secondary schools. Experiences in working with youth and adults in the community. **Organization and administration of a department.**

**495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)**
On demand. See "Departmental Honors," page 27.

**497r Research (1-4)**
On demand.

**498r Individual Studies (1-4)**
On demand.

**499r Group Studies (1-4)**
On demand.
School of Engineering

Professor Ronald B. Cox, Dean

The School of Engineering is the organizational unit of the University which is responsible for engineering and computer science programs. Programs are offered which lead to the Bachelor of Science in Engineering degree, the Bachelor of Science degree (engineering management), the Master of Science degree with a major in engineering, the Master of Science degree with a major in engineering management, the Bachelor of Science degree with a major in computer science, and the Master of Science degree with a major in computer science. The computer science programs are described under the Department of Computer Science section immediately after the Engineering Programs.

Engineering Programs
Programs of study available at the B.S. level in which students may specialize are:

- Chemical Engineering
- Civil Engineering (Structural)
- Electrical Engineering (Instrumentation and Control)
- Electrical Engineering (Power)
- Industrial Engineering
- Manufacturing Engineering (Management)
- Manufacturing Engineering (Systems)
- Mechanical Engineering (Mechanics)
- Mechanical Engineering (Thermal science)
- Engineering Management

The faculty listed above support all of the engineering programs offered by the University. In addition, the school draws on the talents of adjunct faculty who are employed in professional capacities in a variety of industrial and governmental settings.

Additionally, the Cranston Pearce Center for Applied Engineering and Technology provides research and development opportunities for both faculty and students. Projects range from basic design and product development to large scale system studies on power distribution networks. 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 conjunction with the Center of Excellence in Computer Applications and with the Burkett Miller Chair of Excellence in Management and Technology to pursue appropriate technology applications.

The B.S. Engineering program is accredited by the Engineering Accreditation Commission/Accreditation Board for Engineering and Technology (ABET), the national accrediting agency for engineering programs. The Cooperative Engineering program is also nationally accredited by ABET.

Transfer Credit
Credits received by transfer for required engineering courses in either engineering or engineering management programs must be a grade of C or better. Although equivalents will be awarded for D grades, students must retake the courses.

Bachelor of Science in Engineering (B.S.E.) Program
The engineering curriculum provides a four year program with emphasis on the fundamentals of engineering design and analysis, mathematics, science, and communications. Considerable attention is also given to supporting curricular content in the areas of humanities and social sciences.

The engineering design experiences begin with freshman team design projects and are continued throughout the curriculum. Particular emphasis is given to the integration of various engineering fundamentals and principles along with economic aspects of engineering design.

During the junior year a course is presented which develops engineering design as a decision-making process with objectives, constraints, and models. Appropriate optimization techniques are also introduced. Following this course, all students take an engineering design course during their senior year which provides for the application of engineering design techniques to specific problems in their particular area of interest. The design experiences are culminated by a comprehensive year-long team design project during the senior year. This experience involves an interdisciplinary approach to the design of a major product or system. Techniques of engineering and management are emphasized throughout the course.

Since engineering functions are increasingly dependent upon computers, the study of the computer and its utilization is
integrated throughout the curriculum. The study of the computer begins with a course in engineering computations taken during the freshman year. A computer application and numerical methods course follows during the sophomore year. Together, these courses provide the background for the use of the computer during the remainder of the engineering program.

Laboratories are an integral part of the engineering programs. They develop an understanding of engineering instrumentation, experimental techniques, fundamental principles, and communicational skills. Consequently, laboratory courses are required in each of the four years of study toward the engineering degree.

Engineering (B.S.E.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)

Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)

Category C: 2 approved behavioral science courses (6 hours)

Category D: 1 approved physical or natural science course with laboratory (4 hours; approved related course below will apply)

Category E: 1 approved mathematics course (3 hours; approved related course below will apply)

Category G: 1 approved perspectives course other than engineering (3 hours)

The Freshman Seminar (approved related course below will apply)

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses

Major and related courses vary depending upon the specialization (see below); however, all B.S. Engineering courses will require at least:

Mathematics F150, 160, 212, 245, 255
Chemistry D121 (counts as Category D)
Physics 231
Engineering Core (46 to 56 hours)
Speciality Courses: 24 hours minimum (including senior design)
Electives depend on program selected
Minimum degree requirements: 135 hours (145 for co-op graduates)
2.0 average in all engineering courses

Minimum of 30 hours of 300 and 400 level courses

Specializations

In general, all engineering students take a common core of courses during their first three years. Specialization courses are taken during the fourth year. A student may qualify for a second specialization by taking a minimum of 8 additional senior specialty hours and by meeting the specific requirements for the second specialty. Only one B.S.E. degree will be awarded, but the permanent academic record will indicate the second specialization. The requirements for the specializations are as follows:

Chemical Engineering

Special requirements of this concentration dictate accurate advising regarding prerequisite courses, etc., as early as the freshman year.

General Education requirements (see above)

Major and related courses
Mathematics F150, 160, 212, 245, 255
Chemistry D121 122, 351, 352, 371, 372
Physics 231
Engineering Core Courses: 46 hours including 102, 103, 104, 112, 113, 114, 124, 225, 246, 247, 271, 272, 303, 307, 328, 329, 340, 380, 381, 410, 411
Speciality Engineering Courses: 27 hours including 331, 405, 430, 432, 433, 434, 435, 493, 494*
2.0 average in all engineering courses
Total hours: 144 (154 for co-op graduates)

*For qualified students, Engineering 495 (Honors) may be substituted for 4 of the 7 hours required in Engineering 493, 494.

Civil Engineering (Structural)

General Education requirements (see above)

Major and related courses
Mathematics F150, 160, 212, 245, 255
Chemistry D121
Physics 231, 232
Speciality Engineering Courses: 27 hours including 452, 460, 462, 465, 468, 493, 494* plus approved elective
2.0 average in all engineering courses
Total hours: 138 (148 for co-op graduates)

*For qualified students, Engineering 495 (Honors) may be substituted for 4 of the 7 hours required in Engineering 493, 494.

Electrical Engineering

(Two tracks: Instrumentation and Control or Power)

General Education requirements (see above)

Major and related courses
Mathematics F150, 160, 212, 245, 255
Chemistry D121
Physics 231, 232
2.0 average in all engineering courses
Total hours: 142 (152 for co-op graduates)

*For qualified students, Engineering 495 (Honors) may be substituted for 4 of the 7 hours required in Engineering 493, 494.

Industrial Engineering

General Education requirements (see above)

Major and related courses
Mathematics F150, 160, 212, 245, 255
Chemistry D121
Physics 231, 232
Speciality Engineering Courses: 25 hours including 354, 450, 452, 457, 493, 494* plus approved electives
2.0 average in all engineering courses
Total hours: 136 (146 for co-op graduates)

*For qualified students, Engineering 495 (Honors) may be substituted for 4 of the 7 hours required in Engineering 493, 494.

Manufacturing Engineering

(Two tracks: Management or Systems)

General Education requirements (see above)

Major and related courses
Mathematics F150, 160, 212, 245, 255
Chemistry D121
Economics C101, C102
Physics 231

Specialty Engineering and Related Courses (Management): 37 hours including Engineering 358, 452, 453, 456, 457, 458, 493, 494*, Accounting 201, 202, 305 or 306; Psychology 406.


2.0 average in all engineering courses.

Total hours (Management): 140 (150 for co-op students)
(Management): 138 (148 for co-op students)

*For qualified students, Engineering 495 (Honors) may be substituted for 4 of the 7 hours required in Engineering 493, 494.

Mechanical Engineering

(Two tracks: Mechanics or Thermal Science)

General Education requirements (see above)

Major and related courses
Mathematics F150, 160, 212, 245, 255
Chemistry DI21
Physics 231, 232


Specialty Engineering Courses (Mechanics): 24 hours from 348, 405, 406, 442, 493, 494*, plus two courses selected from 444, 445, 446 or 448.

Specialty Engineering Courses (Thermal Science): 24 hours including 331, 405, 406, 436, 493, 494*, either 438 or 439 plus approve elective.

2.0 average in all engineering courses.

Total hours: 135 (145 for co-op graduates)

Typical courses of study in engineering (B.S.E.)

In general all engineering students take a common core of courses during their two years and then take courses in their area of specialization during their third and fourth years. The typical first two years for all students are listed below, followed by the remaining years for students in each of the areas of specialization.

Engineering Core

Chemical, and Manufacturing Engineering differ from this sequence; see under Areas of Specialization.

First Semester | Second Semester
---|---
FRESHMAN
Engineering 102 | 3 Engineering 104 | 3
Engineering 103 | 3 Engineering 114 | 1
Engineering 113 | 1 Mathematics 160 | 4
Engineering 112 | 1 Mathematics 212 | 3
Engineering 124 | 3 Chemistry DI21 | 4
Mathematics 150* | 4 General Education Category A | 3
General Education Category A | 3 Physical Education 021 | 1
Total: 18 | Total: 19

SOPHOMORE
Engineering 225 | 3 Engineering 248 | 3
Engineering 246 | 3 Engineering 271 | 1
Engineering 247 | 1 Engineering 272 | 3
Mathematics 245 | 3 Mathematics 255 | 3
Physics 231 | 4 Physics 232 | 4
General Education Category C | 3 General Education Category C | 3
Physical Education Activity | 1 | 1
Total: 18 | Total: 19

* All students should check with adviser to see if they are eligible for Mathematics 150. If they are not eligible for Mathematics 150, they should consult with the School of Engineering to determine which courses to take.

Areas of Specialization

Chemical Engineering—

Students in this area generally vary from the engineering core for the first three years by taking Chemistry 121 and 122 during the freshman year, Chemistry 351 and 352 during the sophomore year, and Chemistry 371 and 372 during their junior year. The additional chemistry courses are usually taken in lieu of engineering and physics. Thus these students must consult their advisers at the beginning of their freshman year in order to give consideration to prerequisites and program integration.

First Semester | Second Semester
---|---
FRESHMAN
Engineering 102 | 3 Engineering 104 | 3
Engineering 103 | 3 Engineering 114 | 1
Engineering 113 | 1 Mathematics 160 | 4
Engineering 112 | 1 Mathematics 212 | 3
Engineering 124 | 3 Chemistry DI21 | 4
Mathematics 150 | 4 General Education Category A | 3
Chemistry DI21 | 4 Physical Education 021 | 1
Total: 19 | Total: 19

SOPHOMORE
Engineering 225 | 3 Engineering 271 | 1
Engineering 246 | 3 Engineering 272 | 3
Engineering 247 | 1 Mathematics 255 | 3
Mathematics 245 | 3 Chemistry 352 | 4
Chemistry 351 | 4 General Education Category C | 3
General Education Category A | 3 General Education Category C | 3
Physical Education Activity | 1 | 1
Total: 18 | Total: 17

JUNIOR
Engineering 303 | 3 Engineering 307 | 4
Engineering 328 | 3 Engineering 331 | 3
Engineering 329 | 1 Engineering 380 | 3
Engineering 340 | 3 Engineering 381 | 1
Chemistry 371 | 4 Chemistry 372 | 4
Physics 231 | 4 General Education Category B | 3
Total: 19 | Total: 18

SENIOR
Engineering 405 | 4 Engineering 411 Seminar | 0
Engineering 410 Seminar | 1 Engineering 430 | 3
Engineering 432 | 3 Engineering 433 | 3
Engineering 435 | 4 Engineering 434 | 3
Engineering 493 | 3 Engineering 494 | 4
General Education Category B | 3 General Education Category B | 3
General Education Category G | 3 General Education Category G | 3
Total: 18 | Total: 18

TOTAL HOURS 144

Civil Engineering (Structural)—

JUNIOR
Engineering 303 | 4 Engineering 307 | 4
Engineering 328 | 3 Engineering 322 | 3
Engineering 329 | 1 Engineering 380 | 3
Engineering 340 | 3 Engineering 381 | 1
Engineering 371 | 3 General Education Category B | 3
Engineering 372 | 1 General Education Category B | 3
Total: 15 | Total: 17

SENIOR
Engineering 410 Seminar | 1 Engineering 411 Seminar | 0
Engineering 452 | 3 Engineering 465 | 4
Engineering 460 | 3 Engineering 468 | 3
Engineering 462 | 4 Engineering 494 | 4
Engineering 493 | 3 General Education Category B | 3
Engineering elective | 3 General Education Category G | 3
Total: 17 | Total: 17

TOTAL HOURS 138
# Electrical Engineering (Instrumentation and Control) —

**JUNIOR**
- Engineering 303 4
- Engineering 325 3
- Engineering 340 3
- Engineering 371 1
- Engineering 372 3
- General Education Category B 3

**Total** 17

**SENIOR**
- Engineering 410 Seminar 1
- Engineering 470 3
- Engineering 473 3
- Engineering 477 4
- Engineering 493 3
- General Education Category B 3

**Total** 17

**TOTAL HOURS 142**

# Electrical Engineering (Power) —

**JUNIOR**
- Engineering 303
- Engineering 328
- Engineering 340
- Engineering 371
- Engineering 372
- General Education Category B

**Total** 17

**SENIOR**
- Engineering 410 Seminar 1
- Engineering 470 3
- Engineering 473 3
- Engineering 477 4
- Engineering 493 3
- General Education Category B 3

**Total** 17

**TOTAL HOURS 142**

# Industrial Engineering —

**JUNIOR**
- Engineering 303 4
- Engineering 328 3
- Engineering 329 1
- Engineering 340 3
- Engineering 371 1
- Engineering 372 3

**Total** 15

**SENIOR**
- Engineering 410 1
- Engineering 452 3
- Engineering 457 3
- Engineering Elective 3
- General Education Category B 3

**Total** 16

**TOTAL HOURS 136**

# Manufacturing Engineering (Management) —

**SOPHOMORE**
- Engineering 225 3
- Engineering 246 3
- Engineering 247 1
- Mathematics 245 3
- Physics 231 4
- Economics C101 3
- Physical Education 022 1

**Total** 18

**JUNIOR**
- Engineering 303 4
- Engineering 328 3
- Engineering 329 1
- Engineering 340 3
- Engineering 322 3
- Business Accounting 201 3

**Total** 17

**TOTAL HOURS 137**

# Manufacturing Engineering (Systems) —

**SOPHOMORE**
- Engineering 225 3
- Engineering 246 3
- Engineering 247 1
- Mathematics 245 3
- Physics 231 4
- Economics C101 3
- Physical Education 022 1

**Total** 18

**JUNIOR**
- Engineering 303 4
- Engineering 328 3
- Engineering 329 1
- Engineering 340 3
- Engineering 322 3
- Engineering 371 1
- Engineering 372 3

**Total** 18

**TOTAL HOURS 138**
Mechanical Engineering (Mechanics)—

JUNIOR
- Engineering 303 4
- Engineering 328 3
- Engineering 329 1
- Engineering 340 3
- Engineering 371 1
- Engineering 372 3
- Total 15

SENIOR
- Engineering 405 4
- Engineering 406 1
- Engineering 410 Seminar 1
- Engineering Elective* 3
- Engineering 493 3
- General Education Category B 3
- Total 15

TOTAL HOURS 135

*Two courses selected from 444, 445, 446, and 468.

Mechanical Engineering (Thermal Science)—

JUNIOR
- Engineering 303 4
- Engineering 328 3
- Engineering 329 1
- Engineering 340 3
- Engineering 371 1
- Engineering 372 3
- Total 15

SENIOR
- Engineering 405 4
- Engineering 406 1
- Engineering 410 Seminar 1
- Engineering Elective* 3
- Engineering 493 3
- General Education Category B 3
- Total 15

TOTAL HOURS 135

Career Preparation for Other Fields
By carefully selecting electives, students may prepare to pursue careers outside engineering. For example, a student may desire to study medicine, law, business, or a number of other disciplines. Such plans usually require additional coursework beyond that required for the engineering degree. However, engineering study is considered to be excellent preparation for such careers.

For guidance and assistance concerning any special program, the student should contact one of the directors or the dean of the School of Engineering in order that an appropriate course of study can be developed.

Engineering Management Program

Assistant Professor G. Sedrick, Coordinator

Engineering Management (B.S.)

General Education (see pages 22-23 for list of approved courses)

Category A: 2 approved courses in written communication in the English language (6 hours)
Category B: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
Category C: 2 approved behavioral science courses (6 hours; approved related course below will apply)
Category D: 1 approved physical or natural science course with laboratory (4 hours; approved related course below will apply)
Category E: 1 approved mathematics course (3 hours; approved related course below will apply)
Category G: 1 approved perspectives course other than engineering (3 hours)

The Freshman Seminar (approved related course below will apply)

Health and Physical Education 021 plus one additional semester physical education activity

Major and related courses
- Math F145, F150, 160, 212, 245
- Chemistry D121
- Physics 231, 303
- Engineering 102, 103, 104, 112, 113, 114, 124, 225, 246, 247, 303, 354, 410, 411, 452, 457
- Economics C101, C102
- Accounting 201, 202, 305
- Management 211, 212, 311
- Finance 302
- Marketing 313
- Psychology 406 (Industrial/Organizational Behavior)
- Free electives (10 hours)
- 2.0 average in all engineering, accounting, finance, management, and marketing courses

Minimum of 30 hours of 300 and 400 level courses
Total hours: 128 (minimum)

Note: No more than 32 hours may be taken in the School of Business and credited toward the degree.
Typical course of study in engineering management (B.S.)

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
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<tbody>
<tr>
<td><strong>JUNIOR</strong></td>
<td></td>
</tr>
<tr>
<td>General Education Category A 3</td>
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<tr>
<td>Chemistry D121 4</td>
<td>Engineering 102</td>
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<td>Chemistry Lab 0</td>
<td>Graphic Design 3</td>
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<td>Mathematics F145 3</td>
<td>Engineering 124</td>
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<tr>
<td>Economics C101 3</td>
<td>Economics C102 3</td>
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<td>General Education Category B 3</td>
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<tr>
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<tr>
<td>Engineering 103 3</td>
<td>Engineering 104 3</td>
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<tr>
<td>Engineering 113 1</td>
<td>Engineering 114 1</td>
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<tr>
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<td>Mathematics F160 4</td>
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<td>Accounting 201 3</td>
<td>Mathematics 212 3</td>
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<td>Accounting 202 3</td>
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<td>Management 212 3</td>
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<tr>
<td><strong>JUNIOR</strong></td>
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<tr>
<td>Mathematics 245 3</td>
<td>Engineering 225 3</td>
</tr>
<tr>
<td>Physics 231 4</td>
<td>Engineering 246 3</td>
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<tr>
<td>Accounting 305 3</td>
<td>Engineering 247 1</td>
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<td>Engineering 303 4</td>
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<td><strong>Total</strong> 16</td>
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<tr>
<td><strong>SENIOR</strong></td>
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<tr>
<td>Engineering 410 Seminar 1</td>
<td>Engineering 411 Seminar 0</td>
</tr>
<tr>
<td>Engineering 452 3</td>
<td>Engineering 457 3</td>
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<td>Psychology 406 3</td>
<td>Physics 303 4</td>
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<td>General electives 7</td>
<td>Finance 302 3</td>
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<td><strong>Total</strong> 16</td>
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<tr>
<td><strong>TOTAL HOURS 128</strong></td>
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</tbody>
</table>

Cooperative Engineering Program

B. Hull, Coordinator

In addition to the basic four-year program a five-year optional cooperative program is available. In this program students alternate between a term in school and a term in industry. Typical students will receive their baccalaureate degrees after five years and will obtain approximately 20 months of industrial work experience. This program is designed to: (1) provide practical experience which relates academic studies to industry requirements, (2) give the student a better understanding of human relations in industry, and (3) assist the student financially. The financial benefits to the student are usually adequate to cover most of the student’s college expenses while obtaining the B.S.E. degree.

This program is open to any UTC engineering student who is in good academic standing, whose class work and school activities indicate that he or she is dependable and capable, and who is acceptable to a cooperating company. In general, a student is admitted to this program at the end of the freshman year.

More specific information concerning the program is given in the following:

1. **Scholastic requirements** A student must have at least a 2.5 cumulative grade point average (out of 4.0) to be enrolled in the program. Further, the student must maintain a 2.25 cumulative grade point average to remain in the program. If the student fails to attain at least a 2.0 average in any semester while participating in the program, the student will be terminated from the program.

   In general it is expected that co-op students will maintain a grade point average considerably above the 2.25 minimum.

2. **Registration** Co-op students are required to register each term (including each term in industry) as a co-op student. A nominal fee will be assessed the student for registration during the work term.

3. **Cooperative Seminar** A co-op student is expected to register and participate in Engineering 390r (Cooperative Seminar) during the term in school immediately following a work assignment. This seminar is especially designed to provide for discussing and reporting on projects conducted as a part of the cooperative work assignment.

4. **Reports** Student participants and employers are requested to file a brief statement with UTC concerning the student’s work at the end of each work term.

5. **Work Schedule** Co-op students are expected to attend school full-time during their first year and last year in the program. They will alternate each term (between school and work) during the three years between their first and last year in the program. (A term is considered to be either first semester, second semester, or summer term.) Typical co-op schedules follow the list of engineering courses. Note that a work term precedes each registration for Engineering 390r.

6. **Co-op Graduate** A co-op student will be certified as a co-op graduate on his or her permanent record if upon graduation he or she has completed at least 52 weeks of co-op work experience and meets the degree requirements below.

**Degree Requirements**

A B.S.E. cooperative engineering student graduate completes all degree requirements of the B.S.E. graduate listed above, plus 10 additional hours in Engineering 390r, Cooperative Seminar.
ENGINEERING COURSES

A minimum grade of C must be made in any engineering course used as a prerequisite for any other engineering course.

001-007 Cooperative Work Experience (0)
Consecutive cooperative engineering work terms as a part of the cooperative engineering program. Student participation in off-campus work terms in industry (work term defined as either first semester, second semester, or a three month summer term in industry). Every semester.

102 Engineering Graphic Communication (3) CORE
Multiview projection, sectional views, auxiliary views. Sketching. Construction of graphs, descriptive geometry, including points, lines, and planes in auxiliary views. Every semester. Lecture 2 hours, laboratory 2 hours. Corequisite: Mathematics 145 or equivalent.

103 Basic Engineering Science I (3) CORE

104 Basic Engineering Science II (3) CORE

112 The Freshman Seminar for Engineer (1) CORE
Introduction to the nature of university education including engineering education. Designed to help freshmen adjust to the University, to develop a better understanding of the learning process and processes of critical thinking, and to enrich their appreciation for the University's commitment to development of the intellect. Every semester. Formerly Engineering 110, 111 Lecture 1 hour.

113 Freshman Engineering Laboratory (1) CORE
Laboratory experiments and interactive computer exercises to support and enhance the topics listed for Engineering 103. Every semester. Formerly Engineering 105 Laboratory 3 hours. Corequisite: ENGR 103

114 Freshman Engineering Design (1) CORE
Introduction to the design process in engineering including: historical perspective, problem definition, idea generation, and simple decision making. Design exercises culminating in a conceptual, group design project, with application of basic engineering science. Written and oral presentation included. Every semester. Formerly Engineering 106. Laboratory 3 hours. Corequisite: 104.

124 Introduction to Engineering Computations (3) CORE
Flow diagram representation of processes. Construction of computational algorithms for computer solution. Experience in solution of typical engineering problems in BASIC and in FORTRAN by digital computer. Introduction to the use of plotters and graphics terminals. Every semester. Lecture 3 hours. Prerequisite: Mathematics 145 or equivalent.

199r Special Introductory Topics in Engineering (1-4)
Introductory treatment of a fundamental area in engineering, varying from term to term. On demand. Prerequisite: approval of instructor and dean.

200 Structures in Architecture (3)
The history, esthetics, functional beauty, and behavior of architectural structures will be presented along with the economic, environmental, social, political, and scientific factors which were effected and affected by them. On demand. Lecture 3 hours. Prerequisite: high school algebra and geometry.

211 Pollution Controls (3)
The emergence and solution of pollution problems. Discussion of fundamental ideas and policies contributing to pollution problems. Pollution is examined from industrial, political, and social perspectives. Included are role-playing experiences designed to illustrate the effects of various policies on the quality of life in a simulated community. Fall semester. Lecture 3 hours. Prerequisite: sophomore standing.

225 Engineering Computations and Numerical Techniques (3) CORE
Application of the FORTRAN programming language to the solution of representative engineering problems by the digital computer. Experience in program design, implementation, and documentation. Applications of numerical techniques to integration, solution of sets of equations, differential equations, and optimization. Fall semester and summer. Lecture 3 hours. Prerequisite: Engineering 124 with grade of C or better. Corequisite: Mathematics 245.

246 Mechanics (3) CORE

247 Mechanics Laboratory (1) CORE
Laboratories that include measurement and accuracy, hardness and impact strength, modulus of elasticity, torsion, beam bending. Design project: analysis, design and test of a structure. Emphasis on individualized project. Every semester. Laboratory 3 hours. Corequisite: 246.

248 Dynamics (3) CORE
Rectilinear, curvilinear, and rotary motion. D'Alembert's principles of work and energy. Impulse and momentum, impact. Three-dimensional kinematics and dynamics. Every semester. Lecture 3 hours. Prerequisites: 246, 247 with grades of C or better, Mathematics 245. Corequisite: Mathematics 255.

271 Electronic Circuits I Laboratory (1) CORE
Introduction to laboratory instrumentation, measurement techniques, electrical circuit elements and circuit behavior for DC, AC and transient sources. Digital computer analysis of electrical circuits. Spring semester. Laboratory 3 hours. Corequisite: 272.

II Electronic Circuits I (3) CORE

303 Thermodynamics (4) CORE
Classical thermodynamics with emphasis on first and second laws of thermodynamics. Property relationships, chemical equilbrium, and cycle analysis. Fall semester and summer. Lecture 4 hours. Prerequisites: 104 with grade of C or better, Mathematics 245.

307 Fluid Mechanics (4) CORE
Fluid statics and kinematics; fluid dynamics including Bernoulli, continuity and momentum equations; fluid measurements; viscosity; compressible and incompressible flow; laminar and turbulent flow; flow in pipes and open channels; model studies; lift and drag. Laboratory: pressure measurements; quantity measurements; property measurements; energy losses; wind tunnel studies; open channel flow; pumps and turbines; pipe flow. Design experience included in the laboratory. Every semester. Lecture 3 hours, laboratory 3 hours. Prerequisite: 104 with grade of C or better, Mathematics 255.

322 Probability and Statistics for Engineering (3) CORE
Introduction to probability and statistical methods with application to engineering problems. Basic statistical distributions. Simulation of stochastic processes. Elementary sampling, testing, and estimation. Spring semester and summer. Lecture 3 hours. Prerequisites: 124 with grade of C or better, Mathematics 255.

325 Signals and Systems (3)
Time, sequence and frequency domain analysis of linear continuous-time and discrete-time systems. Direct solution methods for differential and difference equations, impulse response, convolution. LaPlace, Fourier and Z transform methods. State variables for discrete and continuous systems. Fall semester. Lecture 3 hours. Prerequisites: 271, 272 with grades of C or better, Mathematics 245, 255.
328 Control Systems (3) CORE
Classical feedback control systems for continuous time systems. Block diagrams and performance criteria. Root locus, frequency methods and state space approach. Fall semester. Lecture 3 hours. Prerequisites: 225, 248, 271, 272 with grades of Cor better. Corequisite: 329.

329 Control Systems Laboratory (1) CORE
Digital computer techniques for analysis, design and simulation of linear continuous time systems. Design project included. Fall semester. Laboratory 3 hours. Corequisite: 328.

331 Chemical Process Principles (3)
Quantitative relations of chemical reactions and physico-chemical processes. Calculations based on gases, vapors, humidity, and process material balances. Study of industrial processes involving thermophysics, thermochemistry, and heat balances. Formerly 431. Spring semester. Lecture 3 hours. Prerequisites: 303 with grade of Cor better, Chemistry 121.

340 Engineering Materials Science (3) CORE
Study of the science of solid materials, including metals, ceramics, plastics, and semiconductors. Nature and fundamental characteristics stressed. Atomic and macroscopic perspectives. Fall semester and summer. Lecture 3 hours. Prerequisites: Chemistry 121, Physics 231.

348 Kinematics & Dynamics of Machinery (3)
Kinematic analysis of plane mechanism linkages, analysis and synthesis of cam-follower mechanisms, and gear trains. An introduction to the synthesis of planar mechanisms -linkages and static and dynamic force and torque analysis of plane mechanisms with balancing using the computer. Spring semester. Lecture 3 hours. Prerequisites: 248 with grade of Cor better, Mathematics 255.

354 Work Measurement and Design (3)
Techniques for analysis and improvement of work methods; principles of motion economy, process charts, work sampling, standard data development, performance rating, predetermined time systems, and wage incentive systems. Emphasis on man-machine interfaces (ergonomics) and productivity improvements. Computer applications and design project included. Spring semester. Lecture 2 hours, laboratory 3 hours. Prerequisite 322 with a grade of Cor better or BMGT 211.

358 Manufacturing Processes (3)
In-depth study of the proper selection and sequencing of manufacturing processes including: foundry, hot and cold forming of metals, welding, heat treating, machine operations, thermal processing, and inspection. Prerequisite: 340 with grade of Cor better.

371 Electronic Circuits II Laboratory (1) CORE

372 Electronic Circuits II (3) CORE
Analog and digital electronics and electric machines. Semiconductors, transistor amplifiers. Digital signals and circuits, microprocessors. Electric power; polyphase circuits, magnetic circuits and rotating electric machines. Fall semester. Lecture 3 hours. Prerequisites: 271, 272 with grades of Cor better, Physics 232. Corequisite: 371.

373 Automatic Control Systems Analysis and Design (3)

375 Electromagnetic Fields and Waves (3)
Elementary fields and waves, static electric and magnetic fields; potential and vector fields; Gauss's Law, Ampere's Law; line integrals; vector calculus methods; Biot-Savart Law; time varying electric and magnetic fields; Maxwell's equations. Formerly 475. Spring semester. Lecture 3 hours. Prerequisites: 372 with grade of Cor better; Physics 232; Mathematics 245, 255.

377 Advanced Electronics (3)

378 Advanced Electronics Laboratory (1)
A series of projects in advanced electronics culminating in a major design project. Spring semester. Laboratory 3 hours. Corequisite: 377.

379 Dynamic Systems Laboratory (1)
Laboratory exercises in the simulation of dynamic systems and the design of automatic controls. Includes use of ACSL for simulation and design verification. Spring semester. Laboratory 3 hours. Corequisite: 373.

380 Introduction to Engineering Design (3) CORE
Introduction to the design process in engineering. Problem definition and concept generation. Characterization of design as a decision process with objectives, constraints, a model, and appropriate optimization technique. Economic and managerial considerations. Every semester. Lecture 3 hours. Prerequisites: completion of 36 hours in Engineering CORE, including 225 with grades of Cor better. Corequisite: 381.

381 Introduction to Engineering Design Laboratory (1) CORE
Personal computer applications laboratory in project planning, engineering economy, optimization, and decision making. Application to design project. Every semester. Laboratory 3 hours. Prerequisites: completion of 36 hours in Engineering Core, including 225 with grade of Cor better. Corequisite: 380.

390 Cooperative Seminar (2-4)
Seminar for developing, discussing, and reporting projects carried on as a portion of the cooperative work assignment. Written and oral report required. Every semester. Maximum of 15 cumulative hours. Course graded on satisfactory/no credit basis.

405 Heat and Mass Transfer (4)
Fundamental principles of heat, mass, and momentum transfer; application to macroscopic systems. Special emphasis on heat transfer by conduction and convection; analogy between heat and mass transfer. Design experience included. Fall semester. Lecture 4 hours. Prerequisite: 307 with grade of Cor better.

406 Thermal Science Laboratory (1)
Laboratory experiments involving heat conduction, convection, and thermal devices such as internal combustion engines, heat pumps, and heat exchangers. Design experience included. Fall semester. Laboratory 3 hours. Prerequisite: 307 with grade of Cor better. Corequisite: 405.

410, 411 Seminar (1, 0) CORE
Professional, ethical, and technical aspects of engineering. Fall semester, 410; spring semester, 411. Both seminars required. Course graded on a satisfactory/no credit basis. Normally taken as corequisite with 493, 494.

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. Spring semester. Lecture 3 hours. Prerequisites: 380, 432, 435 with grades of Cor better. 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. Lecture 3 hours. Prerequisites: 331, 405 with grades of Cor better.

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. Lecture 3 hours. Prerequisites: 331, 405 with grades of Cor better, Chemistry 371.
435 Chemical Processes Laboratory (1)
Laboratory exercises in chemical operations, such as binary distillation, batch distillation, stripping, rectification, flooding and gas absorption. Design projects. Fall semester. Laboratory 3 hours. Prerequisite: 331 with grade of C or better. Corequisite: 432.

436 Thermal Component Design (3)
Design of individual components of thermal systems. Economic tradeoffs 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: 307; 331, 380, 405 with grades of C or better.

438 Advanced Fluid Dynamics (4)
Equations of continuity, momentum, and energy in three-dimensional vector formulation. Reduction to two- and one-dimensional flows for cases of engineering interest. Applications to students' areas of specialty. Laboratory work included. Individual design projects included. Fall semester. Lecture 4 hours. Prerequisite: 307 with grade of C or better.

439 Internal Combustion Engines (4)
Thermochemical phenomena in internal combustion engines. Topics include testing techniques, combustion, detonation, carburetion, equilibrium, and disassociation. Ideal and real fluid behavior in analysis of internal combustion engines. Experimental verification in the laboratory. Design experience included. Spring semester. Lecture 3 hours; laboratory 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, brakes, clutches, chains, belts, welds and rivets, lubrication of journal, ball and roller bearings, and spur, helical, bevel, and worm gears. Spring semester. Lecture 3 hours. Prerequisites: 248, 348 with grades of C or better.

444 Applied Elasticity (3)

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: 248, 348 with grades of C or better; Mathematics 245, 255.

446 Advanced Mechanics of Materials (3)
Statically indeterminate structures; introduction to theory of elasticity; special topics in mechanics of materials. Design experience included. Fall semester. Lecture 3 hours. Prerequisites: 246 with grade of C or better; Mathematics 245, 255.

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: 380 with grade of C or better.

452 Engineering Economy (3)
Economic decisionmaking for engineering systems. Choice of alternatives by equivalent annual cost, rate-of-return, present worth, and benefit-cost methods. Tax influences, statistical decision-making, replacement policy. Fall semester. Lecture 3 hours. Prerequisites: 380 with grade of C or better or consent of instructor; Mathematics 136 or 160.

455 Industrial Safety Engineering (3)
History, accident cost analysis, methods, and techniques developed for reducing and preventing accidents in industry, motivating safety, plant inspection, guarding of equipment, health hazards and their control, accident records and reports, employee selection, placement and counseling. Primarily elective for B.S. in engineering management. On demand. Lecture 3 hours.

456 Computer Integrated Manufacturing Systems (3)
Basic concepts of modern manufacturing and related control systems. Techniques include flow-line production, numerical control, industrial robots, CAM, group technology, and flexible manufacturing systems. Design applications. On demand. Lecture 3 hours; laboratory work included. Prerequisites: 225, 322 with grades of C or better; Mathematics 160 or equivalent.

457 Quality Control (3)
Detailed study of theory and methods for the design and analysis of quality systems. Product specifications, process control, acceptance inspection, other means of assurance. Spring semester. Lecture 3 hours; laboratory work and design experience included. Prerequisite: 322 with grade of C or better or Management 211.

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. On demand. Lecture 3 hours.

460 Structural Engineering Analysis and Design (3)
Analysis and design of framed structures due to moving and fixed loads; influence lines; deflections of beams and trusses. Analysis of statically indeterminant beams, trusses, bends, and frames. Fall semester. Lecture 3 hours. Prerequisites: 246 with grade of C or better; Mathematics 245, 255, Corequisite: 380.

462 Soil Mechanics, Foundations and Substructures (4)
Physical properties of soils, foundation explorations, and principles of design of dry and subaqueous foundations. Fall semester. Lecture 4 hours, laboratory experience included. Prerequisites: 246, 307 with grades of C or better.

465 Structural Engineering Design (4)
Design criteria in structures. Behavior of steel structures and reinforced concrete columns and beams. AISC and ACI codes. Design project included. Spring semester. Lecture 4 hours. Prerequisite: 460 with grade of C or better.

468 Elementary Structural Matrix Methods (3)
Review of matrix algebra and vectors, development of member stiffness and flexibility matrices. Design project included. Spring semester. Lecture 3 hours. Prerequisite: 444 or 445 or 460 with grade of C or better.

470 Microprocessors and Digital Logic (3)
Design of combinational and sequential electronic circuits. Practical microprocessor principles: structure, programming and interfacing. Design of electronic systems treating the microprocessor as a system component. Fall semester. Lecture 2 hours. Projects 3 hours. Prerequisites: 377, 378 with grades of C or better.

471 Electrical Machinery (3)

472 Electrical Energy Systems (4)
Power systems component modeling; transmission lines, machines, transformers. Load flow analysis, system dispatching and control. Fault analysis, symmetrical components, system protection. Transient stability. Design projects included. Spring semester. Lecture 4 hours. Prerequisite: 471 with grade of C or better.

473 Communication Systems (3)
Definitions and basic concepts of analog and digital modulation techniques. Fourier and Laplace transform techniques used to study transmission of signals through linear filters and time-bandwidth relationships. Amplitude, frequency, and pulse modulation techniques described and analyzed. Periodic sampling and the Nyquist sampling criterion. Fall semester. Lecture 3 hours. Prerequisites: 322, 325 with grades of C or better.
477 Electronic Instrumentation (4)
Development of instrumentation systems to gather design data and to verify performance. Characteristics of typical sensors. Signal conditioning techniques and circuits. Specification and design of systems to acquire and condition data from an array of sensors. Laboratory work and design projects included. Fall semester. 
Lecture 4 hours. Prerequisites: 377, 378 with grades of Cor better.

478 Sampled Data and Nonlinear Control Systems (4)
Analysis and design of automatic control systems operating on discontinuous data and depending on either incremental or sampled continuous processes. Consideration of nonlinear systems analysis and design. Design project. Spring semester. Lecture 4 hours. Prerequisites: 373, 379 with grades of Cor better.

479 Electrical Machinery Laboratory (1)
Experimental study of transformer and machine behavior. Design project included. Fall semester. Laboratory 3 hours. Corequisite: 471 •

491r Special Topics in Engineering (1-4)
Advanced treatment of a specialized area in engineering, varying from term to term. On demand. Prerequisite: approval of instructor and dean.

493 Senior Design Experience I (3) CORE
First semester of interdisciplinary group design project. Definition of engineering problem, completion of feasibility study, and preliminary design. Oral and written presentation of progress and results. Formerly 490r. Every semester. Prerequisites: 380 with grade of Cor better, completion of aRhwer division engineering courses, and senior standing. Corequisite: 410 or 411.

494 Senior Design Experience II (4) CORE
Second semester of interdisciplinary group design project. Completion of detailed and final design phases of engineering problem initiated in 493, including a model. To be completed in sequence. Oral and written presentation of progress and results. Formerly 490r. Every semester. Prerequisites: 493 with grade of C or better. Corequisites: 410 or 411.

495r Departmental Honors (1-3 hours per term, 4 hours for the two terms)
On demand. See "Departmental Honors," page 27•
### Engineering (B.S.E.) Group A Cooperative Schedule

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<thead>
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<th>Fall</th>
<th>Spring</th>
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|       | Engineering 225 3 |           |               |
|       | Engineering 246 3 |           |               |
|       | Engineering 247 1 |           |               |
|       | Engineering 390 2 |           |               |
|       | Mathematics 245 3 |           |               |
|       | Physics 231 4     |           |               |
|       | Physical education activity 1 | WORK |               |
|       | ~               |           | ~15          |

| **SECOND YEAR** | Engineering 271 1 |           |               |
|       | Engineering 272 3 |           |               |
|       | Engineering 307 4 |           |               |
|       | Engineering elective 3 | WORK |               |
|       | Engineering 390 2 |           |               |
|       | Physics 232 4     |           |               |
|       | ~               |           | ~15          |

| **THIRD YEAR** | Engineering 328 3 |           |               |
|       | Engineering 329 1 |           |               |
|       | Engineering 340 3 |           |               |
|       | Engineering 371 1 |           |               |
|       | Engineering 372 3 |           |               |
|       | Engineering 390 2 |           |               |
|       | General Education Category C 3 | WORK |               |
|       | ~16             |           | ~15          |

|       | Engineering 410 1 |           |               |
|       | Engineering 493 3 |           |               |
|       | Engineering Specialty 3 | WORK |               |
|       | Engineering Specialty 3 | WORK |               |
|       | Engineering Specialty 4 |         |               |
|       | General Ed. Category B 3 |         |               |
|       | General Ed. Category G 3 |         |               |
|       | ~               |           | ~14          |

| **FIFTH YEAR** | Engineering 411 0 |           |               |
|       | Engineering 494 4 |           |               |
|       | Engineering Specialty 3 |         |               |
|       | Engineering Specialty 4 |         |               |
|       | General Ed. Category G 3 |         |               |
|       | ~               |           | ~15          |

### Engineering (B.S.E.) Group B Cooperative Schedule

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|       | Engineering 246 3 |           |               |
|       | Engineering 247 1 |           |               |
|       | Engineering 328 3 |           |               |
|       | Engineering 329 1 |           |               |
|       | Engineering 340 3 |           |               |
|       | Engineering 371 1 |           |               |
|       | Engineering 372 3 |           |               |
|       | Engineering 390 2 |           |               |
|       | General Education Category C 3 | WORK |               |
|       | ~               |           | ~15          |

| **SECOND YEAR** | Engineering 271 1 |           |               |
|       | Engineering 272 3 |           |               |
|       | Engineering 307 4 |           |               |
|       | Engineering elective 3 | WORK |               |
|       | Engineering 390 2 |           |               |
|       | Physics 232 4     |           |               |
|       | ~               |           | ~15          |

| **THIRD YEAR** | Engineering 410 1 |           |               |
|       | Engineering 493 3 |           |               |
|       | Engineering Specialty 3 | WORK |               |
|       | Engineering Specialty 3 | WORK |               |
|       | Engineering Specialty 4 |         |               |
|       | General Ed. Category B 3 |         |               |
|       | General Ed. Category G 3 |         |               |
|       | ~               |           | ~14          |

|       | Engineering 411 0 |           |               |
|       | Engineering 494 4 |           |               |
|       | Engineering Specialty 3 |         |               |
|       | Engineering Specialty 4 |         |               |
|       | General Ed. Category G 3 |         |               |
|       | ~               |           | ~15          |

| **FOURTH YEAR** | Engineering 328 3 |           |               |
|       | Engineering 329 1 |           |               |
|       | Engineering 340 3 |           |               |
|       | Engineering 371 1 |           |               |
|       | Engineering 372 3 |           |               |
|       | Engineering 390 2 |           |               |
|       | General Education Category C 3 | WORK |               |
|       | ~               |           | ~15          |

| **FIFTH YEAR** | Engineering 410 1 |           |               |
|       | Engineering 493 3 |           |               |
|       | Engineering Specialty 3 |         |               |
|       | Engineering Specialty 3 |         |               |
|       | Engineering Specialty 4 |         |               |
|       | General Ed. Category G 3 |         |               |
|       | ~               |           | ~14          |
Computer Science

The Computer Science Department offers a B.S. degree in computer science. Majors take at least 45-hour sequence of computer science courses and take additional courses in an area of concentration. The concentration of study augments the computer science courses and is a specialization in which the student can apply his or her knowledge of computers. Four concentrations are available: information systems, scientific applications, systems architecture, and topical.


**General Education** (see pages 00-00 for list of approved courses)

- **Category A**: 2 approved courses in written communication in the English language (6 hours)
- **Category B**: 3 approved courses: one from humanities, one from fine arts, and one from either (3 hours each)
- **Category C**: 2 approved behavioral or social science courses (6 hours)
- **Category D**: 1 approved physical or natural science course with laboratory (4 hours)
- **Category E**: 3 approved behavioral or social science courses (6 hours)
- **Category F**: 1 approved mathematics course (3 hours; approved related course below will apply)
- **Category G**: 1 approved perspectives course (3 hours)

The Freshman Seminar

Health and Physical Education 021 plus one additional semester physical education activity

**Major and related courses**

Computer Science core courses: Computer Science 102, 121, 122, 201, 251, 252, 301, 312, 320, 335, 350, 460, 490

6 hours of upper division (300 or 400 level) computer science electives

English 277 or 278

Additional course requirements for each concentration are:

1. **Information Systems**
   - Mathematics F150, 160, 303, 307; Accounting 201, 202, 305; Management 311, 356; Computer Science 280
   - Economics C101 and C102

2. **Scientific Applications**
   - Mathematics F150, 160, 212, 245, 255, 303, 308 and one of the following: 412, 414, 418, 428, 445 or 460; either Engineering 322, or Mathematics 407 and Mathematics 408; two of the following sequences: Biology D121 and 122 or Geology D111 and 112, Chemistry D121 and 122, Physics D103 and 104 or D230 and 231

3. **Systems Architecture**
   - Mathematics F150, 160, 212, 245, 255, 303; Physics D230, 231; Engineering 271, 272, 371, 372; either Engineering 322, or Mathematics 407 and Mathematics 408

4. **Topical**
   - Mathematics 150, 160, 303, 307; 15 hours of approved courses in an area chosen by the student with the advice and consent of a standing committee made up of faculty in computer science and faculty in the chosen area. Enrollment in this program is limited to students who have demonstrated exceptional ability or accomplishment. Programs developed under this option must be substantially different from the other listed concentrations. The approved program should be filed with the Records Office no later than the first semester of the student’s senior year and cannot be changed without the written approval of the student’s standing committee.

All majors must attain a minimum grade of C in all computer science core courses as a condition for graduation.

2.0 average required in all computer science courses excluding 110 and 111

Minimum of 30 hours of 300 and 400 level courses

Electives to complete 128 hours

**Typical courses of study in computer science (B.S.)**

**Computer science (B.S.): information systems concentration**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>FRESHMAN</td>
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<td>Computer Science 102</td>
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<tr>
<td>Physical Education 021</td>
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<td><strong>Total</strong></td>
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**SOPHOMORE**

| Computer Science 201 | 3 | Computer Science 252 | 3 |
| Computer Science 251 | 3 | Computer Science 312 | 3 |
| Mathematics 303 | 3 | B Accounting 202 | 3 |
| General Education Category B | 3 | Mathematics 307 | 3 |
| Economics C101 | 3 | English 277 or 278 | 3 |
| **Total** | 18 | **Total** | 18 |

**JUNIOR**

| Computer Science 301 | 3 | Computer Science 350 | 3 |
| Computer Science 320 | 3 | Computer Science 335 | 3 |
| B Accounting 305 | 3 | Management 311 | 3 |
| General Education Category B | 3 | Elective | 3 |
| General Education Category D | 4 | General Education Category G | 3 |
| **Total** | 16 | **Total** | 15 |

**SENIOR**

| B Management 356 | 3 | Computer Science 300-400 level elective | 3 |
| Computer Science 300-400 level elective | 3 | Computer Science 460 | 3 |
| Electives | 6 | Computer Science 490 | 3 |
| Electives | 6 | **Total** | 15 |
| **Total** | 12 | **Total** | 15 |

**TOTAL HOURS** 128

**Computer science (B.S.): scientific applications concentration**

<table>
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**SOPHOMORE**

| Computer Science 201 | 3 | Computer Science 252 | 3 |
| Computer Science 251 | 3 | Computer Science 312 | 3 |
| Mathematics 245 | 3 | Mathematics 255 | 3 |
| Mathematics 303 | 3 | Science Elective | 3 |
| Science Elective | 4 | General Education Category B | 3 |
| **Total** | 16 | **Total** | 16 |
### JUNIOR

<table>
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### TOTAL HOURS 128

Computer science (B.S.) systems architecture concentration

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<th>Second Semester</th>
</tr>
</thead>
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### TOTAL HOURS 128

Computer science (B.S.) topical concentration

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### JUNIOR

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### TOTAL HOURS 128

Computer science (B.S.) systems topical concentration

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### COMPUTER SCIENCE COURSES

#### 102 Introduction to Computing (3)

Overview of the electronic computer's history, technology, capabilities and limitations. An appreciation of the role of computers in society is developed and computer use is surveyed. Dedicated recitation sections concentrate on developing practical application skills in various disciplines. Lecture 2 hours, recitation 2 hours. Credit not allowed in both CPSC 102 and 110. Prerequisites: Placement Level 20 or Mathematics 106.

#### 110 Computer Information Systems I (3)

Survey of computer applications in business. Introduction to the use of microcomputer hardware and software in information systems. Fundamentals of systems analysis and design. Ethical and social issues. Credit not allowed in both CPSC 102 and 110. Prerequisites: Placement Level 20 or Math 106 with a grade of C or better. Formerly 210.

#### 111 Computer Information Systems II (3)

A study of the analysis, design, and implementation of business computer systems; system life cycle models; methods and techniques for systems development; advanced concepts in microcomputer application packages; introduction to a programming language such as BASIC. Every semester. Prerequisite: 110. Formerly 211.

#### 118 Computer Programming with FORTRAN (3)

An introduction to the concepts and techniques of computer science. Emphasis is placed on the design and implementation of efficient algorithms using the FORTRAN language. Every semester. Prerequisite: Mathematics 135 or 145.

#### 121 Computer Programming I (3)

An introduction to digital computing techniques using a higher level language such as Pascal or PL/I. Algorithms, flowcharting, programming, and documentation of numerical and non-numerical problems. Introduction to computer science terminology and concepts such as computer hardware and computer application areas. Every semester. Prerequisite: 4 years of college preparatory mathematics; Math Placement Score of 30 or better or Math 135 or Math 145.
122 Computer Programming II (3)
Continued development of programming style using abstract data structures and top down design. Debugging and testing of large programs. Emphasis on algorithm development: Strings, stacks, queues and list processing. Recursion. Discussion of compilation techniques. Every semester. Prerequisite: 121 with a grade of C or better.

199r Special Projects (1-4)
Individual or group projects. On demand. Maximum credit 4 hours.

201 Assembly Language Programming (3)
Introduction to machine language, symbolic coding and assemblers; debugging, reading dumps, macros, internal and external subroutines; input and output operations; program design and documentation. Fall semester. Prerequisite: 122 with a grade of C or better.

231 Computer Problems in the Sciences (3)
Computer algorithms, and the complete preparation and solution of selected mathematics and science problems. Solutions of equations; interpolation and approximations; sequences and series; numerical differentiation and integration; numerical solution of initial value problems in differential equations. On demand. Pre- or Corequisite: Mathematics 245.

251 Command and Job Control Languages (3)
Introduction to operating systems. The compile, link edit, and execute process. IBM job control language. Interactive command languages. Cataloged procedures. Load modules and libraries. Linking object modules. Principally, a study of the IBM environment with comparisons to and limited discussion of other mainframe and small computer operating systems. Fall semesters. Prerequisite: 122 or 280 with grade of C or better.

252 Introduction to Computer Organization (3)
Number representation and arithmetic, basic digital devices and their Boolean representations; introduction to logical circuit design and simplification using Boolean algebra and Karnaugh maps; architecture and programming of a simple microprocessor; survey of 8-, 16- and 32 bit microprocessor architectures. Spring semester. Prerequisite: 201 with a grade of C or better.

280 Accelerated COBOL (3)
A study of standard and advanced methods of computer programming in business applications; emphasis on the organization and processing of direct access storage device files using COBOL. Spring semester. Prerequisite: 122 with grade of C or better.

301 Systems Programming (3)
Structure and design of programs whose inputs are programs. Assemblers, interpreters, compilers, loaders and supervisors. Introduction to formal programming languages, syntactic descriptions, symbolic functions and manipulations. Fall semester and summer. Prerequisite: 201 and 312 with grades of C or better.

312 Data Structures and Algorithms (3)
A study of data structures and the algorithms used to process them. Algorithms for handling strings, stacks, lists, trees and graphs. Sorting and searching techniques. Recursive and non-recursive algorithms. Efficiency considerations. Spring and Summer semesters. Prerequisites: 122 and Mathematics 303 with grades of C or better.

320 Operating Systems (3)
Familiarization with the major concepts of operating system principles; procedure activation, storage allocation, system structure, performance evaluation, memory management, process management, security, and recovery procedures. Fall semester and summer. Prerequisite: 251, 252 and 312 with grades of C or better.

335 File Processing (3)
A study of disk and tape file organizations. Creation of sequential, direct, and indexed sequential files. Hashing techniques and address overflow. Primary and secondary key usage. Inverted and linked list files. Binary trees, B-trees, B+-trees, and AVL trees. Spring semester. Prerequisite: 312 with grade of C or better.

350 Software Engineering I (3)
A study of systems analysis and design aspects of software engineering to include information systems and the systems analyst, tools and techniques of systems analysis, and the life cycle concept of system development. Spring semester. Prerequisites: 122 or 280; English 277 or 278; with grades of C or better.

410 Programming Language Structures (3)
The study of a major computer language with a structure different from FORTRAN or Pascal, or a study of advanced features such as extensibility, concurrence, or multitasking. On demand. Prerequisites: 312 with grade of C or better.

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. Fall semester. Prerequisite: 312 with grade of C or better.

430 Topics in Simulations (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 such as GPSS and GAS; comparison of simulation languages. On demand. Prerequisites: 312 with grade of C or better and an approved sequence in statistics.

435 Data Base Management Systems (3)
Concepts and methods in the definition and management of data bases; physical and logical data base design; the relational model; programming in a data base environment; topics in data base security, integrity, recovery and concurrence. Fall semester. Prerequisite: 251 and 312 with grades of C or better.

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, and a study of P and NP. Sping semester. Prerequisites: 121 with grade of C or better and Mathematics 303.

450 Software Engineering II (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. Fall semester. Prerequisites: 301 and 350 with grades of C or better.

460 Computer Architecture (3)
An advanced course in computer architecture. Topics include classical uniprocessor architecture, computer arithmetic, instruction sets, control systems, I/O operations, memory hierarchies, cache and virtual memory mechanisms, basic principles of multiprocessing, microprogramming, serial and pipelined arithmetic processors, and RISC architecture. Sping semester and summer. Prerequisite: 320 with grade of C or better.

499r Group Software Project (3)
A group design effort which will concentrate on developing a major software project. Oral and written presentations of progress and final results required. Every semester. Prerequisites: 320, 350 with grades of C or better, and senior standing.

495 r Departmental Honors (1-3 hours per term, 4 hours for the two terms)

497r Research (1-4)
On demand.

498r Individual Studies (1-4)
On demand.

499r Group Studies (1-4)
On demand.
Other Educational and Public Service Units

Adult Services Center
Erna Fella, Coordinator
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 students who work full time. The center provides individualized advisement, registration, fee collection, and other University services for adult part-time students. Workshops and seminars related to educational opportunities and transitions are conducted regularly for individuals currently enrolled or individuals who are interested in either entering or returning to college.

Tutoring, through Student Support Services, is available in the Adult Services Center in the evenings during the spring and fall terms.

College Access Program
Patricia Snowden, Director
The College Access Program (CAP) provides support services for college-level, learning disabled students at UTC, which includes academic advisement, tutoring, career and life planning, career advisement, individual and group counseling, social skills development, word processing skills, untimed tests, college survival skills, psychological/academic testing, and university orientation.

The student must have certified documentation of the learning disability and should apply for admission to the College Access Program as a first step for enrollment to UTC. All CAP information is confidential and students participate in regular university coursework with the guidance, assistance and encouragement of CAP staff. For more information, please come by the CAP office, located at 110 Frist Hall or call 615-755-4006. Students must also be approved for admission to UTC. Undergraduate applications for admission may be obtained from the CAP office or by writing the Office of Admissions at UTC.

Cooperative Education
Hugh Prevost, Director
The Cooperative Education Program is an innovative education program that allows students from all university curricula to combine classroom studies with paid, career-related preprofessional work experience. UTC students are placed in alternating semester jobs which require them to work full-time one semester and attend school full-time the next semester, or in parallel work assignments which require students to work 15-25 hours per week and attend school full-time or part-time each semester.

Students may enroll in the program anytime after they have been accepted into the University. Students may begin work, however, only after they have completed their freshman course work. When placed in a co-op position, students must register with their major department for course 001 at the beginning of each semester they are employed. Only students who have advance approval of the Office of Cooperative Education will be enrolled in this course.

Students interested in exploring the opportunities offered by the Cooperative Education Program should come by 233 University Center or call 615/755-4735 to make an appointment to see one of the Co-op Coordinators.
**Individualized Education Program**

The Individualized Education Program (IEP) was begun to assist adult students who have not completed the requirements for a baccalaureate degree and who wish to enter or return to the University after working for several years. The program is designed to assist those students in making the transition back into college and to act as the coordinating agent for the process of awarding general elective credit for the student's work experience, non-collegiate, in-service training experiences, non-collegiate in-service training experiences, or professional certification. Since being accepted as an official unit of the University in 1972, the program has awarded more than 1,000 students IEP credit from the University's participating departments. "Students should be aware that not all of the University departments award IEP credit."

Students interested in pursuing IEP elective credit are encouraged to contact the Office of Cooperative Education (615-755-4735) or come by 233 University Center to discuss their college plans with the IEP Coordinator. During this initial visit, students will be given a detailed explanation of the procedures to follow to complete the IEP process. They will also be given an IEP application to complete and submit with work history and training documentation. This portfolio will be reviewed by the faculty of the petitioned department and all IEP credit will be awarded on the individual merit of their portfolio.

Student will pay a portfolio/registration fee of $50.00 and a fee based on the current University charges for each hour of IEP credit hours that they are awarded.

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**Division of Continuing Education and Public Service**

Marilyn Willis, *Interim Dean*

The Division of Continuing Education and Public Service develops, coordinates, and supervises continuing education, public service programs, and conferences offered by The University of Tennessee at Chattanooga.

**Off-campus Credit Courses**

The division works with the academic deans, directors, and department heads of the University to provide a balanced schedule of credit course offerings to meet the needs of individuals who wish to complete degree programs at an off-campus location. Off-campus UTC credit courses have been offered at numerous location including Cleveland, Athens and downtown Chattanooga. Persons interested in having UTC credit courses taught at an off-campus location should contact the Division of Continuing Education and Public Service for further information.

**Noncredit Courses**

Noncredit courses dealing with a wide variety of topics and interests are offered through the Division of Continuing Education and Public Service and are open to the general public. These noncredit courses are divided into four major categories: professional development, arts and sciences, personal interest, and youth development. Programs on management development, music, art, literature, foreign languages, recreation, engineering, home economics, and consumer education are offered throughout the year. Noncredit course formats range from one-day workshops or seminars to courses conducted during the day or evening at a variety of campus and off-campus locations.

Subject to the approval of the academic deans and department head, participation in many noncredit courses is recognized by the awarding of individual continuing education units (CEUs). One CEU corresponds to ten hours of participation in an approved program and is particularly valuable to persons desiring professional development and in-service training. Individual transcripts recording CEUs are maintained in the UTC Division of Continuing Education and Public Service.

The professional staff of the Division of Continuing Education and Public Service welcomes suggestions for new and different noncredit courses. Special emphasis is placed on designing programs that meet the expressed needs of the greater Chattanooga area population and on delivering these courses at times and locations most convenient for those who indicate an interest.

**Conferences and Professional Services**

As part of the division's community service and professional development activities, the staff provides assistance to business, industry, government, social service agencies, and professional organizations for the purpose of developing and coordinating conferences and institutes which focus on topics of concern to the particular group. Groups as small as ten or those numbering five hundred or more can be accommodated in the University's varied facilities. If requested, CEUs (as discussed above) may be awarded to conference or institute participants.

**In-plant Service**

The Division of Continuing Education and Public Service draws on the wide and diverse resources of UTC's professional faculty to offer both credit and noncredit programs to business, industry, and government in Chattanooga and the surrounding areas. Most of these programs are tailored to the specific needs of the sponsoring company and are carried out in the company's facilities. The division also assists in making arrangements for faculty members to act as consultants whose task is to define problem areas and design courses which respond to particular technical or training needs.

**Senior Citizens and Disabled Persons**

**Free Audit Program**

Persons who are over 60 years of age or totally disabled may audit courses at The University of Tennessee at Chattanooga without charge in any class where there is space available beyond that needed for students who pay fees. Some courses which have special prerequisites or conditions are not available under this option. In addition, persons who are over 65 or totally disabled may, if admitted, enroll in credit courses for a fee of $7.50 per semester hour to a maximum of $75 per semester. The Division of Continuing Education and Public Service assists the senior citizen or disabled individual by providing orientation to the campus, completing admission forms, and registering the individual for the course(s) selected. Persons interested in participating should contact the Division of Continuing Education and Public Service rather than applying for admission at the UTC Admissions Office.
Other Services
Additional services provided by the Division of Continuing Education and Public service include: 1) furthering public awareness of University activities through the UTC radio program "On Campus"; 2) representing The University of Tennessee Statewide Division of Continuing Education in providing correspondence, instruction; 3) arranging for courses offered by other UT campuses to be taught at UTC; 4) providing faculty and facilities for programs conducted by The University of Tennessee's Institute for Public Service; 5) participating in the U.S. Army Project Ahead Program; and 6) coordinating the Listener's Program whereby individuals 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.

Division of Student Support Services/Upward Bound

Booker Scruggs, II, Acting Director
The Division of Student Support Services, located in 212 Race Hall, provides free academic support services to all eligible UTC students. Specific services include:

Writing Skills — Small group and individual tutoring sessions in grammar, composition, and word processing are offered, with particular emphasis on teaching students the skills of revising and editing their own papers.

Reading Improvement — Lab classes assist students in improving reading strategies and rate, vocabulary usage, and spelling ability.

Tutoring — Graduate and undergraduate students with at least a 3.0 GPA provide individual tutoring in academic subjects on the freshman and sophomore levels.

Special Workshops — A schedule of study skills workshops for students on academic probation is offered each semester. In addition, reading and writing workshops are offered to students who wish to prepare for graduate school enrollment.

Upward Bound is a college preparatory program which provides eligible high school students with academic and cultural activities that improve their chances of entering and successfully completing postsecondary education. Students are recommended by their high school guidance counselors and are then selected by the Upward Bound staff. Upward Bound offices are located in 212 Race Hall.

Library
Joseph A. Jackson, Dean
The Lupton Library's holdings include approximately 1,400,000 pieces of material, of which more than 395,000 are books and periodicals. Annually, the Lupton Library subscribes to approximately 3,000 periodicals. In addition, students, staff, and faculty may use the collections and services of all libraries of The University of Tennessee system.

The general collections for support of the graduate programs are augmented by a variety of special collections which are also housed in the main library. Audiovisual equipment and materials, including video cassettes, microforms, films, curriculum resources, and archives are also located in the library.

Library Fines
Books borrowed from the library's regular collections are subject to an overdue fine of 20 cents per day up to a limit of $5 for each book. For lost books borrowers are assessed the replacement cost for each book, which includes the list purchase price of the book plus a processing charge of $15.

Reserve items are subject to an overdue fine of 20 cents per hour up to a limit of $5 for each item.

If fines for overdue books and charges for lost books are not paid as required, the borrowers will be blocked from use of the library and not permitted by the business office and registrar (on this or other campuses of the University) either to register or to receive course credits and transcripts until the outstanding obligations are fully cleared.

WUTC
John McCormack, Station Manager
WUTC is a 50,000 watt public radio station originating its programming from the Earl Winger Broadcast Studio located in Cadek Hall. Included are jazz, news and other public radio programming.

WUTC, FM 88.1, provides a 24-hour-a-day broadcasting service. It is an affiliate of the National Public Radio Network and of the American Public Radio Network.
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Paul Ramsey, Guerry Professor Emeritus, English, Ph.D., University of Minnesota.
Hugh Stay, Professor Emerita, Spanish, Ph.D., University of North Carolina.
Dorothy Hackett Ward, Guerry Professor Emerita, Theatre and Speech, M.F.A., Yale University.

Instructorial Staff

The date after each name indicates the year of appointment.

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George Coleman Connor, Guerry Professor Emeritus, English, M.A., Middlebury College.
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Myron Stanley McCoy, Guerry Professor Emeritus, Physics, Ph.D., Ohio State University.
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Vijay K. Rathna, M.S., Punjab University, India.
James W. Rogers Sr., B.S., University of Chattanooga.
Frank W. Smith, B.E.E., Georgia Institute of Technology.

Computer Science
Jonathan Asuru, Assistant Professor, Ph.D., Oklahoma State University.
Alexander Bykat, Professor, Ph.D., University of London.
B.C. Day, Assistant Professor, M.P.A., American University.
Joseph Kizza, Assistant Professor, Ph.D., University of Nebraska.
Elise Lewis, Instructor, M.S., The University of Tennessee at Chattanooga.
John F. Nixon, Assistant Professor, Ph.D., Vanderbilt University.
Janet Smith, Assistant Professor, Ph.D., University of Georgia.
Clifton Willis Smullen III, Associate Professor, Ph.D., Dartmouth College.
Stephanie A. Smullen, Associate Professor, Ph.D., University of Kentucky.
Jack Thompson, Professor, Department Head, Ph.D., Texas A & M University.

Adjunct Computer Science
David Thomas, M.S., University of Tennessee, Knoxville.
ENDOWED FUNDS

Through the years many persons have made generous gifts to establish endowed funds for various purposes. The University would like to recognize and thank them once again by publishing their names here.

Scholarships

Julius Ochs Adler Scholarship: Established in July 1956 by an anonymous donor in memory of the distinguished citizen who was associated with Adolph S. Ochs in the management of The Chattanooga Times.

Alumni Centennial Scholarships: Established during the Centennial Campaign, four area scholarship endowments were funded by friends and alumni of UTC living in the Riverview and Lookout Mountain residential sections of Chattanooga and in both Nashville and Cleveland. The Cleveland scholarship was named in memory of Dickie Norton, UTC alumnus, who served as chair of the effort before his death in 1988. Preference for each scholarship will be given to students residing in the particular area.

Marvin L. Anthony Scholarship: Established in 1965 by Chicago banker the 1926 chemistry graduate and member of Phi Delta Sigma, for students of business or chemistry.

Marrirose Arendale Scholarship: Established in 1990 through the estate of Miss Arendale, a 1952 history graduate, and former economics professor at Chattanooga State Technical Community College.

Clayton Arnold Teacher Training Scholarships: Established in 1965 by Clayton Arnold, who served as postmaster at Thompson Station, Tenn., for many years and had a strong interest in the education of teachers. Arnold, who died in 1987, gave the University gifts in excess of $1 million and felt that his gifts would do the most good if made for the training of teachers in public education. UTC receives a portion of the proceeds from the Arnold Endowment for students in the School of Education.

Authors and Artists Club Scholarship: Established in 1988 by the Authors and Artists Club, to be awarded on a rotating basis for students with a demonstrated interest in creative writing, art, music, and theatre.

Steve Baras Memorial Scholarship Fund: Established in 1982 by the family of Steve Baras, a graduate of UTC and a past member of the varsity tennis team, for students who are members of the tennis team or majoring in business.

James William (Bill) Barker Scholarship: Established in 1960 by friends and fraternity brothers of the Pi Kappa Alpha who died four years after his graduation in 1949.

Creed F. Bates Scholarship: Established in 1976 by more than 300 individual gifts from friends, former students, and citizens of the Chattanooga community in honor of Creed Fletcher Bates, student, teacher, principal, University trustee, and community leader, to be awarded annually to a qualified and deserving student from the local area.

Alvin G. and Sally M. Beaman Scholarships: Established in 1990 by the Beamans, Nashvillians representing the Beaman Companies, at three UT campuses: Chattanooga, Knoxville, and Martin. Preference is given to the children or grandchildren of Beaman Bottling Company or Shelbyville Bottling employees or former employees. Awards are based on academic achievement and financial need.


M.W. Brabham Scholarship: Established in 1963 by the Brabham-Martin Bible Class of the Centenary Methodist Church in memory of its esteemed member, the longtime executive secretary of the Chattanooga Community Chest.

David M. Brammer Memorial Scholarship: Established in the name of the Sigma Chi fraternity brother who died in 1983, this scholarship was established with the contributions of friends and family and is available to any Sigma Chi fraternity member who holds a 3.0 GPA and who gives sufficient service to the local fraternity.

Buster Brown Apparel Scholarships: Established in 1990 by Buster Brown Apparel Inc. in order to provide scholarship assistance for employees of Buster Brown and Weather Tamer Inc. and their children.

Dr. Jeffrey L. Brown Memorial Scholarship: Established in 1981 by friends and family of Dr. Jeffrey L. Brown who at the time of his death was associate professor of sociology and anthropology and director of the University's Institute of Archaeology. The scholarship is based on merit and is given to a student who will further advance the academic ideals of conservation and preservation of man's past.

Margaret Whiteside Buhrman Scholarship: Established in 1978 by friends in honor and recognition of her 46 years of distinguished service to the students, faculty, and staff of the University, for deserving students wishing to attend UTC with preference for students majoring in English.

Campbell and Associates Scholarships: Established in 1987 as a centennial gift by John F. Germ, president and chief executive officer of Campbell and Associates, Engineering Consultants. Mr. Germ, a UTK graduate, has served on UTC's Chancellor’s Roundtable and was responsible in the design and construction of UTC's Arena and the Fine Arts Center.

Gillie Queener Carter Memorial Scholarship: Established in 1979 by Professor Emeritus Roland D. Carter and his children, Roland D. Carter Jr. and Yvonne Carter Gardenhire, in memory of Gillie Queener Carter who taught in the Chattanooga public school system for many years, to be awarded to a student majoring in special education.

Morton Neal Center Athletic Scholarship: Established in 1978 by Center, business and civic leader, to be awarded to a qualified and deserving student athlete.

Chattanooga Coke and Chemical Scholarship: Established in 1979 during the Tennessee Tomorrow Campaign in celebration of the company's 60th year of operation. The award goes to a qualified undergraduate student.
Walter W. Colby Memorial Scholarships: Established in 1982 by Benjamin W. Colby, a UC alumnum, in memory of his father, an early resident of Walden’s Ridge (1878). Needy and worthy students from the Hamilton and Sequatchie County areas of Walden’s Ridge are given preference.

Louise G. Currey Environmental Studies Scholarship: Established in 1990 by her children, Bradley Currey Jr., Louise Nicholls, Frederick Currey, Hal Currey, and Robert Currey, and other friends and family. Mrs. Currey was one of the founders and a life trustee of the Nature Conservancy.

John B. and Becky R. Dethero Scholarship: Established in 1989 by Dethero, class of 1962, and his wife, residents of Cleveland, Tenn., in their desire to provide educational opportunities to needy students. Preference is given to students who have participated in Career Beginnings at UTC.

Harry B. Deuberry Physics Scholarship: Established in 1985 by Deuberry, president of the class of 1930, to encourage physics majors in assisting faculty with projects.

Thomas O. Duff Scholarship: Established in 1956 by Thomas Duff, business and civic leader, patron and trustee of the University, augmented at his death by gifts from family and friends, with preference to be given to children of licensed Chattanooga pharmacists who want a career in pharmacy.

John W. Evans Scholarship: Established in 1966 by the will of John W. Evans, retired Chattanooga realtor, who bequeathed his entire estate to the University for the benefit of “needy and deserving students.”

Lillian B. Feinstein Art Scholarship: Established in 1980 in honor of Lillian B. Feinstein, sculptor, patron of the arts, and longtime supporter of the Hunter Museum and the University Art Department. The scholarship is awarded annually to a student majoring in art.

Fincannon Scholarship Endowment Fund: Established in 1984 by Al Fincannon. The scholarship is awarded upon the recommendation of the UTC Scholarship Committee with preference given to widowed or previously married women.

W. Max and Margaret Finley Scholarship Endowment Fund: UC alumnus W. Max Finley and his wife Margaret established this endowment fund in 1986 for the benefit of adult students entering or re-entering college as full or part time students working toward either undergraduate or graduate degrees. Preference is given to single parents, female students, students with declared majors in business administration, and students from Hamilton County and the greater Chattanooga area, including Georgia and northeast Alabama.


Thomas Geraghty Scholarship: Established in 1990 by friends and colleagues of Geraghty, who joined the faculty in 1960 as assistant professor of economics, later serving as director of the computer center, and holding the Clark Chair of Economics when he retired. Preference for this scholarship goes to students majoring in business.

John E. and Claudia F. Gilbreath Scholarship in Memory of Katherine Fraxier: Established in 1971 by Mrs. Gilbreath for deserving male students in memory of her husband and her sister, two of the founders of the Chattanooga Federal Savings and Loan Association, both prominent business and civic leaders who dies in 1969. Mr. and Mrs. Gilbreath graduated from the University of Tennessee, Knoxville.

Sharon Gilley Grant Memorial Scholarship: Established in 1984 by Claude and Mildred Gilley in memory of their daughter, an honor graduate and friend of UTC. This scholarship is awarded on a competitive basis in either opera or voice.

Douglas Chamberlain Griffith Memorial Scholarship: Established in 1984 by Mrs. Robert H. Griffith in memory of her son (1941-1984). A graduate of the University of Chattanooga, he was a captain in the U.S. Air Force and professional photographer. The scholarship is awarded based on student need.

Friends of Doug Griffith Scholarship: Established in 1985 by Wendell Burns and other friends and colleagues. The award is based on need.

Nita T. and Irvine W. Grote Scholarships: Established in 1976 by the Chemistry Department in memory of Dr. and Mrs. Irvine W. Grote. Dr. Grote served as a distinguished member of the chemistry faculty from 1931-1969. Endowment income annually provides scholarships for 12 outstanding chemistry majors.

Wayne Hannah/Chattanooga Advertising Federation Scholarship in Graphic Design: Established in 1985 in memory of the late Wayne Hannah, a noted radio and television broadcaster in Chattanooga. The scholarship is awarded by the Art Department with the Chattanooga Advertising Federation to a student entering the sophomore year at UTC as a major in graphic design.

Eleanor M. Hodges Scholarship: Established in 1988 by the president and secretary of Lawson Electric, Walter P. Hodges, in honor of his wife, Eleanor. The Hodges are parents of a 1978 UTC graduate. All other qualifications and considerations, academic and financial, being equal, first consideration for this award is given to graduates of East Ridge High School.

Andrew D. Holt Scholarships: Established in 1971 by the UT National Alumni Association in honor of Dr. Andrew P. Holt, president of the University of Tennessee from 1959 to 1970. Available on every UT campus, Chattanooga undergraduate students are allocated four four-year Holt Scholarships annually of $1500 each based on academic merit.

John L. Hutchesonjr. Memorial Scholarship: Established in 1983 by the Rossville Memorial Center and W. Frank Hutcheson in memory of John L. Hutcheson Jr., longtime member of the board of the University of Chattanooga and a prominent citizen of North Georgia. The scholarship is awarded to students who demonstrate successful academic performance. Preference for scholarship is given to students from specific North Georgia counties and Tiftonia.

Clarence T. Jones Prize in Astronomy: This scholarship was funded in 1989 through the estate of Arthur H. and Mary Louise Jones in honor of his father. The prize goes to an outstanding physics student who is a rising senior and has excelled in astronomy.
John Earlon Kerr Scholarship: Established in 1959 with a bequest from Lillian Webb Kerr, longtime East Lake Grammar School teacher, in memory of her son, a student at Vanderbilt University at the time of his death in 1915.

David Ardell Knauff Memorial Scholarship: Established in 1990 by Major Charles H. Knauff, U.S.A. Ret., in honor of his son, a cum laude graduate of UTC 1977, who died in Atlanta where he worked for CBS Television Productions. First consideration given to students from Ooltewah High School.

Paul Koblenz Memorial Scholarship: Established in 1990 through a bequest from Abe J. Koblenz as a memorial to his deceased son, in order to provide scholarships for deserving students.

Norbert Koch Scholarships: Two funds established in 1979 by gifts from former students, colleagues, and citizens of the Chattanooga community in honor of Dr. Norbert Koch, professor of engineering, on the occasion of his retirement after 32 years of dedicated service to the University to be awarded annually to a qualified and deserving engineering student.

Lookout Post 1289 Veterans of Foreign Wars Scholarship: Endowed in 1986 by the Lookout Post 1289, Veterans of Foreign Wars, this scholarship is intended primarily for veterans returning to school, students in the ROTC program, or students whose patriotism is strong.

David McKendrie Key Scholarship: Established by Sarah Key Patten in memory of her father, Postmaster General of the United States, U.S. Senator, Federal Judge, and one of the founders of the University.

Joyce Litchford Scholarships: Established in 1976 by Dr. R. Gary Litchford, a member of the the biology faculty, in memory of his wife, for scholarships to a senior pre-medical student and to a junior or senior member of the wrestling team.

Mr. and Mrs. Charles W. Loftin Scholarships: Established in 1983 by Amy Loftin in memory of her parents, Mr. and Mrs. Charles W. Loftin. The scholarships are awarded to outstanding students from the Department of Theatre and Speech.

Lovemans Marketing Scholarship: Established in 1988 as a Centennial gift to the University by the donor company under the leadership of president James L. Moore Jr. The Moore family and Lovemans Department Store have been economic and cultural leaders in Chattanooga with a long history of involvement with the University.

Dr. Littleton H. Mason Memorial Scholarship: Established in 1989 by his widow, Ruth, and other friends in memory of Mason, assistant dean of students. Preference given to minority students from low income families from Memphis.

Winston L. Massey Scholarship: Established in 1973 by the University of Chattanooga Foundation in honor of Massey, Guerry professor of mathematics, on the occasion of his retirement after 40 years of service to his alma mater, for an outstanding upperclassman majoring in mathematics.

Dr. William H. Masterson Memorial Scholarship: Established by the family of the eleventh president of the University of Chattanooga and first chancellor of UTC, this scholarship honors Dr. William H. Masterson who died March 3, 1983.

T.R. McAfee Memorial Scholarship: Established in 1979 and enhanced in 1980 by friends who hosted a T.R. McAfee Golf Tournament to raise funds for an endowed golf scholarship in memory of T.R. McAfee Jr., former University student and member of the varsity golf team.

Burkett Miller Scholarships: Established in 1954 by a generous gift from Miller, a leading Chattanooga attorney and philanthropist, to aid needy and worthy students.

A.C. "Scappy" Moore Athletic Scholarship Endowment: Established in the 1986 centennial year of the University by Mrs. Helen F. Moore, widow of A.C. Moore, this scholarship is available to intercollegiate athletes in memory of the long time University of Chattanooga football coach and popular local sports figure.

Scappy Moore Memorial Scholarship: Established in 1971 by memorial gifts from family and friends of longtime, distinguished head football coach and athletic director A.C. "Scappy" Moore Sr., who served the University from 1926-1971. Scholarship preference is given to a varsity football player who exemplifies the ideals of leadership, scholarship, and service.

Charles A. Noone Scholarship: Established in 1961, and enhanced at her death in 1980, by Mrs. Noone in memory of her husband, a prominent lawyer who practiced in Chattanooga for many years and who was the father of an alumnus.

Dorothea Woods Obear Scholarship: Established in 1990 by Chancellor Frederick Obear in memory of his mother who had a strong interest in the University and, in particular, its honors programs. The scholarship goes to a student in the University Honors Program.

Overmyer Athletic Scholarships: Established in 1969 by longtime trustee Donald H. Overmyer, class of 1930, and his wife, Ruth E. Overmyer, class of 1932, to provide a minimum of four scholarships to be divided among candidates for the varsity football and the varsity swimming teams as recommended by the head coaches. If there is no swimming team, members of the baseball team shall receive them, or if neither, they shall go to football.

Paramedical Careers Scholarship of the Women's Auxiliary to the Chattanooga and Hamilton County Medical Society, Inc.: Endowed in 1987 after many years of annual funding, this scholarship provides financial assistance for students pursuing health-related careers.

Jenks Fain Parker Memorial Scholarship: Established in 1984 by the family of Jenks Fain Parker. The scholarship is awarded to deserving students in the School of Engineering as recommended by UTC Scholarship Selection Committee.

U.G. and William E. Paschal Scholarships: Established by William Ernest Paschal, class of 1914, retired Akron rubber executive, in memory of his father, the Rev. U.G. Paschal, class of 1896. The first scholarship was given in 1965 for physical education majors, the second in 1967 for students participating in varsity football.

Elizabeth Bryan Patten Scholarships: Established in 1972 by businessman Z. Cartter Patten in honor of his wife, active civic, welfare, and religious leader of her community.

Sarah Key Patten Scholarship: Established in 1955 by Z. Cartter Patten in honor of his mother, one of Chattanooga's most beloved matrons, daughter, and mother of University trustees.

Ruth Clark Perry Scholarship: Established in 1969 by Mrs. Leonora Miller Seids of Perry, Ok., in memory of her friend, UC dean of women from 1924 to 1943 and professor of mathematics from 1922 until her death in 1955, to be awarded to an upperclasswoman majoring in mathematics.
Alex Radin American Public Power Association Scholarship Fund: Friends and colleagues of alumnus Alex Radin established in 1986 an endowed scholarship honoring Radin, the distinguished executive director of the American Public Power Association, a national organization headquartered in Washington, D.C., which represents more than 1,750 municipal and other local publicly owned electric utilities in 49 states and several foreign countries.

Dr. E.E. Reisman Jr. Memorial Nursing Scholarship: Established in 1981 under the terms of the will of Dr. Reisman, well-known Chattanooga physician and long-time supporter of the University, and augmented at his death by a memorial gift from his family. The scholarship is to be awarded annually to an outstanding nursing student.

Calvin U. Smith Jr. — G. H. Miller Smith Scholarships: Established in 1965 by Mr. and Mrs. George Blackwell Smith in honor of their nephew, Calvin U. Smith Jr. (1940-1963), and of their son, G.H. Miller Smith (1921-1944), both gallant young Chattanoogans who died in the armed forces of their country.

DeForest Spencer Scholarship Endowment: A 1915 graduate of the University of Chattanooga, DeForest Spencer established this scholarship endowment in 1986 to assist a needy student pursuing an undergraduate B.A. degree.

Iphigene Ochs Sulzberger Scholarship Endowment Fund in American History: This scholarship, funded in 1986 by Ruth Sulzberger Holmberg in honor of her mother, Iphigene Ochs Sulzberger, daughter of Adolph Ochs, former publisher of the Chattanooga Times and founder of the New York Times, provides scholarships for deserving full or part-time students working toward a degree in American History or a related area.

Dr. Charles Robert Thomas Scholarship: Established under terms of the will of Dr. Thomas, well-loved Chattanooga physician who died in 1968, to assist needy students in premedicine.

Thomasson Premedical Scholarship: Established in 1979 by Mr. and Mrs. Eugene M. Thomasson to be awarded to a qualified and deserving undergraduate student who is pursuing premedical studies.

LaVeme Thompson Memorial Scholarship: Established in 1987 by Dr. Jack Thompson, professor and head of computer science, and his children in memory of his wife, a former UTC faculty member. Preference is given to female students majoring in computer science.

Vanzant B. Warrenfels Scholarship: Established in 1976 by Mr. and Mrs. W.O. Cullen of Oxford, Ohio, in honor of Mrs. Cullen’s father, Dr. Warrenfels, to be awarded to a student participating in the University Scholars program.

Jim Wheeler Memorial Scholarship: Established as a memorial to Jill Wheeler, class of 1979, UTC School of Nursing, who was killed in an automobile accident in April of 1980. This endowment is funded by Jill’s parents, Mr. and Mrs. Jack M. Wheeler, and other friends and colleagues. The award goes to a senior nursing student.

Chairs of Excellence

American National Bank and Trust Company Chair of Excellence in the Humanities: Placed in the College of Arts and Sciences, the ANB chair has as its purpose presenting the best that has been and is now being thought in the humanities. This revolving appointment brings to the community visiting professors of national and international stature. The humanities chair established in 1986 helps meet the University’s commitment as a cultural center for the region.

Walter M. Cline Jr. Chair of Excellence in Rehabilitation Technology: In cooperation with UTC’s College of Health and Human Services and the School of Engineering, the Cline Chair of Excellence is designed to make major contributions to the field of rehabilitation technology and to the education of students interested in pursuing careers related to this discipline. The charge to the holder of the chair, established in 1986-87 with a gift from Mr. Cline’s widow and children and matching funds from the UC Foundation, is development of programs, curricula, and research in rehabilitation engineering, physical therapy, occupational therapy and rehabilitation nursing.

J. Burton Frierson Chair of Excellence in Business Leadership: Designed to give business majors at UTC exposure to exceptional educational opportunities in business leadership, this chair of excellence was funded by the Dixie Yarns Company and matched by state funds in the 1986-87 academic year in honor of J. Burton Frierson. The holder of the chair, a person of national stature in business, government, or technology, helps the University advance its stated goals of becoming a regional leader in business education.

Clarence E. Harris Chair of Excellence in Business Administration and Distinguished Lecture Series in Entrepreneurship: The first chair of excellence to be funded by an alumnus, this chair provides the students and faculty of the school, as well as the broader community, a better understanding of the world of business. Distinguished lecturers will be brought to the campus each year in order to engage students, faculty and others in discussions related to trends in innovation, entrepreneurship, corporate strategies, and the global economy. Mr. Harris, class of 1964, is the president and chairman of the board of Carriage Industries Inc., Calhoun, Ga.

Chair of Excellence in Judaic Studies: Offering a focus for special examination of the impact of Judaic influence on Western civilization and history, this chair was established in 1986 by a special Committee for the Judaic Chair of Excellence and from private community support. Enriching the curriculum of the Department of Philosophy and Religion, the chair is also a major asset to the cultural life of the community and the holder of the chair serves as a key resource for the integration of Judaic studies in appropriate contexts throughout the University and in the community at large.
Lyndhurst Foundation Chair of Excellence in Arts Education: Funded in 1988 as a complement to the Southeast Center for Arts Education established on the UTC campus with grants from the Getty Foundation, the Gherkin Foundation, and Lyndhurst, this chair is designed to bring to the University and the southeast region of Tennessee a nationally recognized expert in discipline-based arts education (DBAE). The chair holder will teach art education courses to undergraduate and graduate students, conduct research, serve as an advocate for improved arts education in Tennessee, and oversee the center's programs, including three constituent institutes for teachers in the visual arts, theatre, and music.

Burkett Miller Chair of Excellence in Management and Technology: A cross-disciplinary chair of excellence that bridges the resources between the Schools of Business Administration and Engineering at UTC. Funded by the Tonya Memorial Foundation of Chattanooga, the holder of this chair assists the University and the Chattanooga community in understanding the importance of technology; identifying and nurturing the development of technology; and assisting with the transfer of that technology to the marketplace in ways which foster economic development.

Provident Life and Accident Insurance Company Chair of Excellence in Applied Mathematics: This chair of excellence, funded by joint gifts from Provident and the University of Chattanooga Foundation, brings to the University and the community a heightened sense of the significance, utility, and relevance of mathematics and its applications. The holder of this chair functions not only as a scholar, teacher, and researcher, but also as a valuable resource and vigorous advocate for mathematics in the schools and community-at-large.

George R. West Jr. Chair of Excellence in Communications and Public Affairs: Funded by the Westend Foundation in 1986 in honor of its founder, George R. West Jr., this chair of excellence is designed to assist UTC in educating students for responsible and effective communications in the realm of public affairs. Students pursuing careers in business, education, communications, political science, and other disciplines benefit from this chair which emphasizes critical analysis and presenting, particularly by the written word, the issues of public affairs in a truthful, effective and responsible fashion.

Professorships

Alumni Distinguished Service Professorships are awarded to outstanding faculty members of each of the four campuses of The University of Tennessee by the University of Tennessee National Alumni Association.

C.C. Bond Minority Professorship in Education: Established in 1987 by friends and colleagues of Dr. Claude C. Bond, distinguished educator in the Chattanooga public schools. The professorship is intended to attract an outstanding minority leader to the School of Education at UTC.

Chattanooga Manufacturer's Association Professorship in Engineering: Established in 1980 to provide support for the School of Engineering that enables the University to reward a member of the engineering faculty for excellence in teaching, public service, and research.


George C. Connor Professorship in American Literature: Named for Guerry Professorship of English emeritus George C. Connor, this professorship was established in the spring of 1985 by colleagues, former students, and friends in honor of his 26 years of service.

Joseph F. Decosimo Centennial Professorship in Accounting: Established in 1977 by Mr. and Mrs. Joseph F. Decosimo, civic and business leaders, to support the program in accounting and upgraded during the centennial campaign.

W. Max Finley Centennial Professorship in Business Administration: Established by friends and family of alumnus W. Max Finley, class of 1931, this fund promotes faculty research which involves students.

Nita T. and Irvine W. Grote Professorships in Chemistry: Established in the fall of 1986 and awarded to the first recipients in 1988 for outstanding teaching, these were established through a generous gift from the estate of Dr. and Mrs. Grote. An inventor of note, Professor Grote taught at UC for 38 years.

Alexander and Charlotte Patten Guerry Professorships: Established by anonymous gifts in 1959 and 1961 in memory of the University's esteemed seventh president and in honor of his dedicated wife, to recognize a group of outstanding professors.

Henry Hart Professorship in Business Administration: Established in 1978 by R. Henry Hart, a civic and business leader, to provide faculty support for the University's School of Business Administration.

Ruth Kiser Hyder Endowed Professorship of Educational Leadership: Established in 1985 by Dr. Charles Hyder, Guerry Professor Emeritus of Education, in honor of his wife, a distinguished teacher in the elementary schools of Chattanooga. This professorship recognizes leadership in the preparation of teachers in the public school system grades K-12.

Mary B. Jackson Professorship of Nursing: Established in 1989 to support and maintain a high caliber nursing faculty by friends and colleagues of Mrs. Jackson, who came to UTC in 1973 and charged with organizing the nursing program.

H. Clay Evans Johnson Professor of Nursing: Established in 1989 to emphasize the training of talent and upholding the ethical standards of nursing by Johnson, former chair of the Board of the UC Foundation. He served as president of the Hamilton County Memorial Hospital Association.

Summerfield Key Johnston Centennial Scholars Endowment for Junior Faculty Development: Established in 1987 as a Centennial gift by local Coca-Cola executive Summerfield Johnston Jr., this endowment provides support for new faculty members in the School of Business Administration who have demonstrated potential for making substantial contributions to teaching and research.

Alan S. Lorberbaum Professorship in Marketing: Established in 1978 by Alan S. Lorberbaum, a business leader and carpet executive in Dalton, Georgia, to provide faculty support for the marketing program in the School of Business Administration.
Robert L. Macelllan Centennial Professorship in Insurance: Robert L. Macelllan, Provident Life and Accident Insurance Company insurance executive and UC Foundation trustee, was a major benefactor of the University. This professorship was established in 1986 by his widow to provide expertise and support for the Chattanooga insurance industry by teaching the principles and practices of insurance.

LeRoy A. Martin Distinguished Professorship of Religious Studies is supported by the UC Foundation in memory of the last ordained Methodist minister to serve as president of the University of Chattanooga, 1959-66, chancellor from 1966-69, and John H. Race Professorship of Classics until his death in 1971. This professorship was established to ensure ties with the University’s Methodist heritage.

Luther Masingi U Professorship in Communication: Established in 1990 by friends and associates of local celebrity in honor of his 50 years in broadcasting. The professorship is to emphasize the training of talent and upholding the high standards of communication set by Masingi.

George Lester Nation Centennial Professorship of Entrepreneurship: Established in 1986 by his son Ray Nation, this professorship honors the late founder of Nation Hosiery Mills. Both in the classroom and the community, the holder of the professorship is charged with emphasizing entrepreneurship and economic development.

Adolph S. Ochs Centennial Chair of Government: Established in 1925 by Mr. Ochs, owner and publisher of The Chattanooga Times and The New York Times, friend of the University, father and grandfather of trustees. It was upgraded to a Centennial title in 1986 by members of the family.

Scott L. Probasco Jr. Chair of Free Enterprise: Established in 1976 by Burkett Miller, a leading Chattanooga attorney and philanthropist, in honor of a longtime friend, well-respected Chattanooga citizen, and trustee of the UC Foundation, for a distinguished professorship relating to the free enterprise system.

John Stagmaier Chair of Economics and Business Administration: Established in 1956 by the Tennessee Paper Mills in memory of its founder, respected and admired citizen of Chattanooga and University trustee from 1932 until his death in 1943.

Trustee Professorship: Established in 1987 by a former student in honor of geology professor Dr. Robert Lake Wilson for demonstrating a personal interest in the welfare of his students. It is intended to recognize and reward faculty who go out of their way to provide encouragement and support.

LC Foundation Professorships were established in 1976 to recognize outstanding younger faculty and to provide an incentive for their remaining at UTC.

Arthur G. Vieth Professorship in Business Finance: Established in 1983 by former students and friends in memory of the former holder of the John Stagmaier Chair of Economics and Business Administration, a greatly admired teacher and public-minded citizen.

Marvin Edward White Professorship in Business Administration: Established in 1978 by Selox Inc. to provide faculty support for the University’s program in business administration and to honor the company’s founder.

Student Loan Funds

William E. and Mary F. Ansbach Memorial Student Loan Fund: Established in 1968 by Raymond J. Ansbach, Chattanooga merchant, in memory of his parents.

Dr. H. Eugene Homes Student Loan Fund: Established in 1969 with a generous gift from the Hartsell, Alabama, physician who took his premedicine work at UC from 1954-1956 and his M.D. from UT in 1960.

Lewis B. Headrick Memorial Student Loan Fund: Established in 1966 by family, friends, and colleagues of Headrick, class of 1926, research physicist with the Radio Corporation of American for 34 years.

Ethel Chapin Morgan Student Loan Fund: Established by a bequest from the UC alumna. B.S. degree in 1925, at the time of her death in 1973 for students in chemistry or history.

Frank L. Underwood Memorial Student Loan Fund: Established in 1967 with a bequest from Mrs. Underwood in memory of her husband, vice-president of Chattanooga’s Hamilton National Bank and UC trustee until his death in 1942.

Additional Funds

Dr. North Callahan Honors Essay Prize: Established in 1984 by Professor Emeritus of History, New York University, author, and UTC Distinguished Alummi. Prize awarded to a UTC student for the best honors essay, as determined by an honors committee, based on UTC library research.

Morrow Chamberlain Memorial Library Fund: Established in 1971 by a bequest from Mrs. Chamberlain in memory of her husband, Chattanooga business and civic leader, chairman of the UC Board of Trustees from 1932 to 1958, member from 1919 until his death in 1959.

Bess Taylor Gofer Endowed Professional Health Care Student Advocacy Fund: Established in 1985 by Dr. Robert H. and Mary A. Cofer, this fund is used to promote the highest level of guidance and preparation for faculty and students pursuing careers in nursing, dentistry, medicine, cytotechnology, dental hygiene, medical technology, pharmacy, physical therapy, or veterinary medicine.

Paul W. Curtis Jr. Awards: Endowed in 1948 by Mr. and Mrs. Paul W. Curtis in memory of their son, class of 1933, who died in WW II, for outstanding students in engineering.

Irvine W. Grote Fund for the Department of Chemistry: Established in 1976 by a bequest from the estate of Dr. Irvine W. Grote, Guerry professor of chemistry, to be used for the benefit of the chemistry department.

Hartung Fund for Nursing Education: Established in 1969 by Dr. and Mrs. Carl A. Hartung, UC graduates of 1929 and 1931 respectively, to support of the nursing program.

Mary B. Jackson Award Endowment: Established in 1977, monetary endowment established in 1984, to honor outstanding senior nursing student selected by peers.

John B. Haskins Jr. Memorial Laboratory: Science laboratory equipped and its upkeep endowed in 1948 by gifts from Dr. John B. Haskins in memory of his son, a UC student who died in 1944 after a long illness.
Hinds Memorial Book Fund: Established in 1921 by Mrs. Kate Hinds Steele and Mrs. Bashie Martin in memory of their father, J.I.D. Hinds, for the purchase of chemistry books.

Martha Chase and Andrew David Holt Library Endowment Fund: Established in 1970 by the Hamilton County chapter of UTNAA and other friends in honor of the retiring UT president and his wife, for the purchase of library books.

Keese Lecture Series: Established in 1962, endowed in 1964 by Will S. Keese Jr. in memory of his mother, Lucy Beall Keese, who died in 1959, and in honor of his father, the late William S. Keese, longtime directors of the Bonny Oaks School, to bring to the campus each year an outstanding humanities speaker.

EMis K. Meacham Annual Writers Workshop and Creative Writing Professorship: Established in 1985 by Jean Austin Meacham, former UTC professor and dean in honor of her husband, Judge EUis K. Meacham, a distinguished jurist, author and UCalumnus. The income from the endowment provides a stipend each year for the faculty member responsible for that year's Meacham Writers Workshop.

T. Carter and Margaret RawUngs Lupton Library Endowment Fund: Established with an anonymous gift, this fund provides for the continued acquisition of materials to enhance the holdings of the library.

Captain Daphne Marjorie Painter Memorial Art Education Endowment Fund: Endowed in 1984 by Mrs. Marjorie Stanford Painter in memory of her daughter to fund art instruction in the UTC Childrens Center.

Cranston B. Pearce Center for Applied Engineering and Technology: Complementing UTC's Center of Excellence for Computer Applications, the Pearce Center in the School of Engineering was funded by the Tonya Foundation in 1984 in memory of its president. The purpose of the center is to move the University to the forefront of instruction, research, and service in the area of computer and information sciences. The center also plays a vital role in the economic development of Chattanooga and the Southeastern region.

Seth C. Smith Management Award: Established in 1975 by the Society for the Advancement of Management in memory of its distinguished business leader, awarded annually to an outstanding student majoring in management.

Carl A. Swafford Jr. Endowment Fund: Endowed in 1984 by Mr. Carl A. Swafford Sr. in honor of his son for the purchase of equipment and supplies for the biology and chemistry.

Terrell Louise Tatum Memorial Fund: Established in 1968 by the University in memory of its Guerry professor of Spanish who served her alma mater for 43 years, for the purchase of books and teaching materials for the modern languages.

Terrell Louise Tatum Spanish Award: Endowed in 1964 by an anonymous donor to honor Guerry professor of Spanish, to the outstanding senior Spanish major.

Edgar B. Tolson Memorial Book Fund: Established in 1942 from Tolson's estate, authorized by Wilfred O. Stout Sr., executor, to purchase of books of history and philosophy.

William H. Wheeler Center for Odor Research: The center is a cross-disciplinary laboratory 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.